Behavioural Macroeconomics: Unveiling the Psychology of Inflation Expectations

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SUMMARY: This article delves into the exploration of intersections between behavioural economics and macroeconomics, focusing on the psychology of inflation expectations. We present a critique of the Rational Expectations Hypothesis (REH) and propose perspectives from the standpoint of behavioural macroeconomics. In the empirical section, we examine the relationship between the evolution of inflation expectations and real inflation, revealing distinct patterns in the expected inflation distribution among the observed countries—the European Union and the United States. The article also addresses procedural rationality, emphasizing the role of recent observations in shaping inflation expectations. Additionally, it focuses on understanding the principles of behavioural macroeconomics in policy formulation, placing emphasis on adaptive rationality and intelligent decision-making. The integration of psychology into macroeconomics may offer a more realistic understanding of the development of inflation expectations, signifying a potential new era in economic modelling.
KEYWORDS: behavioural macroeconomics, the psychology of inflation, inflation expectations, macroeconomics, inflation

1. Introduction

In the modern and dynamic understanding of macroeconomics, it is widely

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acknowledged that the expectations of economic agents can influence the output of the economy. Therefore, it is essential for policymakers to understand their significance, particularly taking into account the formation of inflation expectations of individual economic agents. The examination of inflation expectations has become highly relevant in the present context. However, there is often a misunderstanding of the approach when explaining inflation from a psychological perspective—why should psychology investigate a phenomenon such as inflation? It is crucial to emphasize that economics is not a natural science but a social science, where human behaviour and psychological motivations play a fundamental role. This perspective is essential for a comprehensive understanding of inflation, as economic actors are human beings driven by psychological factors. The importance of this perspective is underscored by the recent series of global financial crises and empirical findings on the failures of the Rational Expectations Hypothesis (REH), which have led many researchers to develop alternative models that consider the expectations of economic agents (Frydman and Phelps, 2013). One alternative way to conceptualize modern macroeconomics is the incorporation of psychology into macroeconomic models. This gives rise to a new direction in economic research, commonly referred to today as behavioural macroeconomics. Looking back into history, it is evident that as early as the 1980s, Muth, the founder of REH (Muth, 1961), proposed the inclusion of cognitive bias into expectation theory (Hoover and Young, 2013). Two recent problems associated with REH also highlight the relevance of psychology. The first is the absence of factual assumptions. Existing economic theories heavily rely on REH for explaining any form of expectations of economic agents. However, throughout the development of this theory, many economists attempted to revise its fundamental assumptions to create a more realistic version of the rational expectations theory. Research by Curtin (2009), utilizing data from the University of Michigan's survey on expected inflation, found that individuals do not behave according to rationality assumptions. While there is no certainty that the psychological approach is capable of perfectly predicting future economic events, it can be considered to some extent as an alternative to economic modelling. Psychology, as the specific study of human thought and behaviour, is the most suitable academic discipline to aid in improving economic models that involve human behaviour.

Studies aiming to adjust the rational expectations theory failed to eliminate one of the assumptions in economic analysis - full pre-determination. Economics assumes a predetermined model for the formation of inflation expectations. It assumes that economic entities follow certain mechanical rules to create their expectations, and the effects of any changes to these rules must be predetermined. The problem with abandoning full pre-determination is that the rules governing the behaviour of economic entities change unpredictably over time. In the relatively popular Lucas critique (Lucas, 1976), it is argued that a model unaffected by routine changes should include fundamental parameters governing changes in individual behaviour. This critique led to the application of microeconomic principles in macroeconomics, assuming that utility maximization might be a suitable assumption for macroeconomic model creation.

However, the global financial crisis prompted a re-evaluation of this approach. Upon closer inspection, it becomes evident that economic agents do not have enough knowledge and information to maximize their utility in every decision-making scenario. The need for incorporating psychology into macroeconomics highlights the importance of studying the formation of inflation expectations. It can be assumed that individual inflation expectations may not have deterministic regularities, but they exhibit a certain statistical regularity, observable through empirical data from various countries. Some empirical analyses have shown that the distribution of expected inflation data tends to have a positively skewed and long-tailed pattern in most countries. Since different economies undergo different dynamics or processes, and economic entities are heterogeneous from both psychological and economic perspectives, it is not expected that distributions of expected inflation in different economies will be similar.

One of the many examples of historical crises that call for behaviourally oriented macroeconomics is the rise and collapse of Long-Term Capital Management (LTCM) in the late 1990s. LTCM, a hedge fund, was built on sophisticated quantitative models assuming efficient markets and rational behaviour of agents. However, these models did not take into account psychological factors such as the deviation from the rationality of agents, which could have an impact on market dynamics. The so-called LTCM crisis highlights the need to incorporate agents' behavioural factors into macroeconomic and monetary policy frameworks. For policymakers as well as for central banks, an understanding of psychological factors can be beneficial, which can be reflected in a better formulation and subsequent implementation of policies aimed at maintaining financial stability (Edward, 1999).

When perceiving human behaviour with more realistic assumptions, it is possible to recognize the limitations of agents in terms of information seeking and processing. This compels us to examine the actual process of forming inflation expectations, and this is where the psychological conceptualization of expectation hypothesis, called procedural rationality, becomes important.

Psychological studies suggest that the basis of any predictions always lies in the recent past of a series of observations. Many researchers question whether documented forms of expectations can correspond to sound statistical reasoning or if they might represent errors. This tendency parallels the discussion in behavioural economics, where researchers have long focused primarily on studying deviations from rational behaviour. As demonstrated by research on phenomena such as the hot hand phenomenon and the gambler's fallacy, this perspective is gradually changing. The current view on the topic, such as human extrapolation, must start with an understanding of the functional and adaptive aspects of documented behaviour while still acknowledging possible shortcomings of such heuristics. This approach appears to be a new paradigm in behavioural economics. Expressions like "adaptive rationality" (Smith, 2003) or "intelligent decision-making" (Altman, 2017) can be mentioned to emphasize people's tendency to find simple but practical ways to remain functional in a complex and uncertain world.

2. Behavioural Factors and Inflation

Inflation as an economic phenomenon may not only be perceived as an indicator of changes in the overall price level but can be considered a complex contemporary phenomenon. In this section of the article, we will focus on the behavioural factors that can shape the reactions of economic agents to inflation and, consequently, influence the formation of inflation expectations.

While rational expectations, as defined by Muth (1961), have been highly successful in macroeconomic models due to their conceptual and mathematical elegance, criticism has emerged for imposing unrealistically high levels of knowledge and computational ability on economic agents. Models featuring rational, forward-looking agents predict that aggregate prices and output follow white noise processes around their steady-state equilibrium, thereby neglecting the high persistence empirically observed in aggregate data (Rudd and Whelan, 2005). In a similar vein, shocks to monetary policy in these models have maximum impact on output and inflation in the period of the shock, contrasting with empirical analyses that indicate a prolonged effect with a hump-shaped impulse response.

Benford and Driver (2008) discovered that in analyzing survey data for the UK, 50% of respondents base their inflation expectations on their current perceptions of inflation. Additionally, Branch (2004, 2007), Pfajfar and Zakelj (2009), Pfajfar and Santoro (2008), and Maag (2009) present empirical and experimental proof of diversity in inflation expectations.

Elements that can help explain the reactions of individuals in the presence of inflation can already be found in Prospect Theory (Kahneman, Tversky, 1979). Since Prospect Theory reveals that people perceive changes not in absolute value but generally in relative terms concerning their own reference points, it can be assumed that individuals will not only consider the percentage value of the inflation rate but rather its relative impact on their own finances. Prospect Theory also implies that people feel losses more strongly than gains (Kahneman, Tversky, 1979, 1992). Therefore, if the real inflation rate is higher than the initial expectations, individuals may perceive it as a greater decline in their purchasing power, influencing their consumer decisions.

Vogel et al. (2009) test the hypotheses of Prospect Theory concerning households' perceptions of inflation that underlie Brachinger's IPI through panel estimation across 12 European countries. Their findings indicate that perceptions exhibit a more pronounced reaction to 'losses' in inflation compared to 'gains' before the Euro cash changeover, but not afterward. Furthermore, empirical evidence supports the availability hypothesis, suggesting that frequently purchased goods exert a stronger influence on inflation perceptions.

Expanding on prospect theory, Dräger et al. (2013) utilize loss aversion to study inflation perceptions and investigate non-linearities in the inflation-perceptions link for a group of 10 Euro zone countries. In line with loss aversion, inflation changes above a certain benchmark are more keenly felt. Panel smooth transition models demonstrate non-linearities in the inflation-perceptions association concerning real

inflation and time, especially under flexible loss functions. Dynamic fixed effects analyses support this finding, showing a steeper value function slope in the loss area and an average reference inflation rate near 2%.

Del Giovane et al. (2008) included a new query in their study on Italian consumers, inquiring about any price reductions in the past five years. They discovered that respondents who reported observing decreases in prices had significantly lower perceptions of inflation compared to the rest, supporting the idea of asymmetric inflation perceptions.

Chatterjee (2011) explores differences in perceived shipping cost inflation related to online promotions that claim to reduce the base product cost, reduce shipping fees, or reduce the overall price, and how this impacts deal values for individuals sceptical of shipping charges and those who are not sceptical. Using insights from multi-component pricing and mental accounting research, a lab experiment examines whether shipping charge sceptics perceive shipping cost inflation differently for various online promotions compared to non-sceptics, and whether they perceive the value of similar promotions presented as reduced product cost, reduced shipping fees, or reduced overall price differently for items with high or low prices and small or large shipping fees on retail websites. Results indicate that shipping charge sceptics and non-sceptics vary in their perception of shipping cost inflation and deal values for different online promotions only when the shipping fee is substantial compared to the base cost. Reduced price promotions are most appealing for high-priced items with low surcharges but least appealing for items with large surcharges. In the case of large surcharges, shipping charge sceptics prefer promotions that reduce the overall price, while non-sceptics prefer promotions that reduce shipping fees.

Dhyne et al. (2006) investigate if there is asymmetric behavior in how individuals perceive price increases compared to price decreases. Hoch et al. (1994) dispute any asymmetry in a study on US retailers, while support for loss aversion is found in studies by Hardie et al. (1993) and Camerer (2000). However, both studies focus on consumers' purchasing reactions to price changes, not on individuals' perception changes towards price changes.

In 1979, Franco Modigliani and Richard Cohn conducted a ground-breaking study in behavioural finance, revealing that investors underestimate the value of companies during inflation if they fail to consider inflation's impact on a company's income statement, which they termed "money illusion."

Money illusion is a phenomenon that describes the tendency of people to perceive the value of money based on nominal values and ignore the impact of inflation, i.e., individuals do not distinguish between nominal and real quantities. For example, if wages increase in absolute terms, but individuals fail to account for inflation, they may feel that they are earning more for their work, even though their real purchasing power is actually decreasing (Fisher, 1928).

Tsai (2020) found that encountering unexpected low inflation leads house owners to adjust their expectations of housing return risk and overestimate housing prices, causing money illusion effects. Using US housing market data from 1960 Q1 to 2016

Q1, biases in the price-rent ratio were comprehensively estimated. Results showed that money illusion effects are present when commodity prices remain stable, supporting the study's hypothesis. Additionally, the author found that unexpected low inflation raises housing premiums, resulting in higher increases in housing prices compared to rent prices, leading to mispricing in price-rent ratios.

Karahan and Özsöylev (2023) show that despite the absence of money illusion and mispricing in the 1990s hyper-inflationary period, there was a notable increase in anomalous pricing of risky securities during inflationary periods in the last two decades, particularly with the onset of inflationary pressure from the COVID-19 pandemic. The different outcomes in various inflation regimes can be attributed to rational inattention and the influence of past inflation experiences on investment choices.

Darriet et al. (2020) propose an original measure of money illusion via an experimental task. This assignment involves a sequence of decisions between two uncomplicated bonds, where their returns are exclusively influenced by inflation or deflation. The authors offer a detailed gauge of money illusion, exhibiting a correlation with conventional measures (questionnaires) of the phenomenon. Additionally, their findings indicate that the extent of money illusion varies based on the decision context, such as inflation or deflation, and the participants' capabilities. Individuals possessing financial knowledge exhibit a lower susceptibility to money illusion compared to others, while there is no observable impact of numeracy.

Grasping the concept of inflation is essential for effective financial decision-making, yet a notable barrier lies in the phenomenon known as money illusion. Through a survey administered to university students, Celiktas and Yilmaz (2020) investigate the factors influencing money illusion, incorporating variables such as financial literacy and education. Additionally, they examine the implications of individuals' self-perceived interest and knowledge in financial matters. The findings indicate that a heightened level of financial knowledge correlates with reduced levels of money illusion, and education contributes to an enhancement of financial knowledge.

A different bias impacting inflation perceptions and expectations is the availability hypothesis, as explained by Tversky and Kahneman (1973). This theory suggests that people judge event frequency based on how easily they can recall them. In terms of price changes, this may lead individuals to place greater emphasis on changes in prices of commonly purchased items. Studies by Jungermann et al. (2007) and Kurri (2006) offer evidence for this. Moreover, due to the Weber-Fechner Psychophysical Law, whereby perceived inflation is a logarithmic function of actual price changes, the availability bias could be intensified. Research by Thaler (1980) and Batchelor (1986) supports this idea. Additionally, Tversky and Kahneman (1981) found that economic agents perceive a 5% price change as higher when the base price is small.

Uncertainty about the origins of information frictions in household inflation expectations is a key issue. New evidence from survey experiments (Cavallo et al., 2017) sheds light on this issue. Two primary findings emerge from their investigation. Firstly, individuals in contexts characterized by lower inflation exhibit notably weaker prior expectations regarding the inflation rate. This observation suggests that rational inattention may constitute a significant contributor to information frictions.

Secondly, cognitive limitations also emerge as a source of information frictions: even when accurate inflation statistics are readily available, individuals continue to assign substantial importance to less accurate sources of information, such as their memories of price changes for supermarket products. The authors explore the implications of these findings for macroeconomic models and policy formulation,

Brazier et al. (2006) analysed the decline in inflation volatility in recent decades using a monetary overlapping-generations model. Agents use two heuristics to forecast inflation based on lagged inflation and an inflation target. They switch between these heuristics imperfectly based on past performance. The economy's response to productivity shocks and inflation depends on the proportion of agents using each heuristic, causing fluctuations in economic volatility measures. Comparing monetary policy rules, they find a rule responding to productivity shocks and inflation expectations better stabilizes the economy. Introducing an explicit inflation target can reduce inflation volatility depending on agents' access to heuristics before its implementation.

The evolving landscape of macroeconomic research recognizes the need to consider psychological factors in understanding and modelling economic phenomena, especially in the realm of inflation expectations.

Integrating psychology into macroeconomic models, often referred to as behavioural macroeconomics, provides a more realistic understanding of human behaviour, especially in the context of complex economic processes such as the formation of inflation expectations and subsequent formulation of central bank policies.

3. Behavioural Macroeconomics and Monetary Policy

Examining optimal monetary policy from a behavioural standpoint yields a diverse set of outcomes in contrast to rational frameworks. Relaxing the assumption of rational agents helps address a critique of the New Keynesian model regarding the persistence of macroeconomic variables in response to monetary policy shocks. This leads to similar conclusions as Woodford (2010) regarding the historical dependency of the targeting rule under commitment. Minor deviations from this policy benchmark, as seen in the rational inattention framework, result in slight welfare differences compared to the rational case without changing the policy conclusions of the rational expectations model.

According to Svensson (2003), targeting rules are more suitable for forward-looking central banks than mechanical instrument rules for monetary policy. The limitations of simple rules in replicating the commitments solution highlight the drawbacks of this approach. Adaptations in policies based on changing perceptions require a shift from mechanical to targeting rules for managing expectations in a behavioral world. Central bankers should measure inflation misperceptions to adjust policies in response to changes in specific levels of myopia, possibly through regular surveys.

In the aftermath of the Global Financial Crisis, members of central banks and policy institutions have urged a comprehensive reassessment of the Inflation Targeting (IT) framework, which has guided the policy decisions of major central banks for several decades (Blanchard and Summers, 2019; Bernanke, 2020). Some policymakers propose the adoption of Price Level Targeting (PLT) as a measure to address the challenges posed by the Zero Lower Bound (Bernanke, 2020). Others advocate for retaining the current IT framework while suggesting adjustments to its parameters, such as raising the inflation target (Blanchard and Summers, 2019) or implementing negative interest rates. The debate between IT and PLT, even predating the crisis, has been emblematic of the ongoing discussions in the modern era of monetary policy (Svensson, 1999).

The assessment of the instrument rules favours strict PLT compared to other monetary policy regimes, as seen in research by Hatcher and Minford (2016) in the rational case. The lack of variety in targeting rules raises concerns about their effectiveness in replicating optimal policy under bounded rationality. This inability of simple rules to stabilize the economy and reach the first-best solution under bounded rationality suggests a re-evaluation of their role in monetary policy. Additionally, their mechanical nature may not be suitable for addressing the evolving inattention of agents.

Paul De Grauwe (2010) construct a macroeconomic model where agents have limited cognition, leading them to rely on biased rules to predict future economic trends. Despite their bias, agents adapt and learn from their mistakes, resulting in cycles of optimism and pessimism driven by correlated biased beliefs. The author investigates the circumstances in which these "animal spirits" emerge and compare the model's dynamics with a simplified DSGE version. The author also analyses the impact on monetary policies and conclude that strict inflation targeting is not ideal as it allows for increased waves of optimism and pessimism, destabilizing output and inflation.

Bertasiute et al. (2020) examine various behavioural models of expectation formation within a multi-country New Keynesian currency union framework. Their analyses yield the following consistent findings. Firstly, economic integration plays a pivotal role in ensuring the stability of economic dynamics within a currency union. Secondly, in situations where economic dynamics are inherently unstable, adopting a more activist monetary policy does not contribute to stabilizing economic dynamics. These results align with their counterparts in the rational expectations version of the model, where economic integration is critical for the determinacy of equilibrium, and in cases of indeterminate equilibrium, a more activist monetary policy does not lead to a determinate outcome. When applied to euro area data, the findings indicate that the behavioural macroeconomic model outperforms its rational counterpart in terms of predictive accuracy.

Benchimol and Bounader (2023) create a behavioural New Keynesian model to examine the best monetary policy with households and firms that have different levels of short-sightedness. Five main findings are identified. Initially, the model depicts consistent microeconomic and aggregate short-sightedness by transitioning

from subjective to objective expectations. Secondly, the best monetary policy involves implementing inflation targeting when short-sightedness impacts agents' inflation expectations. Thirdly, targeting the price level is the optimal policy under various forms of short-sightedness like output gap, revenue, and interest rates. Rational inflation expectations are crucial for optimal results under bounded rationality in price level targeting. Additionally, bounded rationality is not necessarily harmful and can even lead to welfare improvements with extreme cognitive discounting. Lastly, this research shows that the behavioural model outperforms the rational model based on empirical evidence.

Gülşen and Kara (2021) explore how inflation expectations change in response to the economic and policy environment over 13 years in an emerging economy. The dynamic policymaking and varied data provide a suitable backdrop for examining this issue. A unique survey includes matched policy rate and fixed-horizon inflation expectations at an individual level. A new method uses feedback from survey participants to determine the baseline model for expectations dynamics. Analysis suggests that the effectiveness of inflation targets depends on policy performance. As targets lose credibility, past inflation gains more importance in expectations formation, and the link between exchange rates and inflation expectations strengthens. The findings suggest that expectations behaviour can shift rapidly with economic and policy performance, cautioning policymakers in both advanced and emerging economies against assuming stability in inflation expectations.

In general, the expectations of agents are important for how monetary policy is carried out. An example of this is policymakers wanting to inform the public through extensive communication. Central banks have been educating agents in economics for years to enhance understanding and trust in their policies, among other goals. These efforts can be seen as aiming to reduce short-sightedness and guide agents towards rationality, considering that bounded rationality is inherent to human behaviour and can benefit welfare in certain situations. This highlights the importance of central banks using appropriate strategies that take into account agents' short-sightedness to improve welfare. Encouraging central bank personnel to study, monitor, and analyse agents' short-sightedness is a pertinent recommendation of this paper. Assessing the level of short-sightedness among economic agents is an area where central banks should invest more resources. Following a comparison made by Thaler (2016), it is suggested that central banks should focus on understanding the extent of short-sightedness in Homo sapiens and their consistent behaviour, rather than trying to educate and transform individuals into Homo economicus.

The key question for policymakers is to what extent and whether they influence the inflation expectations of households and businesses, as measured in surveys, through their actual economic decisions. For example, individuals tend to act more intuitively when making purchases, and they generally do not contemplate inflation with the same focus and in the same manner as when responding to questions in surveys about their inflation expectations. Therefore, their declared expectations may not always correspond to their actual behaviour.
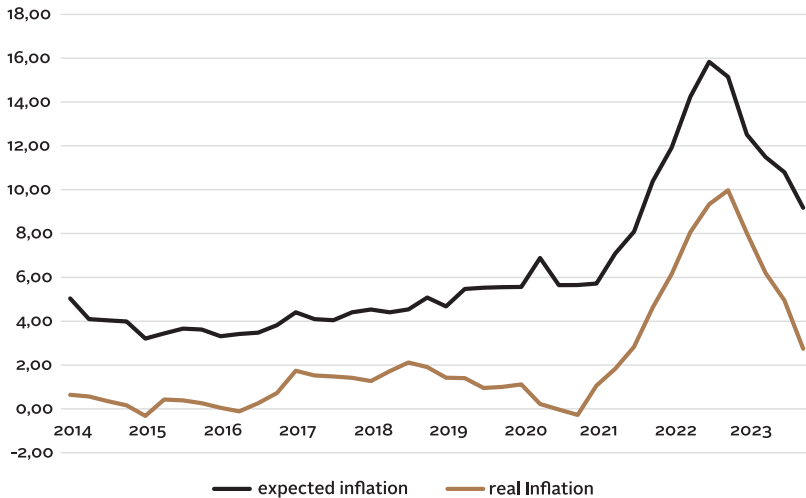
4. Expected and Real Inflation Rate – The Comparison of USA and Eurozone

In this section of the article, we present real data on expected inflation compared to actual inflation. We worked with data from the United States of America and the Eurozone.

Data on expected inflation in the Eurozone are provided by The Consumer Expectations Survey of the European Central Bank. We obtained data on real inflation in the Eurozone from the OECD database. Data on expected inflation in the USA were sourced from the Survey of Consumer Expectations, issued by the Federal Reserve System of the USA, and data on real inflation in the USA were drawn from the World Bank database. We tracked the period from the beginning of 2014 to the end of 2023.

Firstly, we provide data on expected and real inflation in the Eurozone.

Graph 1 – Expected vs. real Inflation Rate in Eurozone

Source: OECD Data Consumer price indices (CPIs, HICPs), The Consumer Expectations Survey – European Central Bank

The Graph 1 shows the fluctuations in expected and real inflation rates specifically within the Eurozone over the given period. The percentage values represent the anticipated and actual changes in the general price level as reported by The Consumer Expectations Survey of the European Central Bank and the OECD database.

Based on the data in the graph, we can observe several trends:
▸ Fluctuations in Expected and Actual Inflation: It can be seen that expected and real inflation in the Eurozone changed over the years. However, it is evident than expected and real inflation differed during the observed period, with

expected inflation consistently higher than real inflation throughout the entire monitoring period.

▸ Periods of Deflation: In 2015, actual inflation in the Eurozone was negative, indicating a period of mild deflation. Similarly, expected inflation was also low during this time.

▸ Significant Increase in Inflation in 2021 and 2022: During this period, there is a sudden surge in both real and expected inflation. The situation begins to stabilize only in the year 2023.

Next, we provide an overview of expected and real inflation in the United States of America.

Graph 2 – Expected vs. Real Inflation Rate in USA
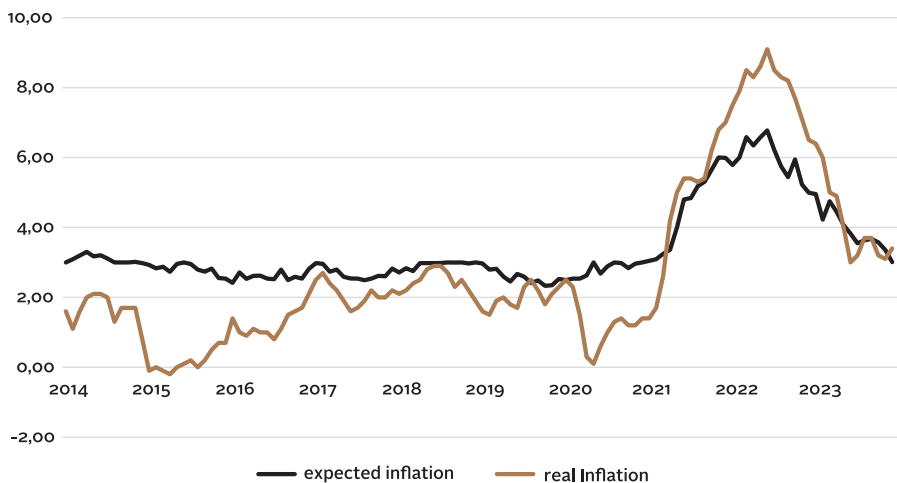
Source: Survey of Consumer Expectations of Federal Reserve System, The World Bank Database – Inflation rate, consumer prices

The development of expected and real inflation in the United States shows differences compared to the Eurozone, especially in that, while in the Eurozone expected inflation was consistently higher, this is not the case in the USA. For the USA, real inflation exceeded the expected rate in the years 2021 and 2022, and the reversal begins only in the course of 2023. Additionally, similar trends as in the Eurozone can be observed, such as the period of deflation in 2015, and a sharp increase in the years 2021 and 2022, followed by stabilization in 2023.

A possible explanation for the differences between expected and actual inflation rates in the Eurozone and the USA, particularly around 2021 when both regions saw a sharp rise in both real and expected inflation, is the differing economic structures with varying representation of individual sectors. This can lead to different reactions

to external shocks, such as increases in energy and raw material prices. Central bank responses may have also played a significant role. While the US Federal Reserve System was more proactive in raising interest rates compared to the more cautious European Central Bank, this could have moderated inflation expectations in the USA.

5. Conclusion

In conclusion, it can be stated that the article provides an overview of possible intersections between behavioural macroeconomics and the study of inflation. We believe that we have succeeded in offering valuable insights into the complexity of economic agents' expectations and their impact on decision-making processes and the potential consequences for shaping monetary policy.

In the introduction of the paper, we outlined fundamental facts about inflation expectations and their historical context within the theory of rational expectations, leading to the emergence of several behaviourally oriented models. These models have contributed to the development of a relatively new scientific discipline - behavioural macroeconomics - which holds potential in explaining certain economic regularities. Paradigm shifts were driven mainly by the failures of the Rational Expectations Hypothesis (REH) and the constraints associated with the assumptions of full pre-determination.

The examination of behavioural factors influencing inflation expectations and the perception of inflation was delineated in the context of Prospect Theory, money illusion, and availability heuristics. Prospect Theory, emphasizing the importance of reference points and loss aversion, provides a foundation for understanding how individuals perceive and react to changes in price levels. Money illusion, the tendency to consider nominal rather than real quantities, introduces distortions into economic decisions, influencing, for example, investment choices. Availability heuristics help to understand how individuals' judgments about inflation are influenced by easily memorable events, contributing to asymmetric perceptions of prices. The discussion also extends to the role of information frictions in the formation of household inflation expectations, emphasizing the impact of rational inattention and cognitive limitations. Experiments (for example Chatterjee, 2011; Darriet et al. ,2020) in these areas reveal that a low inflation environment weakens prior beliefs about the inflation rate, highlighting limited attention as an explanatory factor. Furthermore, cognitive limitations manifest, for instance, when individuals rely on less accurate sources, such as personal memories, even when real statistics on inflation trends are available.

Behavioural macroeconomics also intersects with considerations of monetary policy. The debate between Inflation Targeting (IT) and Price Level Targeting (PLT) gains prominence, especially in the context of the global financial crisis and periods of sharp inflation growth. Policymakers grapple with the challenges of the zero-lower bound, sparking discussions about adjusting the IT framework or adopting PLT as a potential solution. Behavioural perspectives on optimal monetary policy focus

on the fact that strict PLT may outperform other regimes in stabilizing economic dynamics within a monetary union. Empirical analysis of expected and real inflation rates in the Eurozone and the United States can provide further impetus to the ongoing scientific discourse. Differences in expected and actual inflation trajectories underscore the need to examine these trends, with the Eurozone consistently showing a higher expected inflation rate. Observations for specific periods, including deflation in 2015 and sharp inflation increases in 2021-2022, emphasize the influence of global economic factors on inflation trends.

Given these findings, it is crucial to emphasize the importance of understanding and addressing the short-sightedness of economic agents by central banks. The incorporation of psychological and cognitive biases becomes a necessity. The evolving nature of economic thinking requires continued examination and refinement of models that encompass the complexity of human behaviour, providing a more accurate representation of economic reality. ■

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