What Should We Expect?
An inflation expectations analysis

Research Project

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I. Introduction/Motivation

Inflation expectations have been a source of debate for ages, not only due to their importance in the monetary transmission mechanism but also due to their unclear formation process. Several economists have attempted to model it, but to date, there is still no consensus on how they are formed and what their impacts are. This is, undoubtedly, one of those topics that are crucial to be correctly understood for both economic theory and policymaking, particularly as central banks increasingly consider expectation management as a key instrument in current monetary policy. Therefore, given this 'puzzling' nature of such an important economic indicator, we will try to contribute to its literature by addressing already discussed facts and by exploring new variables that might help explain inflation expectations.

Firstly, inflation expectations exhibit substantial heterogeneity both across countries and across individuals in terms of their levels (Reiche, L., & Meyler, A., 2022). This means inflation expectations are formed at an individual level depending on each person's demographic, socioeconomic, and geographical background. In this research, we will try to confirm this idea and, based on the literature, search for possible explanations.

Moreover, a possible explanation for the cross-country heterogeneity in inflation expectations might be the difference in monetary policy strategies used by each country's Central Bank, such as Inflation Targeting (IT). One discussed benefit of IT is that it anchors long-run inflation expectations at or very close to the inflation target (Bernanke et al. 1999, Johnson 2002, Levin, Natalucci, and Piger 2004, Vega and Winkelried 2005, Gürkaynak, Levin, and Swanson 2006, Mishkin and Schmidt-Hebbel 2007, Gonçalves and Salles 2008). In this research, we will try to test how central banks actively influence expectations.

II. Literature Review

Macroeconomists have long recognized the central role played by expectations: nearly all economic decisions contain an intertemporal dimension such that contemporaneous choices depend on agents' perceptions about future economic outcomes. Therefore, how agents form those expectations should play a central role in macroeconomic dynamics and policy making. (Coibion, Gorodnichenko & Kamdar, 2018).

In fact, the expectations of agents are of integral importance in many macroeconomic models and have been emphasized as far back as Keynes' General Theory, where he provided a motivation for how and why expectations may affect macroeconomic variables. Over the years, economists have continued to incorporate expectations into their models and early attempts to model the expectation formation process yielded different alternatives. Take as an example the concept of adaptive expectations (expectations based on lagged experience), which provide the base for the Keynesian models of the 1960s that typically implied that policies could forever be used to achieve lower unemployment and higher output at the cost of higher inflation.

The stagflation experience of the 1970s, however, led many to conclude that a complete rethinking of macroeconomic models was needed. Rational expectations (expectations are model-consistent) brought a revolution, and Lucas was at the forefront of this task. He began with a paper in 1972 in which an island's model was proposed, where policy makers are unable to systematically exploit the Phillips curve relationship to control the real economy. The Phillips Curve summarizes a relationship between nominal (inflation) and real (unemployment/output) variables in the economy and is a central ingredient in macroeconomic models used by researchers and policymakers: in general, models with short-run trade-offs implied by the Phillips curve help generate monetary non-neutrality. Today, the workhorse expectation process assumed by

macroeconomists is that of full information rational expectations (FIRE). The Philips curve used is the New Keynesian Philips Curve (NKPC): similar to earlier versions of expectations-augmented Philip curves, the NKPC underscores the prominent role of inflation expectations in determining current inflation. However, for the past few decades, the increasing availability of detailed micro-level survey-based data on subjective expectations of individuals has revealed that expectations deviate from FIRE in systematic and quantitatively important ways, including forecast-error predictability and bias.

Inflation expectations are at the core of the theoretical monetary policy transmission channel. Firstly, they determine agents' actions today through the expected value of real interest: if agents anticipate that inflation will increase, they perceive the real interest rate to fall. As a result, consumers spend more and save less to optimize their consumption and investment in the long run. Secondly, they also play an important role in the wage and price-setting process and are thus an important determinant of future inflation. So, understanding the nature of economic agents' inflation expectations and how they are formed is crucial for monetary policymakers. (Draghi, 2015; Yellen, 2018).

There are several ways of measuring inflation expectations: they can be derived from financial market instruments, surveys (professional forecasters or households). Notwithstanding, there are also some 'puzzling' stylised facts in the literature regarding inflation expectations. (Reiche, L., & Meyler, A., 2022)

One suggestion is that consumers focus solely on the prices of frequently bought items (Brachinger, 2008; Georganas, Healy, & Li, 2014; D'Acunto, Malmendier, Ospina, & Weber, 2019). Another is that house prices have a more significant impact on the formation of inflation expectations (Döhring & Mordunu, 2007). Another one only finds correlation with food prices

(Abildgren and Kuchler, 2021). Lastly, seasonality (Abildgren & Kuchler, 2021) and behavioural considerations such as loss aversion (Huber, 2011; Armantier, et al., 2013; Stanislawska, 2019) can play a role. These behavioural patterns may be amplified by the use of the wording "price changes" as compared to "inflation" as the latter is seen as a general concept that people may be aware of from the news, hence it is relatively anchored to the real inflation rate. In contrast, "price changes" induce consumers to think about their daily experiences which as shown by Kahneman and Tversky (2013) is biased towards extreme events and ignores price decreases (Bruine de Bruin, et al., 2012).

Secondly, there is substantial heterogeneity both across countries and across individuals in terms of the levels of inflation expectations. Some of this heterogeneity is systematically correlated with socio-demographic characteristics: age, gender, education, and income. Jonung (1981) showed that in a dataset of Swedish consumers, women had higher perceptions (past), and younger respondents reported higher expectations (future). He argued that perceived rates are largely influenced by individual price calculations: since food prices have increased more than other goods, women reported higher numbers. He also argued that expectations are autoregressive: older respondents form their expectations when using insights of a whole lifetime, which makes them less perceptive to current rates. Some authors suggest that financial literacy is low for younger and less educated individuals (Lusardi & Mitchell, 2014). Finally, Del Giovane et al. (2009) and Ehrmann et al. (2017) observe that a better financial situation, positive purchasing attitudes, and positive expectations about the economy as a whole are also associated with lower expectations even when controlling for other sociodemographic factors.

Thirdly, there is an apparent negative correlation between inflation expectations and economic sentiment. Inflation is typically seen as negative and believed to be co-moving with other

negative variables such as unemployment (Kamdar, 2019). This creates the risk of precautionary savings associated with low growth. Coibion and Gorodnichenko (2020) argued that higher quantitative inflation expectations, triggered by publicly announced and emphasised targets, could lead to a bad economic outlook for households who adopt a supply-side narrative and engage in precautionary savings.

Inflation Targeting (IT) is a monetary policy strategy that has been gaining popularity around the world. Three main benefits, all interrelated, have been associated with IT. Firstly, it successfully lowers inflation and makes it less volatile (Bernanke et al. 1999, Johnson 2002, Levin, Natalucci, and Piger 2004, Vega and Winkelried 2005, Mishkin and Schmidt-Hebbel 2007, Gonçalves and Salles 2008). Secondly, it reduces the real costs of disinflation (Mishkin and Schmidt Hebbel 2007, Gonçalves and Salles 2008). Finally, it anchors long-run inflation expectations at or very close to the inflation target (Bernanke et al. 1999, Johnson 2002, Levin, Natalucci, and Piger 2004, Vega and Winkelried 2005, Gürkaynak, Levin, and Swanson 2006, Mishkin and Schmidt-Hebbel 2007, Gonçalves and Salles 2008).

The effect on inflation expectations is, in principle, straightforward, since a key aspect that separates IT from other sensible monetary policies is the public announcement of a numerical target, and the subsequent referral to it in central bank communications. In fact, it is possible that the impact of IT on inflation and on other macroeconomic variables may come through its effect on inflation expectations and on the expectations formation process: e.g., IT could coordinate expectations and, in this way, become the nominal anchor of the economy. By making inflation explicit, IT provides a focal point that may anchor inflation expectations. (Capistrán, C. & Ramos-Francia, M. (2010)). Gürkaynak, Levin, and Swanson (2006), using inflation expectations extracted from market instruments, provide evidence that expectations in Canada, the United Kingdom, and

Sweden, all IT countries, seem to be less sensitive to macroeconomic news than inflation expectations in the United States, a non-IT country.

IT may not only affect the level of inflation expectations but also the dispersion of these expectations across economic agents. Capistrán, C. & Ramos-Francia, M. (2010) found that the dispersion of long-run inflation expectations is smaller in targeting regimes after controlling for country-specific effects, time-specific effects, the level and the variance of inflation, disinflation periods, and global inflation.

The importance of this heterogeneity for macroeconomic analysis has been emphasized by several authors. Lucas (1973), Phelps (1970), Sims (2003), and Woodford (2002) show, using models of imperfect information, that the real costs of nominal movements in the economy may be related to the dispersion of inflation expectations. Mankiw and Reis (2002) use a model with sticky information and hence, with dispersion in inflation expectations, to obtain the observed delayed response of inflation to monetary policy shocks. More recently, Mankiw, Reis, and Wolfers (2004, p.2) go as far as suggesting that "disagreement [about inflation expectations] may be a key to macroeconomic dynamics". Lower dispersion of expectations may enhance the effectiveness of the expectations channel of monetary transmission.

III. Data and Methodology

In this project, we want to confirm the current relevance of the facts evidenced in the literature, namely, the effect of age, education, income, economic sentiment, and unemployment level on inflation expectations. We also look forward to identifying new relevant variables that might be helpful to better understand the complex formation process of inflation expectations. Finally, this analysis will be performed regarding both short-term (one year ahead) and long-term (three years

ahead), as well as both Europe and the United States, in order to establish a comparison between the four combinations of horizon-region and study any differences that may arise.

For that, we use microdata from the Consumer Expectations Survey of the European Central Bank and from the Survey of Consumer Expectations of the Federal Reserve Bank of New York. In both cases, our analysis is related to the period between January and July of 2024, as it was the most recent common time frame among both databases.

At a first stage, our models for the four scenarios include mainly sociodemographic variables and/or variables explored in the literature that are available in the two datasets. Then, we add other factors of potential interest, exclusive of each survey. Lastly, the final models are supported by all the statistically significant variables that can help to decipher the individuals' inflation expectations during the period of study.

Model 1: includes sociodemographic variables and/or variables explored in the literature

$$Expected\_Prices_{EU} = b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 Financial\_Knowledge + b_5 Employment + b_6 \text{Unemployment}^1 + b_7 \text{Financial\_Situation}$$

$$Expected\_Prices_{US} = b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 \text{Numeracy} + b_5 Employment + b_6 \text{Financial\_Situation}$$

[1] Despite their seemingly opposite names, "Employment" and "Unemployment" are both relevant variables as they capture distinct aspects of the labor market: the former reflects the respondent's personal employment status, while the latter measures its perception of the overall unemployment rate.

$$Long\_Expected\_Prices_{EU}$$

$$= b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 Financial\_Knowledge$$

$$+ \ b_5 Employment + \ b_6 \text{Unemployment} + b_7 \text{Financial\_Situation}$$

$$Long\_Expected\_Prices_{US}$$

$$= b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 \text{Numeracy}$$

$$+ \ b_5 Employment + b_6 \text{Financial\_Situation}$$

Model 2: added variables of potential interest

$$Expected\_Prices_{EU}$$

$$= b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 Financial\_Knowledge$$

$$+ \ b_5 Employment + \ b_6 \text{Unemployment} + b_7 \text{Financial\_Situation} + b_8 Gender$$

$$+ b_9 Household\_Size + b_{10} Past\_Prices + \ b_{11} Trust\_ECB + \ b_{12} \text{Trust\_NatCB}$$

$$Expected\_Prices_{US}$$

$$= b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 \text{Numeracy}$$

$$+ \ b_5 Employment + b_6 \text{Financial\_Situation} + b_7 \text{Expected\_Unemployment}$$

$$+ b_8 \text{Expected\_Interest\_Rate} + b_9 \text{Expected\_Stock\_Price}$$

$$+ b_{10} \text{Expected\_Spending} + \ b_{11} \text{Expected\_Taxation}$$

$$+ b_{12} \text{Expected\_Credit\_Access} + b_{13} Expected\_House\_Prices$$

$$+ \ b_{14} Expected\_Rents$$

$$Long\_Expected\_Prices_{EU}$$

$$= b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 Financial\_Knowledge$$

$$+ \ b_5 Employment + \ b_6 \text{Unemployment} + b_7 \text{Financial\_Situation} + b_8 Gender$$

$$+ b_9 Household\_Size + b_{10} Past\_Prices + \ b_{11} Trust\_ECB + \ b_{12} \text{Trust\_NatCB}$$

$$Long\_Expected\_Prices_{US}$$

$$= b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 \text{Numeracy}$$

$$+ \ b_5 Employment + b_6 \text{Financial\_Situation} + b_7 \text{Expected\_Unemployment}$$

$$+ b_8 \text{Expected\_Interest\_Rate} + b_9 \text{Expected\_Stock\_Price}$$

$$+ b_{10} \text{Expected\_Spending} + \ b_{11} \text{Expected\_Taxation}$$

$$+ b_{12} \text{Expected\_Credit\_Access} + b_{13} Expected\_House\_Prices$$

$$+ \ b_{14} Expected\_Rents$$

Final Model – supported by all the significant variables

$$Expected\_Prices_{EU}$$

$$= b_0 + b_1 Age + b_2 Income + b_4 Financial\_Knowledge + b_6 Unemployment$$

$$+ b_7 Financial\_Situation + b_9 Household\_Size + b_{10} Past\_Prices$$

$$+ \ b_{11} Trust\_ECB + \ b_{12} \text{Trust\_NatCB}$$

$$Expected\_Prices_{US}$$

$$= b_0 + b_1 Age + b_3 Education$$

$$+ b_4 \text{Numeracy} + b_6 \text{Financial\_Situation} + b_7 \text{Expected\_Unemployment}$$

$$+ b_9 \text{Expected\_Stock\_Price} + b_{10} \text{Expected\_Spending} + \ b_{11} \text{Expected\_Taxation}$$

$$+ b_{12} \text{Expected\_Credit\_Access} + b_{13} Expected\_House\_Prices$$

$$+ \ b_{14} Expected\_Rents$$

$$Long\_Expected\_Prices_{EU}$$

$$= b_0 + b_1 Age + b_2 Income + b_3 Education + b_4 Financial_{Knowledge}$$

$$+ b_6 \, Unemployment + \ b_7 Financial_{\text{Situation}} + b_{10} Past_{Prices} + \ b_{11} Trust\_ECB$$

$$+ \ b_{12} \text{Trust\_NatCB}$$

$$
\begin{aligned}
Long\_Expected\_Prices_{US} \\
&= b_0 + b_2 Income \\
&+ b_5 Employment + b_6 \text{Financial\_Situation} + b_7 \text{Expected\_Unemployment} \\
&+ b_8 \text{Expected\_Interest\_Rate} + b_9 \text{Expected\_Stock\_Price} \\
&+ b_{10} \text{Expected\_Spending} + b_{11} \text{Expected\_Taxation} \\
&+ b_{12} \text{Expected\_Credit\_Access} + b_{13} Expected\_House\_Prices \\
&+ b_{14} Expected\_Rents
\end{aligned}
$$

For the European component of our analysis, we utilized survey data collected from ten countries: Austria, Belgium, Germany, Greece, Spain, Finland, France, Ireland, Italy, the Netherlands and Portugal.

Several variables were recoded into binary (dummy) variables to facilitate statistical analysis. Age was coded as 0 for respondents aged 18 to 54, and as 1 for those aged 55 and above. Household income was dichotomized such that individuals falling within the lowest three quintiles of the monthly weighted income distribution (by wave) were coded as 0, and those in the top two quintiles were coded as 1. Gender was recoded with males assigned a value of 0 and females a value of 1. Employment status was treated similarly, with employed individuals coded as 0 and others as 1.

Educational attainment was classified using the International Standard Classification of Education (ISCED): individuals with primary, lower secondary, or upper secondary non-tertiary education (ISCED levels 1–4) were coded as 0, whereas those with tertiary education (ISCED levels 5–8) were assigned a value of 1. Trust in the European Central Bank (ECB) and the respective National Central Bank (NatCB) was measured on a scale from 0 to 10. This variable was recoded such that

responses from 0 to 5 were assigned a value of 0, indicating low trust, and responses from 6 to 10 were assigned a value of 1, indicating high trust.

Additional binary variables included financial knowledge, the respondent's financial situation, and household size. Individuals who self-assessed their financial knowledge as "non knowledgeable" to "more or less knowledgeable" were coded as 0, while those who reported their understanding of financial mechanisms were assigned a value of 1. With regard to financial situation, a value of 0 was given to those reporting their situation got worse or stayed equivalent in the last 12 months, and 1 to those reporting it as better. Household size was coded as 0 for households containing up to two members, and as 1 for households with more than two members.

Finally, the open-ended survey questions yielded additional variables such as the current perceived unemployment rate, general perceptions of past price trends and, obviously, the dependent ones of this study, expectations about price levels over the next 12 months and over the next three years. The entire process of variable creation for the European dataset is described in the Appendix: Table 1.

For the U.S. component of the analysis, six key demographic and socioeconomic variables were transformed into binary (dummy) variables to facilitate cross-sectional regression analysis and ensure comparability with European counterparts.

Age was categorized into three groups: individuals under 40, those between 40 and 60, and those over 60 years old. A binary variable was created (_AGE_CAT), taking the value of 0 for individuals under 60 (i.e., both "Under 40" and "40 to 60") and the value of 1 for individuals aged over 60. Numeracy skills were captured using a binary indicator (_NUM_CAT) that serves as a proxy for basic financial comprehension and decision-making capacity, where respondents assessed as

having low numeracy were assigned a value of 0, and those demonstrating high numeracy ability were coded as 1.

Educational attainment (_EDU_CAT) was grouped into three levels: “High School,” “Some College,” and “College.” Respondents who reported having completed only high school or some college were coded as 0, while those who attained a college degree were assigned a value of 1. This dichotomization allows the model to distinguish between tertiary-educated and non-tertiary-educated individuals, as was done with European data. Household income (_HH_INC_CAT) was grouped into three brackets: “Under $50.000,” “From $50.000 to $100.000,” and “Above $100.000.” Respondents in the lowest bracket were coded as 0, and those in either of the higher-income brackets were assigned a value of 1, capturing the distinction between lower-income and middle-to-high-income households.

Employment situation denoted 9 subgroups of different working status. Respondents who reported being “Working full-time” or “Working part-time” were coded as 1, while all other respondents were coded as 0. Financial Perception assessed each household’s financial situation perception (comparing the present with the same time one year earlier). Respondents who reported being “Much better off” or “Somewhat better off” were coded as 1, while all other respondents were coded as 0.

These dummy variables were incorporated into regression models explaining inflation expectations, allowing for the identification of demographic and cognitive patterns in expectation formation across different population subgroups.

Moreover, Expected Credit Access indicated the qualitative future expectations about the credit access (comparing the present with the same time one year later), going from “Much harder” for

respondents who answered 1 to “Much easier” for those who answered 5. The remaining variables came from open-ended questions, where the respondents were meant to answer a number for the expected change in the future of present macroeconomic indicators (compared with one-year-ahead indicators), such as the unemployment rate, interest rate, stock prices, household spending, taxation, house prices, and rents. The entire process of variable creation for the American dataset is described in the Appendix: Table 6.

IV. Results

Regarding the short-term in Europe, there are some results in line with the literature, while others bring some news to the table. On the one hand, it seems true that inflation is seen as a negative phenomenon and is believed to co-move with other negative variables like unemployment, measured in the European case by open-ended perceptions regarding its rate at the moment of the answer to the survey. Similarly, our analysis confirms that a better financial situation (over the past 12 months) is associated with lower expectations by the respondents (Appendix: Table 4).

On the other hand, unlike other studies, gender is not statistically significant in this case, as well as the employment status, which could exert some influence on expectations, but does not seem to do so. Moreover, older respondents or those who live in larger households report higher expectations, while individuals with higher income or financial knowledge seem to expect lower future values of inflation. Finally, another interesting insight provided by our analysis is that, as it is supposed, past inflation and trust in financial institutions, namely the European Central Bank and the national bank part of the Eurosystem, also play a role, in the sense that open-ended perceptions about lower past prices and higher confidence in these organizations both mean lower inflation expectations (Appendix: Table 4).

In what concerns the European long-term scenario, there are a couple of differences worth noting. Firstly, the education level, more specifically having a tertiary education, becomes statistically significant and is now associated with higher expectations. Secondly, the household size is no longer statistically significant at the common significance levels. Lastly, looking at the magnitude of coefficients, past prices, income, and financial knowledge seem to have a lower influence, whereas age, unemployment level, financial situation, and trust in financial institutions show a larger impact on the respondents' prospects of inflation (Appendix: Table 5).

Overall, in the long run, the variables included in the final models have a lower explanatory power than in the short run, but, in both cases, there might still be some important factors not covered by our study that can help explain the remaining variation in the inflation expectations submitted in the survey (Appendix: Table 5).

The results obtained about the United States present simultaneously similar and contrasting facts relative to the Old Continent. In terms of short-term expectations, for example, older people report lower values, something that is already in line with literature. However, also in this case, expectations co-move with other negative phenomena such as higher unemployment and lower credit access or stock prices. Moreover, a better expected financial situation is associated with lower expectations, while expected spending, taxation, house prices and rents have a positive relationship with inflation. It is also important to note that, in this final model, income and employment status are not statistically significant and that individuals with more education or numeracy appear to have lower expectations (Appendix: Table 8).

Concerning the long-run scenario, we can conclude that income, employment status and expected interest rate become statistically significant and are now associated with lower expectations.

Meanwhile, age, education and numeracy are no longer statistically significant. Inspecting the magnitude of coefficients, it is possible to infer that financial situation, expected unemployment, stock prices, spending, taxation, credit access, house prices and rents have lower influence on the formation of inflation prospects over a longer horizon (Appendix: Table 9).

V. Limitations

Despite the relevance and empirical richness of the present analysis, several limitations warrant caution in interpreting our findings.

Firstly, survey-based measures of inflation expectations provide a valuable yet imperfect glimpse into agents' subjective beliefs. Such indicators are vulnerable to measurement error and bias, as respondents may misinterpret questions or respond in ways that do not reflect true, informed forecasts. Studies have documented the volatility and overreaction typically observed in such surveys, underscoring their noisy nature and the potential for framing effects to distort aggregate metrics.

Secondly, the short period covered by our investigation constrains our ability to observe the full dynamics of expectation formation. Extending the period of analysis would allow us to assess the effects of macroeconomic shocks, communication strategies, and institutional changes more comprehensively, aligning empirical coverage more closely with real-world fluctuations.

Thirdly, structural differences between European and U.S. survey instruments, such as question wording, sampling methods, reference horizons, and administration formats, complicate direct comparison. These cross-country discrepancies introduce systematic noise that may partially account for observed regional divergences in expectations.

In sum, while our results present meaningful insights, future research should aim to harmonize survey instruments, lengthen observational windows, and integrate important factors such as econometric signal processing and cognitive biases. Such improvements would enhance model explanatory power and strengthen the robustness of inference regarding inflation expectation formation.

VI. Conclusion

Given the importance of inflation expectations in economic theory, our study was conducted having in mind possible contributions that we could provide to the debate about this central topic. We believe that its empirical results, even when accounting for the referred limitations, allow us to extract some insightful conclusions.

Regarding the additional predictors that we brought into discussion, central bank trust (Europe), as expected, seems an important factor to generate lower inflation expectations as this confidence in the work developed by the mentioned organizations results in a reduced anticipation-likelihood of an uncontrolled prices scenario. Therefore, we believe that conquering trust among citizens should continue to be one of the policy goals targeted by the daily operations of the Eurosystem members.

In the case of the macroeconomic indicators (United States), our study corroborates the previously identified association between the prediction of inflation and other several phenomena negatively perceived by individuals, including credit shortage, stock market fall and aggravated predictable spending and taxation. We see the verification of these synchronized fears as valuable to reinforce the importance of policymakers conducting the necessary intervention to address these bundled perceptions, for examples, through clear communication, expectation management, and supportive fiscal and financial measures to prevent unnecessary economic pessimism.

While sociodemographic variables, including those already mentioned in the literature, and additional predictors that we brought into discussion, such as central bank trust (Europe) and macroeconomic indicators (United States), are statistically significant, they explain only a small fraction of the variance in inflation expectations. Around 75% of the variation remains unexplained, consistent with survey-based regressions on expectations that are heavily influenced by recent events and exhibit substantial noise.

Moreover, in the longer term, the variables we examined appear to exert diminishing influence on expectations, suggesting that deeper, unmeasured factors (such as cognitive heuristics or behavioral biases) are at play.

Finally, regional differences constrain the comparability of our findings. European surveys include the measurement of past inflation perceptions, improving explanatory performance, whereas the absence of similar measures in U.S. surveys results in weaker model fits. These disparities underscore the importance of temporal and contextual variables in shaping expectations.

Future research should therefore extend the temporal scope, standardize survey instruments across regions, and incorporate additional explanatory factors, such as media exposure and behavioral variables, to explanatory power and enhance understanding of inflation expectation dynamics.

VII. Appendix

Original Variable	Defined Variable
c1120 Expectation for prices in general next 12 months - open-ended	Expected_Prices Expectation for prices in general next 12 months - open-ended
c1220 Expectation for prices in general 3 years ahead - open-ended	Long_Expected_Prices Expectation for prices in general 3 years ahead - open-ended
c1020 Past prices in general - open-ended	Past_Prices Past prices in general - open-ended
a0010	Respondent_ID
a0020 AT – Austria, BE – Belgium, DE – Germany, EL – Greece, ES – Spain, FI – Finland, FR – France, IE – Ireland, IT – Italy, NL – Netherlands, PT – Portugal	Country AT – Austria, BE – Belgium, DE – Germany, EL – Greece, ES – Spain, FI – Finland, FR – France, IE – Ireland, IT – Italy, NL – Netherlands, PT – Portugal
a0030	Survey_Round
a1010_age_prec Age at the start of the year, recorded:	Age 0 if 1 or 2; 1 if 3 or 4

1 – 18-34, 2 – 35-54, 3 – 55-70, 4 – 71+	
b7040_quintile Household disposable income quintiles on monthly weighted distribution by wave 1 – HH disposable income 1st quintile on monthly weighted distribution by wave 2 – HH disposable income 2nd quintile on monthly weighted distribution by wave 3 – HH disposable income 3rd quintile on monthly weighted distribution by wave 4 – HH disposable income 4th quintile on monthly weighted distribution by wave 5 – HH disposable income 5th quintile on monthly weighted distribution by wave	Income 0 if 1, 2 or 3; 1 if 4 or 5
c3010 Own financial situation - past 12 months 1 – Much worse off, 2 – Somewhat worse off, 3 – About the same, 4 – Somewhat better off, 5 – Much better off	Financial_Situation 0 if 1, 2 or 3; 1 if 4 or 5
c4030	Unemployment

Current unemployment rate - open-ended	
c8011_1 Trust in institutions - The European Central Bank 0 – No trust at all, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 – Complete trust	Trust_ECB 0 if 0-5, 1 if 6-10
c8011_5 Trust in institutions - National Central Bank 0 – No trust at all, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 – Complete trust	Trust_NatCB 0 if 0-5, 1 if 6-10
a1020_prec Gender 1 – Male, 2 – Female	Gender 0 if 1; 1 if 2
b1000_prec Household size (top-coded at 5) 1 – 1 household member, 2 – 2 household members, 3 – 3 household members, 4 – 4 household members, 5 – 5+ household members	Household_Size 0 if 1 or 2; 1 if 3-5
b2100_prec	Education

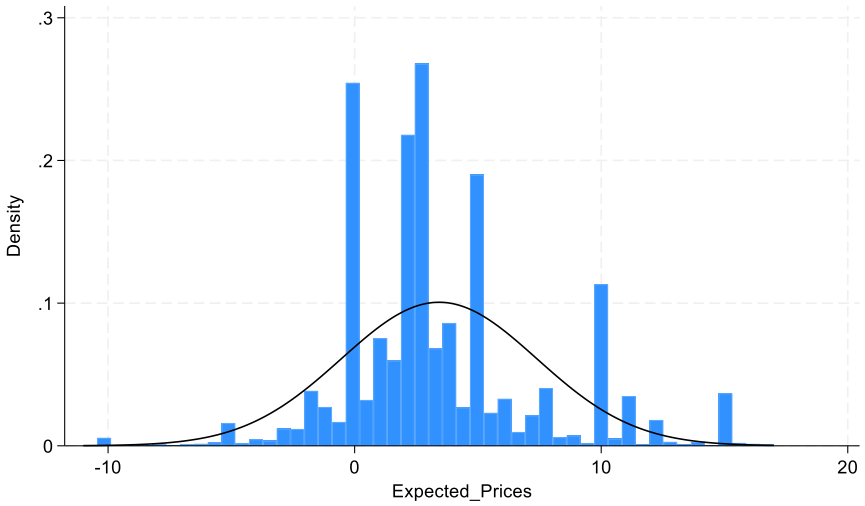
Education ISCED (recoded to low/middle/high) 1 – ISCED 1-2. Primary or lower secondary education, 2 – ISCED 3-4. Upper secondary, non-tertiary education, 3 – ISCED 5-8. Tertiary education	0 if 1 or 2; 1 if 3
b5010 Financial knowledge: self-assessment 1 – Not knowledgeable, 2 – More or less knowledgeable, 3 – Knowledgeable, 4 – Very knowledgeable	Financial_Knowledge 0 if 1 or 2; 1 if 3 or 4
emp_status_b Employment situation (recoded) 1 – employed, 2 – unemployed, 3 – retired, 4 – other status	Employment 0 if 1; 1 others

Table 1 – Variables extracted from Europe's dataset

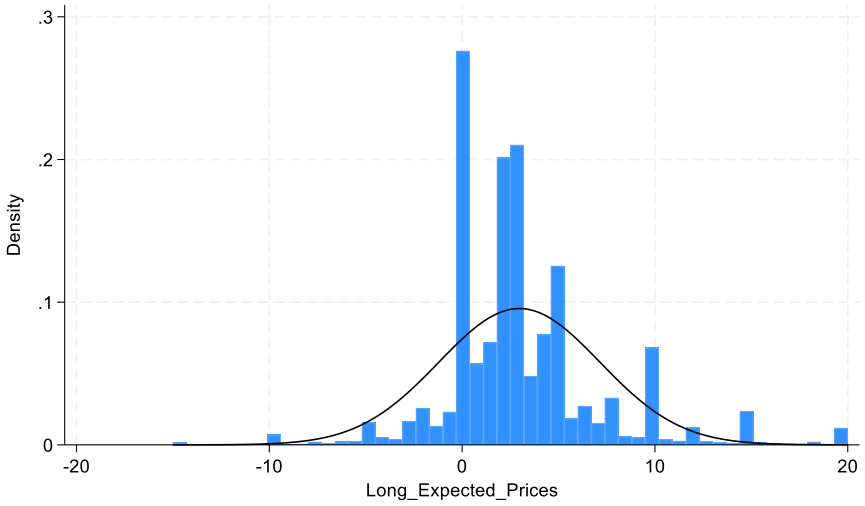
Variable	N	Mean	Sd	Min	Max
Expected_Prices	123 532	3.42	3.97	-11	17
Long_Expected_Prices	123 532	2.97	4.18	-15	20

Age	123 532	0.37	0.48	0	1
Income	123 532	0.44	0.50	0	1
Education	123 532	0.58	0.49	0	1
Financial_Knowledge	123 532	0.49	0.50	0	1
Employment	123 532	0.32	0.47	0	1
Unemployment	123 532	9.02	5.71	0	31.1
Financial_Situation	123 532	0.16	0.36	0	1
Gender	123 532	0.46	0.50	0	1
Household_Size	123 532	0.47	0.50	0	1
Past_Prices	123 532	6.32	6.44	-20	32.5
Trust_ECB	123 532	0.54	0.50	0	1
Trust_NatCB	123 532	0.59	0.49	0	1

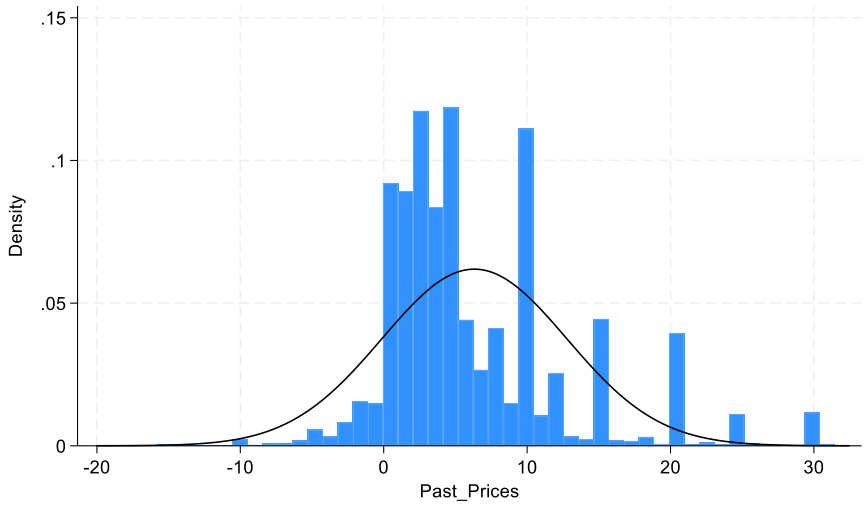
Table 2 – Descriptive Analysis of Europe's dataset



Graph 1 – Relative frequency distribution of Short-term Expectations in Europe



Graph 2 – Relative frequency distribution of Long-term Expectations in Europe



Graph 3 – Relative frequency distribution of Past Price Perceptions in Europe

	Expect~s	Long_E~s	Age	Income	Educat~n	Financ~e	Employ~t	Unempl~t	Financ~n	Gender	Househ~e	Past_P~s	Trus~ECB	Trus~tCB
Expected_P~s	1.0000													
Long_Expec~s	0.5382	1.0000												
Age	0.0267	0.0408	1.0000											
Income	-0.0399	-0.0265	-0.0070	1.0000										
Education	-0.0240	-0.0045	-0.1143	0.2223	1.0000									
Financial_~e	-0.0658	-0.0461	-0.0276	0.1519	0.1506	1.0000								
Employment	0.0243	0.0223	0.3978	-0.1829	-0.1867	-0.0965	1.0000							
Unemployment	0.1301	0.1663	-0.0587	-0.0309	0.0010	-0.0641	-0.0085	1.0000						
Financial_~n	-0.0428	-0.0721	-0.0801	0.0541	0.0280	0.0544	-0.0664	-0.0400	1.0000					
Gender	0.0394	0.0386	-0.0666	-0.0881	-0.0075	-0.1394	0.0404	0.0827	-0.0368	1.0000				
Household_~e	0.0110	-0.0063	-0.3239	0.2146	0.0629	0.0374	-0.2286	0.0646	0.0219	-0.0058	1.0000			
Past_Prices	0.5254	0.3490	0.0032	-0.0201	-0.0185	-0.0705	0.0118	0.2240	-0.0502	0.0723	0.0285	1.0000		
Trust_ECB	-0.1003	-0.1203	0.0255	0.0794	0.0674	0.0979	0.0064	-0.1159	0.0905	-0.0396	0.0132	-0.1153	1.0000	
Trust_NatCB	-0.0982	-0.1314	0.0614	0.0892	0.0468	0.1006	0.0210	-0.1418	0.0913	-0.0516	-0.0025	-0.1161	0.7102	1.0000

Table 3 – Correlation Table of Europe's dataset

Variable	Model 1	Model 2	Final Model
Age	0.236*** (0.025)	0.228*** (0.023)	0.242*** (0.021)
Income	-0.197*** (0.024)	-0.194*** (0.021)	-0.197*** (0.020)
Education	-0.053** (0.024)	-0.002 (0.020)	

Financial_Knowledge	-0.399*** (0.023)	-0.163*** (0.020)	-0.161*** (0.020)
Employment	0.011 (0.027)	0.031 (0.023)	
Unemployment	0.088*** (0.002)	0.006*** (0.002)	0.005*** (0.002)
Financial_Situation	-0.340*** (0.031)	-0.091*** (0.027)	-0.091*** (0.027)
Gender		-0.031 (0.020)	
Household_Size		0.096*** (0.021)	0.094*** (0.021)
Past_Prices		0.318*** (0.002)	0.318*** (0.002)
Trust_ECB		-0.192*** (0.027)	-0.192*** (0.027)
Trust_NatCB		-0.137*** (0.028)	-0.136*** (0.028)
Constant	2.909*** (0.031)	1.609*** (0.034)	1.600*** (0.030)
Observations	123 532	123 532	123 532
R^2	0.023	0.280	0.280
Adjusted R^2	0.023	0.280	0.280
Residual Std. Error	3.9194	3.3651	3.3651
F Statistic	416.27*** (df = 7; 123 524)	4000.55*** (df = 12; 123 519)	5333.55*** (df = 9; 123 522)

Table 4 – OLS Models Results for Short-term Expectations in Europe

Variable	Model 1	Model 2	Final Model
Age	0.406***	0.406***	0.410***

	(0.026)	(0.026)	(0.023)
Income	-0.135*** (0.025)	-0.075*** (0.024)	-0.083*** (0.023)
Education	0.084*** (0.025)	0.132*** (0.023)	0.134*** (0.023)
Financial_Knowledge	-0.254*** (0.024)	-0.053** (0.023)	-0.058** (0.023)
Employment	-0.027 (0.028)	-0.009 (0.027)	
Unemployment	0.120*** (0.002)	0.061*** (0.002)	0.061*** (0.002)
Financial_Situation	-0.686*** (0.032)	-0.464*** (0.031)	-0.465*** (0.031)
Gender		0.038* (0.023)	
Household_Size		-0.028 (0.024)	
Past_Prices		0.206*** (0.002)	0.206*** (0.002)
Trust_ECB		-0.230*** (0.032)	-0.230*** (0.032)
Trust_NatCB		-0.524*** (0.032)	-0.524*** (0.032)
Constant	1.987*** (0.033)	1.457*** (0.039)	1.461*** (0.034)
Observations	123 532	123 532	123 532
R^2	0.035	0.141	0.141
Adjusted R^2	0.035	0.141	0.141
Residual Std. Error	4.1021	3.8699	3.8699
F Statistic	644.82*** (df = 7; 123 524)	1695.80*** (df = 12; 123 519)	2260.56*** (df = 9; 123 522)

Table 5 – OLS Models Results for Long-term Expectations in Europe

Original Variable	Defined Variable
_AGE_CAT Under 40, 40 to 60, Over 60	Age 0 if Under 40 or 40 to 60, 1 if Over 60
_NUM_CAT Low, High	Numeracy 0 if Low, 1 if High
_EDU_CAT High School, Some College, College	Education 0 if High School or Some College; 1 if College
_HH_INC_CAT Under 50k, From 50k to 100k, Above 100k	Income 0 if Under 50k, 1 if From 50k to 100k or Above 100k
Q10 Current Employment Status (1) – Working full-time (for someone or self-employed) (2) – Working part-time (for someone or self-empoyed) (3) – Not working, but would like to work (4) – Temporarily laid off (5) - On sick or other leave	Employment 1 if (1) or (2), 0 if others

(6) – Permanently disable or unable to work (7) – Retiree or early retiree (8) – Student, at school or in training (9) – Homemaker (10) – Other (please specify)	
Q1 Financial Perception (now vs. 1 year earlier) (1) – Much worse off (2) – Somewhat worse off (3) – About the same (4) – Somewhat better off (5) – Much better off	Financial_Situation 0 if (1), (2), or (3); 1 if (4) or (5)
Q4new Unemployment Rate Change Expectation over the next year- open-ended	Expected_Unemployment Unemployment Rate Change Expectation over the next year- open-ended
Q5new Interest Rate Change Expectation over the next year- open-ended	Expectated_Interest_Rate Interest Rate Change Expectation over the next year- open-ended
Q6new	Expected_Stock Prices

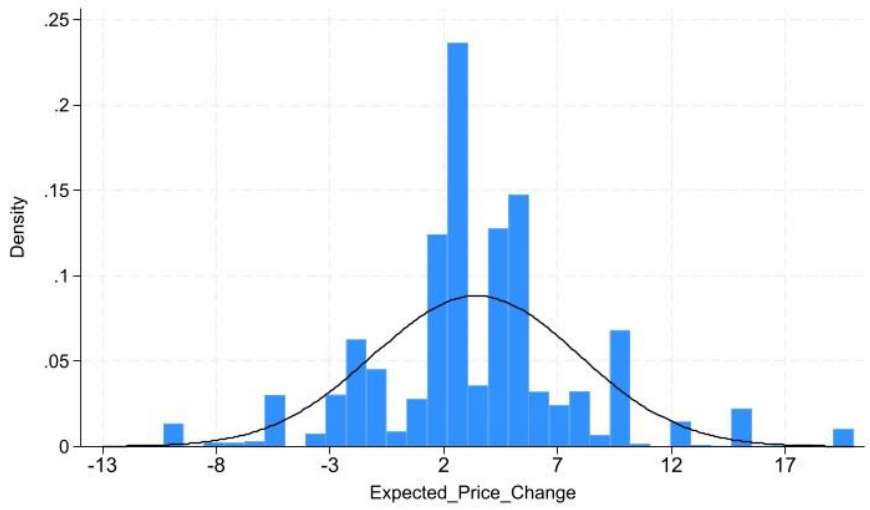
Stock Prices Change Expectation over the next year- open-ended	Stock Prices Change Expectation over the next year- open-ended
Q26v2part2 Household Spending Change Expectation over the next year- open-ended	Expected_Spending Household Spending Change Expectation over the next year- open-ended
Q27v2part2 Taxation Change Expectation over the next year- open-ended	Expected_Taxation Taxation Change Expectation over the next year- open-ended
Q29 Expected Credit Access Evolution over the next year (1) - Much harder (2) – Somewhat harder (3) – Equally easy/hard (4) - Somewhat easier (5) - Much easier	Expected_Credit Expected Credit Access Evolution over the next year (1) - Much harder (2) – Somewhat harder (3) – Equally easy/hard (4) - Somewhat easier (5) - Much easier
Q31v2part2 House Prices Expected Change over the next year- open-ended	Expected_House_Prices House Prices Expected Change over the next year- open-ended
C4_5	Expected_Rents

Rents Expected Change over the next year-open-ended	Rents Expected Change over the next year-open-ended

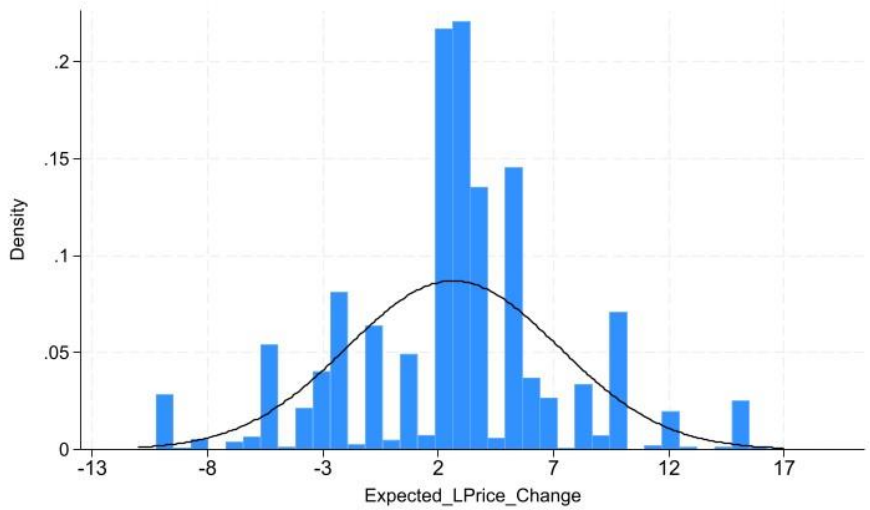
Table 6 – Variables extracted from the United States' dataset

Variable	N	Mean	Sd	Min	Max
Expected_Prices	5900	3.43	4.52	-13	20
Expected_LPrices	5900	2.64	4.59	-11	17
Age	5900	0.25	0.43	0	1
Income	5900	0.45	0.50	0	1
Education	5900	0.64	0.48	0	1
Numeracy	5900	0.75	0.43	0	1
Employment	5900	0.72	0.45	0	1
Financial_Situation	5900	0.28	0.45	0	1
Expect_Unemployment	5900	38.16	22.83	0	100
Expected_Interest_Rate	5900	26.06	20.02	0	100
Expected_Stock_Prices	5900	42.83	23.53	0	100
Expected_Spending	5900	5.24	7.28	-20	33
Expected_Taxation	5900	3.73	3.43	-7	14
Expected_Credit_Access	5900	2.72	0.80	1	5
Expected_House_Prices	5897	4.02	8.50	-100	200
Expected_Rents	5305	7.61	9.89	-40	220

Table 7 – Descriptive Analysis of the United States' dataset



Graph 4 – Relative frequency distribution of Short-term Expectations in the United States



Graph 5 – Relative frequency distribution of Long-term Expectations in the United States

Variable	Model 1	Model 2	Final Model
Age	-0.484*** (0.160)	-0.451*** (0.155)	-0.323** (0.130)
Income	-0.477*** (0.136)	-0.138 (0.119)	

Education	-0.644*** (0.125)	-0.540*** (0.121)	-0.572*** (0.119)
Numeracy	-0.472*** (0.136)	-0.357*** (0.136)	-0.379*** (0.134)
Employment	0.012 (0.153)	-0.159 (0.149)	
Financial_Situation	-1.518*** (0.130)	-0.865*** (0.126)	-0.876*** (0.125)
Expected_Unemployment		0.034*** (0.003)	0.032*** (0.003)
Expected_Interest_Rate		-0.004 (0.003)	
Expected_Stock_Price		-0.015*** (0.003)	-0.017*** (0.003)
Expected_Spending		0.059*** (0.008)	0.060*** (0.008)
Expected_Taxation		0.187*** (0.017)	0.186*** (0.169)
Expected_Credit_Access		-0.400*** (0.072)	-0.400*** (0.072)
Expceted_House_Prices		0.084*** (0.007)	0.084*** (0.007)
Expected_Rents		0.057*** (0.006)	0.057*** (0.006)
Constant	5.060*** (0.180)	3.322*** (0.280)	3.141*** (0.258)
Observations	6 613	5 302	5 302
R^2	0.0352	0.204	0.203
Adjusted R^2	0.0343	0.202	0.201
Residual Std. Error	4.44	3.943	3.944
F Statistic	40.19*** (df=6; 6 606)	96.53*** (df=14; 5 287)	122.4*** (df=11; 5 290)

Table 8 – OLS Models Results for Short-term Expectations in the United States

Variable	Model 1	Model 2	Final Model
Age	-0.223 (0.163)	-0.221 (0.166)	
Income	-0.556*** (0.126)	0.351*** (0.127)	-0.403*** (0.122)
Education	-0.338*** (0.128)	-0.229* (0.129)	
Numeracy	-0.274** (0.138)	-0.173 (0.145)	
Employment	-0.157 (0.156)	-0.410** (0.159)	-0.320** (0.135)
Financial_Situation	-0.821*** (0.32)	-0.317** (0.134)	-0.312** (0.134)
Expected_Unemployment		0.024*** (0.003)	0.024*** (0.003)
Expected_Interest_Rate		-0.008** (0.003)	-0.007** (0.003)
Expected_Stock_Price		-0.007** (0.003)	-0.009*** (0.003)
Expected_Spending		0.041*** (0.009)	0.041*** (0.009)
Expected_Taxation		0.138*** (0.018)	0.138*** (0.018)
Expected_Credit_Access		-0.228*** (0.77)	-0.243*** (0.077)
Expceted_House_Prices		0.083*** (0.008)	0.083*** (0.008)
Expected_Rents		0.044*** (0.006)	0.044*** (0.006)
Constant	3.736*** (0.183)	2.343*** (0.299)	2.097*** (0.272)
Observations	6 613	5 302	5 302
R^2	0.015	0.115	0.114

Adjusted R^2	0.014	0.113	0.112
Residual Std. Error	4.561	4.222	4.222
F Statistic	16.34*** (df=6; 6 606)	49.08*** (df=14; 5 287)	61.83*** (df=11; 5 290)

Table 9 – OLS Models Results for Long-term Expectations in the United States

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