

Belief Distortions in Household Expectations: Implications for Labor Market Dynamics and Monetary Policy*

Tyler Sotomayor
Columbia University

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Abstract

This research investigates the co-movement between household inflation and unemployment expectations, a stylized fact that contradicts conventional macroeconomic theory and may reflect systematic belief distortions. Drawing on data from the University of Michigan Survey of Consumers (MSC) and the New York Fed Survey of Consumer Expectations (SCE), I test whether households interpret inflation as a signal of future labor market weakness, and whether this misperception varies across regimes or in response to monetary and trade shocks. Building on Kamdar (2019), I propose a set of extensions that introduce panel structure, state dependence, exogenous shocks, and belief heterogeneity into the analysis. I also consider the implications for perceived bargaining power, reservation wages, and the design of optimal policy under distorted expectations.

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*I am currently a junior undergraduate at Columbia University. Email: tyler.sotomayor@columbia.edu. This is a work-in-progress research proposal. I am grateful to Hriday Karnani (hk3384@columbia.edu) and Andrea Scalenghe (as7596@columbia.edu) for valuable early feedback. I also thank Professor Giovanni Caggiano (University of Padua, giovanni.caggiano@unipd.it) for his support. This project has been accepted for presentation at the 2025 PREDOC Research Conference, hosted by the University of Chicago in Washington, D.C., July 31–August 1, 2025.

1 Introduction

This document outlines a set of evolving research questions at the intersection of inflation expectations, unemployment expectations, consumer sentiment, labor market slack, and perceived bargaining power. These notes are intended to guide discussions with my advisor and help narrow down a focused and feasible research agenda. The ideas are informed by recent empirical literature on expectation formation and the transmission of beliefs to real outcomes in the labor market (D’Acunto et al., 2023; Manski, 2023; Milani, 2023; Weber et al., 2022).

A growing body of literature has questioned the assumption that households form expectations in line with full-information rational expectations (FIRE). Survey evidence consistently reveals patterns of inattentiveness, bias, and systematic deviations from model-consistent forecasting (Binder & Kamdar, 2022; Burke & Ozdagli, 2021; Candia et al., 2023). A particularly striking finding comes from Kamdar (2019), who documents that when households expect unemployment to rise, they simultaneously revise their inflation expectations upward—contrary to the standard Phillips curve logic, which would suggest downward pressure on inflation in the face of weaker labor demand. This empirical puzzle not only raises questions about the validity of representative agent models, but also about the channels through which beliefs are formed and transmitted in the macroeconomy.

My research aims to build on this puzzle by investigating the dynamic and potentially non-linear relationship between unemployment and inflation expectations, using microdata from both the University of Michigan Survey of Consumers (MSC) and the New York Fed Survey of Consumer Expectations (SCE) (Aidala et al., 2024; Binder et al., 2024; Bruine de Bruin et al., 2023). I begin by replicating Kamdar’s baseline correlation analysis and cross-sectional regressions with more recent data, before extending the analysis to explore time variation, regime dependence, and the role of exogenous shocks (Adams & Barrett, 2024; Born et al., 2025).

Specifically, I ask:

- How does this belief co-movement evolve during crisis periods or under high uncertainty?
- What role do monetary policy surprises—especially forward guidance shocks—play in shaping this relationship?
- To what extent are belief distortions amplified or attenuated in the presence of macro-financial volatility?

This research is motivated by two broader concerns. First, if households systematically misinterpret inflationary episodes as signs of labor market deterioration (or vice versa), then their behavior may generate self-fulfilling feedback loops that complicate the conduct of stabilization policy (Goodspeed, 2024; Mui, 2021). Second, if this belief formation process varies by income, education, or other demographic characteristics, then monetary policy may have heterogeneous effects that go unnoticed in aggregate models (Heinicke et al., 2025; Medina et al., 2024). By unpacking the joint dynamics of inflation and unemployment expectations—and by tracing how they respond to monetary, financial, and trade shocks—this project seeks to make both an empirical and theoretical contribution to the behavioral macroeconomics literature.

2 Preliminary Data Analysis and Findings

To ground the proposed research in empirical reality, I begin by replicating and extending Kamdar (2019)’s central finding: that changes in household inflation expectations are positively correlated with changes in unemployment expectations. Using data from the University of Michigan Survey of Consumers (MSC), I estimate a series of cross-sectional

regressions where the dependent variable is the respondent’s 12-month ahead inflation expectation ($E_{j,t}\pi_{t+12}$). The key explanatory variables are dummies for whether the respondent expects “more” or “less” unemployment over the next year (Binder & Kamdar, 2022; Binder et al., 2024).

As reported in Table 1, there is a strong and statistically significant positive association between expectations of rising unemployment and higher expected inflation. Conversely, respondents expecting less unemployment tend to report lower inflation expectations. These patterns persist across specifications with and without time fixed effects, respondent fixed effects, and minimum response thresholds, suggesting a robust and persistent co-movement between inflation and unemployment expectations (Bruine de Bruin et al., 2023; Burke & Ozdagli, 2021; Candia et al., 2023).

Table 1: Inflation Expectations and Unemployment Expectations (MSC)				
Dependent variable: $E_{j,t}\pi_{t+12}$	(1)	(2)	(3)	(4)
More unemployment	1.937*** (0.030)	1.340*** (0.028)	1.253*** (0.030)	0.441*** (0.044)
Less unemployment	-0.202*** (0.032)	-0.206*** (0.031)	-0.346*** (0.032)	-0.149*** (0.047)
Time FE	N	Y	Y	Y
Consumer FE	N	N	N	Y
Min. Surveys	None	None	> 1	> 1
R^2	0.019	0.116	0.097	0.270
Observations	249,482	249,482	175,123	175,123

Notes: Data are from the MSC. Estimates are from OLS regressions of 12-month ahead inflation expectations on dummies for expected unemployment changes. Robust standard errors clustered at the respondent level are in parentheses. The omitted category is “no change” in unemployment expectations. *** $p < 0.01$.

To assess the robustness of this co-movement and better account for individual-level heterogeneity, I turn to panel data from the New York Fed’s Survey of Consumer Expectations (SCE). Table 2 presents results from regressions where the dependent variable is the respondent’s subjective probability that unemployment will rise over the next 12 months, and the key independent variable is their inflation expectation over the same horizon.

The results confirm a statistically significant and positive association between inflation expectations and the perceived probability of rising unemployment. This relationship remains robust to the inclusion of time and respondent fixed effects, although the coefficient magnitude decreases slightly in the most controlled specification.

Table 2: Effect of Inflation Expectations on the Perceived Probability of Rising Unemployment (SCE)

Dependent variable: $E_{j,t}[\Delta \text{Unemp}_{t+12} > 0]$	(1)	(2)	(3)	(4)
Inflation expectations (<i>Q9_mean</i>)	1.004*** (0.043)	1.051*** (0.044)	1.045*** (0.044)	0.538*** (0.037)
Time Fixed Effects	N	Y	Y	Y
Consumer Fixed Effects	N	N	N	Y
Min. Surveys	N/A	N/A	>1	>1
R^2	0.0126	0.0126	0.0124	0.0098
Observations	135,032	135,032	132,495	132,495

Notes: Panel regressions using data from the New York Fed Survey of Consumer Expectations (SCE). The dependent variable is the subjective probability that unemployment will rise in 12 months. The key regressor is the respondent's inflation expectation over the same horizon. Clustered standard errors at the respondent level are shown in parentheses. *** $p < 0.01$.

Together, these findings reinforce the empirical puzzle raised in Kamdar (2019): in contrast to the predictions of the standard Phillips curve, households appear to perceive inflation and unemployment as positively correlated, at least in expectation. This stylized fact lays the foundation for the broader research agenda developed in subsequent sections.

3 Research Questions and Directions

Building on the empirical patterns discussed above, my research aims to explore the mechanisms driving the co-movement of inflation and unemployment expectations and the broader macroeconomic implications of belief distortions. I identify four interrelated research directions, each posing distinct but complementary questions that span micro-level heterogeneity, macroeconomic shocks, labor market perceptions, and structural policy design.

3.1 Core Expectation Dynamics: State Dependence and Nonlinearity

A central question motivating this research is whether the observed co-movement between inflation and unemployment expectations is stable across time or varies with macroeconomic conditions. Specifically:

- Is the inflation–unemployment expectation co-movement state-dependent—i.e., does it strengthen during recessions, high-inflation regimes, or periods of heightened financial stress?
- Are there nonlinearities, such that belief distortions (e.g., perceiving stagflation) become more salient at extreme values of inflation or macro uncertainty?

This analysis will leverage time-varying coefficients and interaction terms (e.g., with the VIX or crisis dummies) to test whether expectations respond differently under stress, building on recent evidence that expectation formation is context-sensitive and exhibits regime dependence (Born et al., 2025; Manski, 2023).

3.2 Expectation Heterogeneity

Even when macroeconomic conditions are held constant, not all households perceive inflation and unemployment the same way. This line of inquiry focuses on:

- How do demographic factors—such as income, education, age, and employment status—mediate the strength, direction, or coherence of inflation and unemployment expectations?
- Does heterogeneity in beliefs imply heterogeneity in behavioral responses, such as consumption or labor market actions?

These questions extend prior work on heterogeneous inflation expectations (Burke & Ozdagli, 2021; Heinicke et al., 2025) and suggest that aggregate models may obscure important subgroup dynamics that are policy-relevant.

3.3 Shock Response and Policy Transmission

Another dimension of the research will examine how various macroeconomic shocks affect the joint evolution of inflation and unemployment expectations. In particular:

- How do monetary policy shocks—especially forward guidance surprises—alter the belief relationship between inflation and unemployment?
- Do Odyssean (commitment-based) vs. Delphic (information-based) guidance shocks generate different expectation dynamics?
- Do other shocks—e.g., trade disruptions, energy price shocks, or geopolitical tensions—induce asymmetric or nonlinear co-movements?

This project will employ local projection-IV or Proxy SVAR techniques to estimate the impulse responses of beliefs to identified shocks, building on recent methodological advances in monetary transmission under expectation frictions.

3.4 Belief-Driven Slack and Bargaining Power

Expectations not only forecast economic outcomes; they shape how agents interpret their environment. When workers simultaneously expect rising inflation and rising unemployment ($\uparrow E[\pi]$, $\uparrow E[u]$), they may perceive the labor market to be weakening—even when slack is objectively limited. This belief distortion can suppress wage demands or delay job switching. I ask:

- How does the co-movement of inflation and unemployment expectations influence perceived labor market slack and worker bargaining behavior?
- Can we identify “belief-based slack” regimes—periods where workers internalize labor market weakness that is not reflected in actual indicators?
- Are there asymmetric periods (e.g., $\uparrow E[\pi]$, $\downarrow E[u]$) where belief decoupling leads to greater wage pressure or voluntary turnover?
- Can we quantify the gap between subjective and objective slack, and trace its effect on wage growth and firm-side behavior?

This builds on behavioral labor macroeconomics and may help explain recent wage patterns that deviate from standard Phillips curve predictions (Ellison & Macaulay, 2021; Medina et al., 2024).

3.5 Implications for Theory and Structural Modeling

Lastly, these findings raise important implications for macroeconomic modeling and policy design. Standard New Keynesian frameworks typically abstract from micro-level belief distortions and labor market microstructure. This project will:

- Propose a tractable extension of the NK model in which unemployment enters only as a perceived variable; labor market slack is shaped by belief dynamics rather than endogenous matching.
- Formulate a planner or central bank problem where the objective is to minimize a loss function subject to the IS and Phillips curves *with belief-distorted expectations*, constrained by limited attention or information-processing frictions.

- Derive modified targeting rules for inflation and unemployment expectations, or for the joint distribution of beliefs, providing guidance on how monetary policy should respond under informational frictions.

In doing so, this direction aims to contribute not only empirical insights but also normative guidance on optimal stabilization policy in the presence of belief-driven distortions.

4 Methodology

This project employs a multi-stage empirical and theoretical approach to investigate the joint dynamics of household inflation and unemployment expectations and their macroeconomic implications.

4.1 Empirical Strategy

The empirical analysis begins by replicating and extending the core result in Kamdar (2019), which documents a positive cross-sectional correlation between expectations of rising unemployment and higher expected inflation—an empirical regularity at odds with standard Phillips curve reasoning. Using microdata from the University of Michigan Survey of Consumers (MSC) and the New York Fed Survey of Consumer Expectations (SCE), I estimate pooled OLS and panel regressions of 12-month-ahead inflation expectations on indicators for expected changes in unemployment.

To assess the robustness and structure of this co-movement, I will:

- Re-specify the regressions using unemployment expectations as the dependent variable and inflation expectations as the main explanatory variable, motivating a shift to categorical models such as ordered logit or multinomial logit.

- Introduce interaction terms for high-uncertainty periods, proxied by the VIX, financial conditions indices, or crisis dummies (e.g., COVID-19, GFC).
- Construct a time-varying index that captures the intensity of co-movement between inflation and unemployment expectations across time and demographic groups.
- Investigate nonlinearities in this relationship using spline regressions and threshold models.

To identify causal effects, I will apply local projection-IV (LP-IV) and structural vector autoregression (SVAR) techniques using high-frequency monetary policy shocks as external instruments. In particular, I will examine whether forward guidance shocks—distinguishing between Odyssean (commitment-based) and Delphic (information-based) components—differentially influence the inflation–unemployment expectations linkage. This extends the work of **pasqualotto2023** on the term structure of inflation expectations to the joint dynamics of expectations across variables.

Beyond monetary policy, I also plan to explore the effects of trade policy shocks and geopolitical uncertainty using narrative-based or high-frequency surprise measures, assessing whether non-monetary shocks amplify or dampen belief distortions.

4.2 Expectation Structure and Heterogeneity

To better understand the structure of expectations, I will replicate the principal component and multiple correspondence analyses in Kamdar (2019), identifying latent dimensions that capture shared variation in household beliefs. This may enable the construction of an “expectational sentiment index” reflecting belief-based slack or confidence. I will also examine heterogeneity across income, education, age, and employment status to assess whether belief distortions—and their behavioral implications—vary systematically across groups.

To scale this analysis to a richer set of observables, I plan to extend the framework to a Factor-Augmented VAR (FAVAR), using expectations and sentiment data to extract latent macro-belief shocks and study their propagation.

4.3 Structural Modeling and Theory

To formally embed belief-driven dynamics into macroeconomic theory, I aim to build a structural model in the New Keynesian tradition that departs from full-information rational expectations (FIRE). In early stages, unemployment will enter the model only as a belief variable, reflecting perceived rather than actual slack. Ultimately, I aim to:

- Develop a behavioral New Keynesian model where households and/or firms form expectations subject to information-processing frictions (e.g., rational inattention, diagnostic expectations).
- Introduce a planner’s problem where monetary policy is chosen subject to distorted expectations and possible heterogeneity in expectation formation.
- Estimate the model using Bayesian techniques, incorporating shocks to beliefs, and studying implications for monetary and macroprudential policy design.

The goal is to bridge reduced-form evidence on distorted expectations with a fully specified model of macroeconomic dynamics, highlighting when and how beliefs matter for policy.

5 Data

This research draws on two primary microeconomic datasets to examine the joint dynamics of household inflation and unemployment expectations:

5.1 University of Michigan Survey of Consumers (MSC)

The MSC provides monthly cross-sectional microdata on consumer expectations regarding inflation, unemployment, personal finances, and the general economy. The dataset includes responses to both qualitative and quantitative expectation questions, along with detailed demographic information such as income, education, employment status, and age. I use the MSC to estimate cross-sectional and pooled regressions of inflation expectations on unemployment expectations, closely replicating the methodology in Kamdar (2019). This dataset is particularly valuable for constructing sentiment indices and assessing heterogeneity in beliefs across demographic subgroups.

5.2 New York Fed Survey of Consumer Expectations (SCE)

The SCE provides monthly panel microdata that tracks individual respondents over time, allowing for the inclusion of individual fixed effects and the study of dynamic expectation formation. The SCE includes probabilistic distributions for inflation and labor market expectations, as well as subjective uncertainty measures. I reshape and clean the SCE data into panel format to estimate fixed-effects regressions and dynamic models of co-movement. The SCE is particularly useful for examining persistence, asymmetries, and nonlinearity in belief dynamics.

5.3 Monetary Policy Shocks and Financial Indicators

To identify causal effects of monetary policy on expectations, I merge the survey data with external high-frequency monetary policy shocks. These include:

- **Surprise series from high-frequency event studies** (Jarociński & Karadi, 2020; Swanson, 2021), capturing conventional and unconventional monetary policy changes.

- **Forward guidance shocks** that distinguish between Odyssean (commitment-based) and Delphic (informational) components, following the approach in Campbell et al. (2012).
- **Financial and uncertainty indicators** such as the Chicago Fed National Financial Conditions Index (NFCI), the VIX index, and the Caldara–Iacoviello Geopolitical Risk Index.

These series will be aligned with the timing of survey responses to study how different types of shocks influence the co-movement and structure of expectations.

5.4 Future Extensions

In later stages, I plan to incorporate firm-level survey data—such as the ECB’s Consumer Expectations Survey (CES) and the Atlanta Fed’s Business Inflation Expectations Survey (BIE)—to compare expectation formation across consumers and firms. These comparisons will allow me to assess whether firms exhibit similar belief distortions and how that may affect pricing, employment, and investment behavior.

All datasets will be merged, cleaned, and processed using reproducible scripts in Python and Stata. Where applicable, missing values will be dropped, and sample restrictions (e.g., minimum wave participation, consistent demographic reporting) will be applied to ensure consistent and unbiased estimation.

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