Inflation Uncertainty and Labor Market Expectations*

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This paper examines the impact of individual-level inflation uncertainty on labor market expectations using data from the FRBNY Survey of Consumer Expectations (SCE). We analyze how both the first moment (expected inflation level) and the second moment (subjective inflation uncertainty) shape individuals' labor market expectations, particularly during periods of heightened uncertainty. Additionally, we explore the heterogeneous effects of inflation uncertainty on wage growth expectations across different income groups. Our findings indicate that inflation uncertainty is positively correlated with wage growth expectations, with lower-income households exhibiting a stronger response. We propose a precautionary on-the-job search and wage bargaining mechanism (White (2008)) to explain this pattern —workers seek higher nominal wage adjustments to hedge against potential real wage erosion when faced with inflation uncertainty. To address potential endogeneity concerns, we employ a novel instrumental variable (IV) approach leveraging survey-based measures of inflation uncertainty.

Keywords: Expectations, Wages, Uncertainty, Inflation

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"[M]ore importantly, people rarely have precise expectations at all. They do not expect that the price at which they will be able to sell a particular output in a particular future week will be just so-and-so much; there will be a certain figure, or range of figures, which they consider most probable, but deviations from this most probable figure on either side are considered to be more or less possible. This is a complication which deserves very serious attention." John Hicks, "Value and Capital" (Oxford Univ. Press, 1939) p. 125.

1 Introduction

The inflation surge between 2021 and 2023 brought inflation back to the forefront of public and policy discussions. Not only did inflation rise sharper and persist longer than many had anticipated, but household uncertainty regarding future inflation also increased significantly. Notably, inflation uncertainty spiked even before the actual inflation surge in 2022, particularly following the COVID-19 lockdown announcements (see Armantier et al. (2021)).

As illustrated in Figure 1, inflation uncertainty rose before inflation expectations increased. Over time, inflation expectations peaked in mid-2021 but started declining by late 2023, whereas inflation uncertainty remained elevated and failed to return to prepandemic levels. This persistent uncertainty underscores the importance of understanding how individuals perceive inflation dynamics beyond just headline inflation levels and how this uncertainty affects economic behavior.

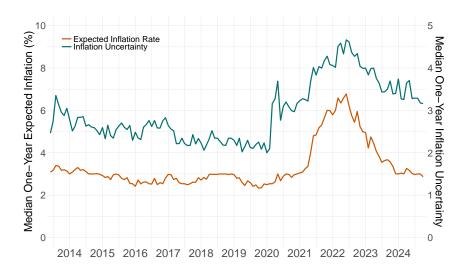


Figure 1: Inflation Expectations and Uncertainty; FRBNY SCE

Note: This figure presents the median inflation expectations and uncertainty from the Federal Reserve Bank of New York's Survey of Consumer Expectations (FRBNY SCE). We show how SIU spiked around the 2020 March lockdown. Following this we see a gradual increase in inflation expectations, reaching an all-time high in June 2021 and then slowly coming down. However, the SIU has increased and stays elevated even for the most recent data.

While inflation expectations have been widely studied, relatively little is known about the role of inflation uncertainty, particularly in the labor market context. A key question that has gained recent attention is: "How large is the pass-through from inflation to wage expectations?" Empirical evidence from both the U.S. and Germany suggests that this

pass-through is surprisingly low (see Hajdini et al. (2023), Buchheim et al. (2023)). This paper seeks to explain why, arguing that inflation uncertainty is a key missing channel in understanding the link between inflation expectations and wage growth expectations. To address this gap, we leverage data from the New York Fed Survey of Consumer Expectations (SCE) to examine how inflation uncertainty shapes labor market outcomes. To account for the simultaneity bias between inflation expectations, inflation uncertainty, and wage growth expectations, we develop a novel instrumental variable (IV) approach that exploits exogenous variation in gasoline and food price expectations and uncertainty. This strategy allows us to isolate the causal effects of inflation uncertainty on labor market behavior. Furthermore, we introduce a theoretical framework that models precautionary behavior (or prudence) in consumer decision-making, with a particular emphasis on its implications for wage bargaining, job search, and labor mobility. By integrating empirical evidence with theoretical insights, this paper provides a comprehensive perspective on how inflation uncertainty influences household labor market decisions and offers new explanations for the low pass-through from inflation to wage growth expectations.

This paper makes three main contributions. First, we provide empirical evidence: We show that individual inflation uncertainty has a stronger influence than inflation expectations on wage growth expectations, on-the-job search behavior, and expected job-to-job transitions. Our findings help explain the low pass-through of inflation expectations to wage growth expectations, as documented in Pilossoph and Ryngaert (2022), Hajdini et al. (2023), and Buchheim et al. (2023). Second, we develop a theoretical model in which workers, facing inflation uncertainty, increase their job search intensity and bargain more aggressively over wages. In this framework, individuals display precautionary behavior in response to uncertainty, leading to adjustments in their labor market participation and wage expectations. The model builds on White (2008), incorporating risk-averse workers and risk-neutral firms, where wages are set in nominal terms, but workers form expectations about future prices. Third, to address endogeneity concerns, we extend the methodology from Binder (2017) to construct uncertainty proxies for key CPI components, including gasoline, food, rent, medical expenses, and education. We then use food and gasoline price expectations and uncertainty as instruments for inflation expectations and inflation uncertainty, providing a robust identification strategy for disentangling the effects of uncertainty on wage expectations.

In the first part of the paper, we present empirical evidence on the role of subjective inflation uncertainty in shaping wage growth expectations. Using data from the FRBNY SCE, we measure inflation uncertainty as the standard deviation of each individual's subjective probability distribution over one-year-ahead inflation expectations. We test the relationship between inflation expectations (first moment) and inflation uncertainty (second moment) with wage growth expectations and other labor market variables. Our results show that: i) The pass-through from inflation uncertainty to wage growth expectations is significantly positive and much higher than the pass-through from inflation expectations. This implies that uncertainty, rather than expectations alone, plays a crucial role in shaping labor market decisions, ii) unlike Pilossoph and Ryngaert (2022), where inflation expectations were found to drive on-the-job search behavior, we find that inflation uncertainty is the primary driver of both job search and expected job-to-job transitions. iii) There is significant heterogeneity in how different income groups respond to inflation uncertainty. We find that low-income households exhibit a much stronger pass-through from inflation uncertainty to wage growth expectations. This can be ex-

plained by the fact that low-income households tend to be more liquidity-constrained and thus more prone to precautionary job search behavior in response to uncertainty (see Figure 2).

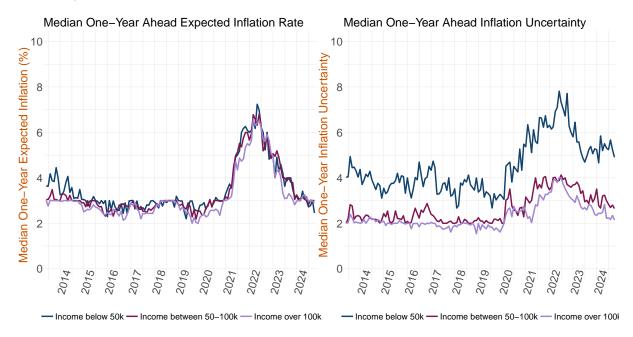


Figure 2: Inflation Expectations and Uncertainty; Income

Note: This figure presents the median inflation expectations and uncertainty from the Federal Reserve Bank of New York's Survey of Consumer Expectations (FRBNY SCE) for different income groups. On the left side of the figure we notice a strong co-movement of inflation expectations across three income groups. Whereas in the right side of the panel we observe a significant difference between low income and high income households towards inflation uncertainty.

To ensure robust identification, we construct an IV strategy using the point forecasts and uncertainty proxies for gasoline, food, medical expenses, rent, and education. Given that gasoline and food price uncertainty contribute most to consumers' overall inflation uncertainty, we use these as instruments for inflation expectations and inflation uncertainty. By leveraging the Round Number suggests Round Interpretations (RNRI) framework of Binder (2017), we classify individuals into high- and low-uncertainty types, allowing us to construct exogenous variation in inflation uncertainty that is unlikely to be directly correlated with wage-setting behavior.

In the second part of the paper, we develop a wage bargaining model with on-the-job random search to formalize the mechanism linking inflation uncertainty, job search, and wage expectations. Our model builds on White (2008), demonstrating that: i) Workers when faced with higher inflation uncertainty, engage in more intensive job searches and negotiate higher wages to hedge against potential real income losses, ii) We assume risk-averse workers form nominal wage agreements while facing uncertainty about future prices, reinforcing the role of prudence in wage-setting behavior, iii) Firms, being risk-neutral, optimize wage offers based on workers' expected inflation risk, reinforcing observed empirical patterns.

Our model's main theoretical predictions align closely with our empirical findings, supporting the hypothesis that inflation uncertainty is a key determinant of labor market behavior.

Relation to the literature: Our paper contributes to multiple strands of the literature.

First, we add to the extensive body of research on consumer inflation expectations. While much of the recent literature has focused on how inflation expectations influence household consumption and spending decisions (see D'Acunto et al. (2024), Coibion et al. (2023), D'Acunto et al. (2021), Kim and Binder (2023), D'Acunto and Weber (2024), Bachmann et al. (2015), Binder et al. (2022)), a growing number of studies have examined their impact on labor market expectations. Recent work finds that the pass-through from inflation expectations to wage growth expectations is relatively low (see Jain et al. (2024), Hajdini et al. (2023), Pilossoph and Ryngaert (2022), Buchheim et al. (2023)). However, there has been limited research on how inflation uncertainty, rather than inflation expectations alone, affects consumer decision-making, with only a handful of studies using RCT-based approaches to explore this relationship (see Georgarakos et al. (2024), Fischer et al. (2024)).

Our paper makes three key contributions to this literature. First, we use both the Michigan Consumer Survey (MCS) and the New York Fed Survey of Consumer Expectations (SCE) to estimate the pass-through of both the first moment (inflation expectations) and the second moment (inflation uncertainty) to labor market outcomes. Second, we establish that inflation uncertainty is a primary driver of labor market expectations, job search behavior, and wage growth expectations. Third, we introduce a novel instrumental variable (IV) approach to rigorously identify the causal relationship between inflation uncertainty and labor market expectations, addressing potential endogeneity concerns.

Second, our study contributes to the literature on heterogeneity in expectation formation, particularly across household income levels. Previous research has largely focused on gender-based differences in inflation expectations (see Reiche (2023), Reiche (2024), Van Hove and Verbraecken (2024)). In contrast, we examine how both inflation expectations (first moment) and inflation uncertainty (second moment) influence labor market outcomes for low- and high-income households. We find that higher inflation uncertainty is associated with a greater rise in wage growth expectations, particularly among low-income households. This highlights the importance of incorporating income heterogeneity when assessing the transmission of inflation expectations to labor market behavior.

Third, we contribute to the literature on precautionary behavior and labor market decisions, particularly in the context of on-the-job search and wage bargaining (see White (2008)). Our findings suggest that workers facing higher inflation uncertainty engage in more aggressive wage bargaining and increase job search intensity, a behavior consistent with precautionary job search theories. By integrating empirical evidence with theoretical modeling, we provide new insights into how inflation uncertainty alters labor market dynamics and the decision-making processes of workers.

2 Data

Survey of Consumer Expectations (FRBNY) - Monthly

The Survey of Consumer Expectations is a core representative monthly survey conducted by (FRBNY). Households rotate through the survey, staying in the sample for up to 12-16 months. This survey includes questions about household macroeconomic expectations (inflation, wage, spending, etc.) and additional questions about finances and employment

situations. FRBNY also conducts ad-hoc labor market survey conducted in March, July, and November each year along with the core survey. The labour market survey contains information on realized income, reservation wages, job satisfaction, job search behavior, and other job-related questions. Our sample spans from June 2013 (the beginning of the FRBNY survey) to September 2023. We include the post-pandemic data to compare how expectations have reshaped.

The core survey, which is conducted monthly, covers detailed data on household inflation expectations. Data on inflation expectations can be calculated using two ways: i) point estimate and ii) probability distribution for inflation expectations. The probabilistic forecast gives information on individual inflation uncertainty. The format of the questions is as follows:

- (Q8v2part2) What do you expect the rate of [inflation/deflation]15 to be over the next 12 months? Please give your best guess. Respondents provide a number for this question. They also provide probabilistic forecasts over possible outcomes for inflation:
- (Q9) Now we would like you to think about the different things that may happen to inflation over the next 12 months. We realize that this question may take a little more effort. In your view, what would you say is the percent chance that, over the next 12 months... ¹

Bins	Percent Chance
Go up by 12% or more	X%
Go up by 8% to 12%	X%
Go up by 4% to 8%	X%
Go up by 2% to 4%	X%
Go up by 0% to 2%	X%
Go down by 0% to 2%	X%
Go down by 2% to 4%	X%
Go down by 4% to 8%	X%
Go down by 8% to 12%	X%
Go down by 12% or more	X%

Similarly, the core survey reports individual-level expected earnings and the probabilistic forecast on expected wage growth.

• (Q23v2part2) By about what per cent do you expect your earnings to have [increased/ decreased as in Q23]? Please give your best guess. Then again, respondents assign probabilities to set a range of earnings growth.

Other macro variables expectations are on the following

- What do you think is the percent chance that 12 months from now the unemployment rate in the U.S. will be higher than it is now?
- What do you think is the percent chance that 12 months from now the average interest rate on saving accounts will be higher than it is now?

¹Compared to professional forecasters, household histograms tend to have more bins. This reflects that households feel more uncertain about their point prediction. When the forecasts are inconsistent, the point forecasts from these respondents are likely to deviate from the central tendency of their density forecasts by a smaller amount Zhao (2023)

- What do you think is the percent chance that 12 months from now, on average, stock prices in the U.S. stock market will be higher than they are now?
- What do you think is the percent chance that you will lose your "current" job during the next 12 months?
- What do you think is the percent chance that you will leave your "current" job voluntarily during the next 12 months?
- Suppose you were to lose your job this month. What do you think is the percent chance that within the following 3 months, you will find a job that you will accept, considering the pay and type of work?

All the point forecasts have been winsorized at the bottom top 3 and 97th percentile. To make them further consistent we follow the approach by Crump et al. (2022) to make point forecasts consistent with the subjective density probability. We replace all the point forecasts for both expected inflation and wage growth with NA which lie outside the range of each subjective distribution.

Subjective Uncertainty

Subjective uncertainty is defined as the perceived uncertainty of an individual about her economic forecast. Following Engelberg et al. (2009) and Armantier et al. (2017), we fit a parametric distribution for each respondent. Depending on the number of bins selected by each individual (reported positive probabilities) we fit the following distribution; i) three or more intervals - we fit a generalized beta distribution (GBD), ii) two intervals - we fit an isosceles triangle distribution, iii) one interval - we fit an uniform distribution. Fitting GBD yields a full analytical distribution so the researchers can study more than the second moment. From the fitted distribution, we calculate the standard deviation from the variance of the distribution.

Calculating standard deviation: Using the individual subjective probability distribution, we obtain individual central tendencies. We measure uncertainty as the standard deviation from individual distributional variance.

SCE Labor Market Survey

SCE Labor Market Survey is a supplement survey conducted three times a year by the FRBNY. Our sample spans from June 2014 to April 2023. The survey contains the search and labor market realizations. Each time respondents participate in the labor market supplement, they are asked if they have looked for work or - in the case of employed respondents - for new work in the last four weeks. Employed respondents are further asked if they have been searching in order to leave their current job or for supplemental work.

Job search among employed is key determined in labor market transitions. We hence use two main questions asked in the survey where respondents answers:

- "Have you done anything in the LAST 4 WEEKS to look for new work?"
- "What do you think is the percent chance that four months from now you will be..."

3 Descriptives

Below, we present the data descriptive for the SCE monthly survey. In Table 1 we can see that on average; female, income less than 50K, high school educated, over 60 years, and low numeracy individuals have higher inflation and wage growth expectations.

Table 1: Descriptives

Survey	Inflation Expectations			Wage Expectations			Inflation Uncertainty		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
All									
	4.66	3	4.91	3.35	3	3.59	2.61	1.73	2.59
Income									
Under 50k	5.7	4	5.88	3.48	2	4.08	3.37	2.23	3.09
50k to $100k$	4.49	3	4.67	3.21	2	3.45	2.41	1.41	2.41
Over 100k	3.7	3	3.72	3.41	3	3.33	1.99	1.41	1.87
Gender									
Male	4.09	3	4.05	3.53	3	3.64	2.18	1.14	2.17
Female	5.32	4	5.69	3.15	3	3.51	3.07	2.00	2.91
Education									
High School	6.25	5	6.47	3.40	2	3.86	3.87	2.44	3.37
Some College	5.38	4	5.56	3.30	2	3.67	3.00	1.73	2.89
College	3.97	3	4.00	3.36	3	3.50	2.13	1.41	2.04
Age									
Under 40	4.04	3	4.63	3.75	3	3.62	2.78	1.73	2.57
40 to 60	4.77	3	5.12	3.11	2	3.45	2.62	1.73	2.63
Over 60	5.05	4	4.84	3.11	2	3.38	2.43	1.41	2.55
Numeracy									
High	4.16	3	4.18	3.32	3	3.48	2.16	1.41	2.08
Low	6.14	5	6.42	3.46	2	3.90	3.80	2.45	3.33
Employment Statu	s								
Employed	4.39	3	4.70	3.36	3	3.58	2.50	1.73	2.47
Unemployed	5.23	4	5.29	2.89	2	4.33	2.86	1.73	2.81

Notes: This table reports average values, medians, and cross-sectional standard deviations of expected inflation, expected wage growth, and expected inflation uncertainty over the next 12 months (cols. 1–3), expected wage over the next 12 months (cols. 4–6), and (cols. 7-10). Rows indicate which subset of the sample is used.

4 Estimation and Regressions

In this section, we estimate reduced form fixed effect OLS regression on various labor market variables and how it is affected by individual-level subjective inflation uncertainty.

4.1 Expected Inflation Uncertainty and Wage Growth Expectations: SCE Core Module

Here, we first estimate the relation between subjective uncertainty and wage growth expectations. We study only the subset of individuals who are either full-time or part-time employed. In equation 1 and 12,

$$\mathbb{E}_{i,t}[w_{t+12}^g] = \alpha_i + \beta_1 \mathbb{E}_{i,t}[\pi_{t+12}] + \Lambda \mathbf{Z}_{i,t+12} + \Phi' \mathbf{X}_{i,t} + \mu_t + \epsilon_{i,t}$$
 (1)

$$\mathbb{E}_{i,t}[w_{t+12}^g] = \alpha_i + \beta_1 \mathbb{E}_{i,t}[\pi_{t+12}] + \beta_2 \mathbb{E}_{i,t}[\sigma_{t+12}] + \Lambda \mathbf{Z}_{i,t+12} + \Phi' \mathbf{X}_{i,t} + \mu_t + \epsilon_{i,t}$$
 (2)

The dependent variable is the individual's "own" wage (earning) expectations one year ahead. $\mathbf{E}_{i,t}\pi_{t+12}$ is the individual's one-year ahead inflation point forecast. $\sigma_{i,t}\pi_{t+12}$ is subjective uncertainty over prices. $\Lambda \mathbf{Z}_{i,t+12}$ controls for subjective expectations over other macroeconomic variables (expected unemployment, expected interest rate, probability of losing the job, stock prices, percieved and expected financial conditions). $\Phi'\mathbf{X}_{i,t}$ are the controls referring to age, gender, non relatives, other relatives, detailed income, detailed education, white, numeracy, states, home ownership, marriage, children, tenure id. We have survey date fixed effects (μ_t) .

In Table 2, we present the results from estimating equations 1 and 12, which examine the relationship between inflation uncertainty and labor market expectations.

Column (1) shows that expected inflation is positively and significantly associated with wage growth expectations, with a coefficient of 0.10. This suggests that individuals who anticipate higher inflation also expect their wages to grow more over the next year. Additionally, we find that expected unemployment is negatively associated with wage growth expectations, implying that concerns about rising unemployment dampen expected wage growth. Column (2) introduces inflation uncertainty, which is strongly positively correlated with wage growth expectations (0.16). This indicates that individuals who are more uncertain about future inflation tend to anticipate higher wage growth.

Column (3) includes an interaction term between expected inflation and inflation uncertainty, revealing a significant negative interaction effect. This suggests that the pass-through from inflation expectations to wage growth expectations is lower when inflation uncertainty is high. In other words, while inflation uncertainty alone drives higher wage growth expectations, it also dampens the direct impact of expected inflation on wage expectations, possibly due to greater uncertainty in wage-setting negotiations or increased job search efforts under heightened inflation risks.

4.2 Income Effect on Inflation Uncertainty and wage growth expectations

We create an income dummy based on individual-level household income. Let D^{income} be the dummy which is defined as:

$$D^{i,incme} = \begin{cases} 1 & \text{if household income} \le \$67,500 \\ 0 & \text{otherwise} \end{cases}$$

Hence we estimate the following OLS to study the transmission of uncertainty between two income groups.

$$\mathbb{E}_{i,t}[w_{t+12}^g] = \alpha_i + D^{income} + \beta_1 \mathbb{E}_{i,t}[\pi_{t+12}] + \beta_2 \mathbb{E}_{i,t}[\sigma_{t+12}] + \beta_1 \mathbb{E}_{i,t}[\pi_{t+12}] * D^{income} + \beta_2 \mathbb{E}_{i,t}[\sigma_{t+12}] * D^{income} + \Lambda \mathbf{Z}_{i,t+12} + \Phi' \mathbf{X}_{i,t} + \mu_t + \epsilon_{i,t}$$
(3)

Table 3 examines the relationship between inflation uncertainty, income levels, and wage growth expectations, focusing on differences between individuals above and below the 67,500 household income threshold.

The negative coefficient on the income dummy (-0.2157) suggests that, on average, lower-income individuals ($\leq 67,500$) have lower wage growth expectations compared to higher-

income individuals. This indicates that income level itself is an important factor in shaping wage expectations, likely reflecting differences in bargaining power, job stability, and access to alternative income sources.

The interaction between Inflation Expectations and Low Income is not statistically significant, suggesting that the relationship between expected inflation and wage growth expectations does not differ meaningfully between income groups. However, the interaction between Inflation Uncertainty and Low Income (0.0707) is positive and significant, indicating that lower-income individuals respond more strongly to inflation uncertainty when forming their wage growth expectations. This implies that when inflation uncertainty rises, lower-income workers are more likely to adjust their wage expectations upwards, possibly as a precautionary response to protect real wages.

4.3 Inflation Uncertainty and Labor Market Expectations

Using the supplement data from ad-hoc Labor market expectations, we look into how the job search and expected job transition of the respondents. To estimate the effect of inflation uncertainty on job search and expected job transition we define the following variables:

4.3.1 Search over last 4 weeks

For people already employed, the respondents answered to if they have been looking for a job over the last 4 weeks. To match the timing of the questions, we take a month lag of expected inflation and inflation uncertainty. This modify the questions, if you have been searching for a job over the next 4 weeks. So we create the search dummy which is defined as:

$$\operatorname{search}_{i,t+1} = \begin{cases} 1 & \text{if employed people are searching} \\ 0 & \text{otherwise} \end{cases}$$

So, to further estimate the relationship between inflation expectations, uncertainty, and on-the-job search with the following probit regression:

$$\operatorname{search}_{i,t+1} = \beta_1 E_{i,t}[\pi] + \gamma x_{i,t} + u_t + \epsilon_{i,t}$$
(4)

$$\operatorname{search}_{i,t+1} = \beta_1 E_{i,t}[\pi] + \beta_2 E_{i,t}[\sigma^{\pi}] + \gamma x_{i,t} + u_t + \epsilon_{i,t}$$
(5)

The results in Table 4 present the relationship between inflation expectations, inflation uncertainty, and job search behavior. The dependent variable in columns (1) and (2) represents whether an individual will search for a job over the four weeks, while column (3) focuses specifically on job search among employed individuals (on-the-job search).

The coefficient on expected inflation $(E_t[\pi])$ in column (1) is positive and significant (0.0038), suggesting that individuals with higher expected inflation are slightly more likely to engage in job search. However, when inflation uncertainty is introduced in column (2), the coefficient on expected inflation loses significance, implying that uncertainty rather than expectations of inflation levels may be the key driver of job search behavior.

The coefficient on inflation uncertainty $(E_t[\sigma])$ in column (2) is positive and significant (0.0109), indicating that individuals facing greater inflation uncertainty are more likely to search for a job. This effect persists in column (3) (0.0116) when focusing on on-the-job search, suggesting that employed workers also increase their job search intensity when inflation uncertainty rises.

4.3.2 Actual Job-to-Job Transition

Using the same labor market survey we look into respondents who report actual expected Job to Job transition. We look from the core module where respondents answer if they have switched to a new employer or stayed with the same as compared to the last survey. For actual job-to-job transition we create a dummy which is given as:

$$jj_{t+5,t+1} = \begin{cases} 1 & \text{respondent switch new employer} \\ 0 & \text{otherwise} \end{cases}$$

$$job\text{-}job_{i,t+1} = \beta_1 E_{i,t}[\pi] + \gamma x_{i,t} + u_t + \epsilon_{i,t}$$
(6)

$$job-job_{i,t+1} = \beta_1 E_{i,t}[\pi] + \beta_2 E_{i,t}[\sigma^{\pi}] + \gamma x_{i,t} + u_t + \epsilon_{i,t}$$
 (7)

Table 5 presents the results of the probit regression estimating the relationship between inflation expectations, inflation uncertainty, and job-to-job transitions. Column (1) shows that expected inflation $(E_t[\pi])$ has a positive and statistically significant effect on the likelihood of switching employers, with a coefficient of 0.0141. This suggests that individuals who anticipate higher inflation are more likely to transition to a new job, potentially as a means of securing higher wages to compensate for expected price increases. In Column (2), we introduce inflation uncertainty $(E_t[\sigma])$, but its coefficient is negative and statistically insignificant, indicating that subjective uncertainty over inflation does not significantly impact the probability of switching employers.

4.3.3 Expected Job-to-Job Transition

Lastly, we look at the supplement where respondents give the percent chance that four months from now they will be employed and working for a different employer, and for people working non-self-employed moved to self-employed.

We also estimate a dummy for the expected job-to-job transition which is defined as:

$$jj_{t+5,t+1} = \begin{cases} 1 & \text{Percent chance is} > 0 \text{ for moving to a new employer} \\ 0 & \text{otherwise} \end{cases}$$

and we estimate the Probit model as the following:

$$JJ_{i,t+4} = \beta_1 E_{i,t}[\pi] + \gamma x_{i,t} + u_t + \epsilon_{i,t}$$
(8)

$$JJ_{i,t+4} = \beta_1 E_{i,t}[\pi] + \beta_2 E_{i,t}[\sigma^{\pi}] + \gamma x_{i,t} + u_t + \epsilon_{i,t}$$
(9)

The results presented in Tables 6 examine the relationship between inflation expectations, inflation uncertainty, and expected job transitions. The first set of regressions considers the percentage chance that respondents anticipate switching to a new employer within the next four months. In Table 6, Column (1) shows the expected inflation $(E_t[\pi])$ is negatively correlated with expected job transitions, but the coefficient is not statistically significant. However, when controlling for inflation uncertainty $(E_t[\sigma])$ in Column (2), we find a significant negative effect of inflation expectations on job transition probability, with a coefficient of -0.2251. This suggests that higher expected inflation reduces individuals' likelihood of anticipating a job switch. In contrast, inflation uncertainty $(E_t[\sigma])$ has a strong and positive effect, with a coefficient of 0.9114, indicating that individuals facing greater uncertainty about future inflation are significantly more likely to expect job-to-job transitions. These findings suggest that uncertainty plays a key role in shaping workers' expectations about their labor market mobility.

To further investigate this relationship, Table 7 estimates a probit model where the dependent variable is a binary indicator for whether respondents report a nonzero probability of switching employers. The results reinforce the previous findings: inflation expectations $(E_t[\pi])$ are negatively associated with expected job transitions, with a coefficient of -0.0333 in Column (2). Conversely, inflation uncertainty $(E_t[\sigma])$ has a strong positive effect, with a coefficient of 0.1090. This indicates that individuals who are more uncertain about future inflation are significantly more likely to report an expected job transition, consistent with the notion that uncertainty over future wages and purchasing power increases the incentive to seek alternative employment opportunities.

5 Results

Table 2: Inflation Uncertainty and Wage Growth Expectations

Dependent Variable:	Wage growth expectations (12m)			
Model:	(1)	(2)	(3)	
Expected Inflation	0.10***	0.06***	0.13***	
	(0.005)	(0.006)	(0.009)	
Expected Unemployment	-0.003***	-0.003***	-0.004***	
	(0.0009)	(0.0009)	(0.0009)	
Inflation Uncertainty		0.16^{***}	0.22^{***}	
		(0.01)	(0.01)	
Expected inflation×Inflation Uncertainty			-0.01***	
			(0.001)	
Financial Cond	Yes	Yes	Yes	
Credit Cond	Yes	Yes	Yes	
Demographics	Yes	Yes	Yes	
tenure_id	Yes	Yes	Yes	
$survey_date$	Yes	Yes	Yes	
Observations	91,223	91,223	91,223	
\mathbb{R}^2	0.16032	0.16743	0.16914	

Clustered (user-id) standard errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1. We have wage growth expectations as the dependent variable. In cols (1), (2), and (3) we control for married, female, hispanic, spouse, child over 18, detailed household income, non relative, other relative, white, age, detailed education, child under 18, numeracy, state, home ownership, and secondary home ownership. We also control perceived and expected household financial situation and other expected macro variables; expected internet rate, expected stock prices, and expected probability of losing a job. For fixed effects, we control for survey date and tenure id Kim and Binder (2023). The analysis time frame is from June 2013 to December 2023.

Table 3: Income wise: Inflation and Wage growth expectations

Dependent Variable:	Wage growth expectations
Model:	(1)
Inflation Expectations	0.0544***
	(0.0071)
Income Dummy	-0.2157**
	(0.0860)
Inflation uncertainty	0.1403***
	(0.0143)
Inflation Expectations $\times D^I < \$67, 5k$	0.0091
	(0.0109)
Inflation uncertainty $\times D^I < \$67, 5k$	0.0707***
	(0.0215)
Exp Macro Variable	Yes
Fin Cond.	Yes
Credit Conditions	Yes
Demographics	Yes
Survey Date	Yes
Tenure ID	Yes
Observations	92,657
\mathbb{R}^2	0.17216

Clustered (userid) standard-errors in parentheses

Signif. Codes: ***: 0.01, **: 0.05, *: 0.1

Clustered (user-id) standard errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1. We have wage growth expectations as the dependent variable. In cols (1) we control for married, female, hispanic, spouse, child over 18, detailed household income, non relative, other relative, white, age, detailed education, child under 18, numeracy, state, home ownership, and secondary home ownership. We also control perceived and expected household financial situation and other expected macro variables; expected internet rate, expected stock prices, and expected probability of losing a job. For fixed effects, we control for survey date and tenure id Kim and Binder (2023). The analysis time frame is from June 2013 to December 2023.

Table 4: Search over next 4 weeks

Dependent Variables:	Searc	ch all	On the job search
Model:	(1)	(2)	(3)
$E_t[\pi]$	0.0038**	0.0015	-0.0003
	(0.0016)	(0.0019)	(0.0021)
$E_t[\sigma]$		0.0109^{**}	0.0116*
		(0.0053)	(0.0059)
Year-month	Yes	Yes	Yes
Demographics	Yes	Yes	Yes
Financial Cond	Yes	Yes	Yes
Observations	25,138	25,138	17,619
Squared Correlation	0.10271	0.10290	0.06040
Pseudo \mathbb{R}^2	0.10094	0.10116	0.05610
BIC	24,038.9	24,043.4	$19,\!110.7$

Clustered (user-id) standard errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1. We have a dummy for the search.) We control for married, female, hispanic, spouse, child over 18, detailed household income, non relative, other relative, white, age, detailed education, child under 18, numeracy, state, home ownership, and secondary home ownership. We also control perceived and expected household financial situation. For fixed effects, we control for year-month. The analysis time frame is from June 2014 to November 2023.

Table 5: Job to Job Transition

Dependent Variable:	Job to Job	transition
Model:	(1)	(2)
$E_t[\pi]$	0.0141***	0.0152***
	(0.0046)	(0.0044)
$E_t[\sigma]$		-0.0049
		(0.0110)
date_char	Yes	Yes
Demographics	Yes	Yes
Financial Cond	Yes	Yes
Observations	16,859	16,859
Squared Correlation	0.02393	0.02392
Pseudo R ²	0.10339	0.10345
BIC	3,199.2	3,208.8

Clustered (user-id) standard errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1. We have a dummy for the expected Job to Job transition as the dependent variable. In cols (1) and (2) we control for married, female, hispanic, spouse, child over 18, detailed household income, non relative, other relative, white, age, detailed education, child under 18, numeracy, state, home ownership, and secondary home ownership. We also control perceived and expected household financial situation. For fixed effects, we control for year-month. The analysis time frame is from June 2013 to November 2023.

Table 6: Expected Job Transition

Dependent Variable:	Expected Jo	b Transition (Percent)
Model:	(1)	(2)
$E_t[\pi]$	-0.0539	-0.2251***
	(0.0562)	(0.0376)
$E_t[\sigma]$	0.2811**	0.9114^{***}
	(0.1410)	(0.0853)
User-id	Yes	
Year-month	Yes	Yes
Demographics		Yes
Fin Conditions		Yes
Observations	17,968	17,775
\mathbb{R}^2	0.70448	0.07715

Clustered (user-id) standard errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1. We have a percentage change of expected transition to a new employer in the next 4 months as the dependent variable. In cols (1) and (2) we control for married, female, hispanic, spouse, child over 18, detailed household income, non relative, other relative, white, age, detailed education, child under 18, numeracy, state, home ownership, and secondary home ownership. We also control perceived and expected household financial situation. For fixed effects, we control for year-month. The analysis time frame is from June 2013 to November 2023.

Table 7: Expected Job Transition Dummy

Dependent Variable:	Expected JJ	Transition dummy
Model:	(1)	(2)
$E_t[\pi_{t+1}]$	-0.0092***	-0.0333***
	(0.0023)	(0.0021)
$E_t[\sigma_{t+1}]$		0.1090^{***}
		(0.0052)
Year Month	Yes	Yes
Demographics	Yes	Yes
Fin Conditions	Yes	Yes
Observations	17,013	17,013
Squared Correlation	0.07178	0.09849
Pseudo R ²	0.05340	0.07288
BIC	23,493.1	23,043.4

Clustered (user-id) standard errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1. We have a dummy for the expected Job to Job transition as the dependent variable. In cols (1) and (2) we control for married, female, hispanic, spouse, child over 18, detailed household income, non relative, other relative, white, age, detailed education, child under 18, numeracy, state, home ownership, and secondary home ownership. We also control perceived and expected household financial situation. For fixed effects, we control for year-month. The analysis time frame is from June 2013 to November 2023.

6 Robustness Checks

Even though our analysis mainly uses Survey of Consumer Expectations is a core representative monthly survey conducted by (FRBNY), we present the results from the Michigan Consumer Survey (MCS) which presents a longer time series.

6.1 Michigan Consumer Survey MCS

The Michigan Consumer Survey (MCS) is a rotating panel dataset that tracks various macroeconomic variables, including inflation expectations, income growth, and unemployment expectations. Each month, the survey collects responses from approximately 500 households, capturing their attitudes and expectations regarding economic conditions.

For inflation expectations, respondents are asked:

- "During the next 12 months, do you think that prices in general will go up, go down, or stay the same? By what percent do you expect prices to rise, on average, over the next 12 months?"
- "During the next 12 months, do you expect your (family) income to be higher or lower than during the past year? By approximately what percent do you expect your (family) income to increase over the next 12 months?"

For this study, we use the time series data from January 1978 onwards, leveraging the rich historical insights provided by the MCS to analyze household expectations and their implications for macroeconomic trends.

Binder (2017) creates the variable on inflation uncertainty using MCS data. Using individual-level probability of being high uncertainty we use the proxy to provide evidence on how inflation uncertainty affects labor market outcomes (income in this case).

Table 8: Expected Income Growth: MCS

Dependent Variable:		ez	xpected_inco	ome	
Model:	(1)	(2)	(3)	(4)	(5)
exp_inflation	0.0202**	-0.0039	0.0808***	-0.0141*	0.0270**
	(0.0091)	(0.0099)	(0.0186)	(0.0078)	(0.0136)
zeta		0.7690***	1.301***	0.7033^{***}	0.9998***
		(0.1034)	(0.1383)	(0.0868)	(0.1176)
$\exp_{-inflation} \times zeta$			-0.1227***		-0.0612***
			(0.0226)		(0.0176)
exp_business_cond	Yes	Yes	Yes		
$\exp_{\text{lin_business_cond}}$	Yes	Yes	Yes		
$\exp_{-}unemp12$	Yes	Yes	Yes		
$\exp_{\text{int_rate}12}$	Yes	Yes	Yes		
Demographics	Yes	Yes	Yes		
YYYYMM	Yes	Yes	Yes	Yes	Yes
ID				Yes	Yes
Observations	171,852	171,852	171,852	271,474	271,474
\mathbb{R}^2	0.09543	0.09575	0.09595	0.03209	0.03214

Clustered (ID) standard-errors in parentheses

Signif. Codes: ***: 0.01, **: 0.05, *: 0.1

6.2 SCE Monthly Core Survey

We use other proxies from the SCE Survey to confirm the pass-through of uncertainty (measured by interquartile range) we see similar results, as shown in Table 9 columns (1) to (2). For columns (3) and (4) we use three-years ahead inflation expectations and expected inflation uncertainty. We see that the effect of three-year ahead uncertainty is positive and significant to one-year ahead wage growth expectations.

Table 9: Robustness Measures with IQR (proxy uncertainty) and three year ahead inflation forecasts

Dependent Variable:		$E_t w_t^g$	+12 t,i	
Model:	(1)	(2)	(3)	(4)
$E_t \pi_{t+12 t,i}^{dens}$	0.1038***	0.0380***		
	(0.0085)	(0.0057)		
$E_t \sigma^{IQR}_{t+12 t,i}$	0.1502^{***}	0.0416^{***}		
0 12 0,0	(0.0081)	(0.0062)		
$E_t \pi_{t+12 t,i}^{dens} \times E_t \sigma_{t+12 t,i}^{IQR}$	-0.0094***	-0.0032***		
0 12 0,0	(0.0008)	(0.0006)		
$E_t \pi_{t+36 t,i}^{dens}$,	,	0.0751^{***}	0.0234***
0 1 33 p.			(0.0079)	(0.0054)
$E_t \sigma_{t+36 t,i}^{IQR}$			0.1425***	0.0410***
0 00 0,0			(0.0078)	(0.0061)
$E_t \pi_{t+36 t,i}^{dens} \times E_t \sigma_{t+36 t,i}^{IQR}$			-0.0076***	-0.0023***
			(0.0009)	(0.0006)
Financial Condition	Yes		Yes	
Demographics Control	Yes		Yes	
Expected Macro Variables	Yes		Yes	
Tenure FE	Yes		Yes	
Survey Date FE	Yes	Yes	Yes	Yes
User id FE		Yes		Yes
Observations	82,482	84,641	$82,\!555$	84,717
\mathbb{R}^2	0.17959	0.68125	0.17837	0.68121

Clustered (user-id) standard errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1. We have wage growth expectations as the dependent variable. In cols (1) and (3) we control for married, female, hispanic, spouse, child over 18, detailed household income, non relative, other relative, white, age, detailed education, child under 18, numeracy, state, home ownership, and secondary home ownership. Also, columns (1) and (2) report expected inflation and uncertainty for one year ahead. We also control perceived and expected household financial situation and other expected macro variables; expected internet rate, expected stock prices, and expected probability of losing a job. For fixed effects, we control for survey date and tenure id Kim and Binder (2023). For columns (2) and (4) we have userid and survey date fixed effects. Also, columns (3) and (3) report expected inflation and uncertainty for three years ahead. The analysis time frame is from June 2013 to September 2023.

Table 10: Inflation Uncertainty and Wage Growth Expectations (User ID)

Dependent Variable:	Wage g	rowth exp	ectations
Model:	(1)	(2)	(3)
Expected Inflation	0.05***	0.04***	0.08***
	(0.004)	(0.005)	(0.007)
Inflation Uncertainty		0.03***	0.06***
		(0.010)	(0.01)
Expected Inflation ×Inflation Uncertainty			-0.005***
			(0.001)
user-id	Yes	Yes	Yes
survey date Other macro expectations	Yes	Yes	Yes
Observations	93,504	93,504	93,504
\mathbb{R}^2	0.63274	0.63282	0.63307

Clustered (userid) standard-errors in parentheses Signif. Codes: ***: 0.01, **: 0.05, *: 0.1

7 Instrument Variable

In the previous section, we presented the reduced-form OLS results, demonstrating the relationship between inflation uncertainty and wage growth expectations. While we partially address identification concerns by controlling for individual demographics, tenure ID, and survey date fixed effects, endogeneity remains a potential issue. Specifically, simultaneity bias may arise if individuals with higher wage growth expectations also anticipate higher inflation, thereby influencing their inflation uncertainty. Additionally, errors-in-variable bias may be present if our independent variables are measured with error. To mitigate these concerns, we construct a novel instrumental variable (IV) based on survey responses regarding price expectations for other goods and services. While we do not claim full exogeneity, this IV approach provides a robust complement to our reduced-form analysis, reinforcing our conclusion that inflation uncertainty is a key driver of wage growth expectations.

Our IV strategy builds on insights from behavioral economics, particularly the literature on decision-making under uncertainty. Individuals often express beliefs about uncertain events in numerical form, such as odds or subjective probabilities Tversky et al. (1982). Prior research, including Kumar (2009), has shown that under conditions of higher uncertainty, individuals tend to display overconfidence and cognitive biases. We leverage these behavioral patterns using the methodology introduced by Krifka (2007), which has been applied in empirical work by Binder (2017) to construct an inflation uncertainty index using point forecasts from the Michigan Consumer Survey. Similar approaches have been implemented for ECB data Reiche and Meyler (2022), as well as in studies on numerical rounding biases in survey responses Clements (2021), Hervé and Schwienbacher (2018). This methodology is grounded in the "Round Number Suggests Round Interpretation" (RNRI) hypothesis, which posits that consumers' quantitative inflation expectations consist of both precise estimates from more certain consumers and rounded approximate estimates from less certain consumers.

Applying this framework, we construct a probability measure of subjective uncertainty surrounding expected price changes for key consumer goods. This measure serves as an instrument for individual-level inflation uncertainty in our analysis. The FRBNY Survey of Consumer Expectations (SCE) elicits price expectations for various essential goods and services by asking respondents:

Twelve months from now, what do you think will have happened to the price of the following items?

- The price of a gallon of gas to have increased OR decreased by XX %
- The price of food to have increased OR decreased by XX %
- The price of medical care to have increased OR decreased by XX %
- The cost of a college education to have increased OR decreased by XX %
- \bullet The cost of renting a typical house/apartment to have increased OR decreased by XX %
- \bullet The price of gold to have increased OR decreased by XX %

By leveraging these responses, we construct an uncertainty proxy that captures subjective

inflation uncertainty at the individual level. This IV strategy strengthens our empirical analysis by addressing potential endogeneity concerns and reinforcing the robustness of our findings.

IV results

We perform the first stage of 2SLS to look out for i) omitted variables, ii) simultaneous equations, and iii) measurement errors in the covariates.

The coefficient of the internet is given as:

$$\hat{\beta}_{IV} = (Z'X)^{-1}Z'y \tag{10}$$

In our case, subjective inflation uncertainty $E_t \sigma_{t+12|t}$ can be endogenous. So we use the Probability of high uncertain type agent around food prices as an exogenous variable to $E_t \sigma_{t+12|t}$. The first stage looks like:

$$\mathbb{E}_{t}\sigma_{t+12|t} = \gamma_{0} + \gamma_{1} * Prob(\zeta_{\text{lag food}}^{i}) + \gamma_{2} * Prob(\zeta_{\text{lag gas}}^{i}) + \gamma_{3} * Prob(\Delta\zeta_{\text{food}}^{i}) + \gamma_{4} * Prob(\Delta\zeta_{\text{gas}}^{i}) + \gamma_{5} * E_{t-1}\text{lag food}^{i}) + \gamma_{6} * E_{t-1}\text{lag gas}^{i}) + \gamma_{7} * E_{t}\Delta\text{lag food}^{i}) + \gamma_{7} * E_{t}\Delta\text{lag gas}^{i}) + u \quad (11)$$

We then use the fitted values from the first stage -as the covariates in the second stage:

$$\mathbb{E}_t \hat{\sigma}_{i,t+12} = \hat{\gamma}0 + \hat{\gamma}_1 * Prob(\zeta_{food}^i)$$

$$E_t w_{i,t+12}^i = \alpha_i + \beta_1 E_t \pi_{t,t+12}^i + \beta_2 E_t \hat{\sigma}_{t,t+12}^i + \Lambda \mathbf{Z}_{t+12}^i + \Phi' \mathbf{X}_t^i + \mu_t + \epsilon_t^i$$
 (12)

In this case, if we have a valid instrument, then our estimate of β_2 in the second stage is consistent.

In Table 11, we try to instrument $E_t \sigma_{t,t+12}^i$ with the ζ_i which is the probability of being of the high uncertain type of agent, compiled for point forecast of one year ahead gas and food point forecast. Comparing columns (1) and (2) we see that compared to OLS results in column (1), IV has a much higher effect of subjective uncertainty on wage expectations. However, we have insignificant inflation expectations on wage expectations (similar to Georgarakos et al. (2024))

Table 11: OLS vs IV Results

Dependent Variable:	Expected W	Wage Growth
Model:	(OLS)	(IV)
Expected Inflation	0.0814***	0.8857
	(0.0082)	(0.7663)
Inflation Uncertainty	0.0452^{***}	1.996**
	(0.0162)	(0.9489)
Expected Inflation \times Inflation Uncertainty	-0.0048***	-0.1860
	(0.0013)	(0.1479)
F-statistics Mean	-	176
F-statistics Uncertainty	_	50
Uncertainty of Comm	Yes	Yes
Lag(Uncertainty of Comm)	Yes	Yes
Expected Macro	Yes	Yes
userid	Yes	Yes
$survey_date$	Yes	Yes
Credit Cond	Yes	Yes
Fin Cond	Yes	Yes
Observations	70,871	70,871
\mathbb{R}^2	0.65885	0.34764

Clustered (userid) standard-errors in parentheses Signif. Codes: ***: 0.01, **: 0.05, *: 0.1

8 Model

To be added later....

9 Policy

Most of the work has addressed the work toward economic policy uncertainty (EPU) and how it affects economic decisions. Many studies have also looked into how (EPU) affects its firm's investments, financial markets, household decisions, etc. But, it's important to look at how SIU impacts household decisions. They are key in labor market dynamics, portfolio, consumption, and wealth decisions. More uncertainty can lead to changes in beliefs for firms' decisions as well so it is important to uncover how subjective uncertainty is formed and affects other decisions. Also, policymakers interested in central bank communication can mitigate this by conveying information on both the first and second moments.

10 Conclusion

We conclude that higher subjective inflation uncertainty significantly influences wage growth expectations. This relationship is driven by an increase in job search duration, as individuals facing greater uncertainty are more likely to engage in precautionary job searches. Additionally, individuals with higher inflation uncertainty exhibit a greater likelihood of transitioning to a new employer, which, in turn, contributes to higher expected wage growth. This finding explains why increased inflation uncertainty leads to higher wage growth expectations.

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Appendix for ""

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Contents