Workers' Perceptions of Earnings Growth and Employment Risk

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Abstract

In addition to realized earnings and employment shocks, forward-looking individuals are presumed to condition their consumption and labor supply decisions on their subjective beliefs about future labor market risks. This paper uses rich panel data to document considerable individual heterogeneity in earnings growth expectations and in the perceived likelihood of voluntary and involuntary job exits. We examine how expectations evolve over the working life and business cycle, and how they co-vary with macroeconomic expectations and personal experiences. While largely consistent with patterns in realized outcomes, our findings highlight the unanticipated nature of the pandemic recession and the ensuing resignation wave.

Key words: labor market uncertainty, expectations data, beliefs, household surveys

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1 Introduction

A longstanding and consequential area of economic research has been the empirical study of the nature, magnitude, and evolution of individual earnings and income volatility as well as their implications for inequality and for consumption and saving choices. To date, much of this work has focused on the realizations of earnings and income shocks, but for forward-looking agents their *beliefs* about future earnings and income volatility are similarly important for the economic decisions they make as workers and consumers. For example, Ben-David et al. (2018) find that individuals with more uncertain expectations about their personal and macroeconomic situation exhibit more precaution in their consumption, credit, and investment behaviors. More broadly, the impact of an income shock on consumption depends on the extent to which the shock is anticipated.

In contrast to an expansive literature on realized shocks (Gottschalk and Moffitt (1994, 2009); Guvenen (2009); Guvenen et al. (2014, 2017, 2021); Moffitt et al. (2022)) and on how such shocks affect consumption (Meghir and Pistaferri, 2011; Arellano et al., 2017), relatively little is known about consumers' perceptions of earnings and income uncertainty and their beliefs about the drivers and persistence of such earnings shocks. Furthermore, little is understood about how these perceptions change over the working life and over time as economic conditions change, sometimes quite sharply as during the onset of the pandemic. Access to high quality subjective expectations data that capture such uncertainty can help improve our understanding of the extent of and the heterogeneity in perceived uncertainty and how it relates to economic behavior and outcomes. A better understanding of the effects of labor market risks on aggregate saving, consumption, and labor supply in turn is valuable for assessing the implications of changing earnings volatility and inequality for consumer welfare.

In this paper, we analyze workers' beliefs about several important sources of uncertainty about their own labor market outcomes: on-the-job earnings growth and the risk of layoff and quitting. We examine how they differ across workers and types of jobs, how they evolve over the working life and business cycles, and how they covary with consumers' expectations about the economy and with personal experiences. To do so, we use a decade worth of monthly data from the New York Fed's Survey of Consumer Expectations (SCE), a monthly survey that collects rich data on a wide range of probabilistic expectations of consumers since June 2013.

Our results display substantial heterogeneity in reported subjective expectations and uncertainty and underscore the value of and the need for collecting subjective expectations data to help circumvent or inform assumptions about the way individuals form their expectations. We find that beliefs about future earnings growth shocks exhibit considerable asymmetry and indicate that individuals generally expect relatively small earnings shocks, but that they also assign a non-negligible probability to very large shocks. Male, younger, college-educated respondents, along with those working full-time, working in the private sector and those who are self-employed have significantly higher average year-ahead earnings growth expectations. Average earnings growth

uncertainty instead is significantly higher for female, younger, non-white, single respondents, and workers without a college degree, as well as for those working part-time, working in the private sector or self-employed. Earnings growth is found to be negatively, while earnings growth uncertainty is positively correlated with the perceived likelihood of both voluntary and involuntary job exits.

We find average expected earnings growth and earnings growth uncertainty to decline gradually over the working life. Underlying these changes is a gradual compression of individuals' density forecasts of year-ahead earnings growth as well as a convergence in the dispersion in density means. In contrast, average layoff risks are remarkably stable through the working life before rising slightly when workers reach their early 60s. Average quit probabilities, on the other hand, show a U-shaped pattern in age. These life-cycle patterns seem largely consistent with those for realized earnings growth and job separations as observed in the Current Population Survey (CPS), with the exception of layoff rates which follow more of a U-shaped pattern in the CPS.

Examining how expectations have evolved over the past 10 years, we find an initial drop in earnings growth expectations and average quit probabilities and a jump in the average perceived layoff risk at the onset of the pandemic. By 2021, we see a sharp rebound with earnings growth expectations exceeding, and layoff risks dropping well below, pre-pandemic levels. Interestingly, throughout the pandemic, earnings growth uncertainty remained remarkably stable showing only a small increase.

We again find patterns for earnings growth expectations over the business cycle to be largely in line with patterns in realized earnings growth data from the CPS. However, a comparison of expected and actual quit and layoff rates spotlights the largely unexpected nature of the pandemic recession and its aftermath: The surge in layoffs at the beginning of the pandemic was clearly unanticipated, while we find no significant rise in quit expectations presaging the 2021-2022 wave of resignations observed in the Job Openings and Labor Turnover Survey (JOLTS), indicating that these were often unplanned and spontaneous.

Our analysis shows that workers' perceptions of labor market risks covary with their subjective expectations about the economy. Revisions in earnings growth expectations have a positive, statistically significant relationship with revisions in year-ahead inflation expectations, but the association is fairly weak and indicates a relatively weak perceived pass-through of price to wage inflation. This finding is consistent with the relative stability of earnings growth uncertainty through the pandemic, despite sharp swings in realized and expected inflation and inflation uncertainty (Armantier et al., 2021; D'Acunto et al., 2022). This is also reflected in a weak, though statistically significant, estimated positive association between earnings growth uncertainty and inflation uncertainty. Earnings growth expectations are negatively associated with unemployment expectations, while positively associated with stock market and somewhat more strongly with home price expectations. Similarly, perceived layoff and quit risks are found to be positively associated with unemployment, stock market, and interest rate expectations, while layoff risks are negatively associated with home price growth expectations.

Relating within-person changes in earnings and employment expectations to personal experiences, we find a change in employer to be associated with small and statistically insignificant average increases in earnings growth expectations and earnings growth uncertainty, and with meaningful reductions in average layoff and quit risks. A job change with the same employer is instead associated with an average decline in expected wage growth and a decline in the probability of quitting within the next year. A switch from part-time to full-time status is associated with average declines in the perceived risks of layoff and quitting, while getting married reduces the risk of quitting.

The rest of the paper is organized as follows. Section 2 provides a brief discussion of related literature. Section 3 describes the SCE and the expectations measures we use in this study and document the cross-sectional heterogeneity across different demographic groups. Section 4 presents new evidence on the evolution of earnings growth expectations, earnings growth uncertainty, and perceived employment risks over the working life, while section 5 considers their evolution over the recent business cycle. This is followed by a panel data analysis in section 6 of the covariation of earnings growth and job separation expectations with macroeconomic expectations and with personal experiences. Section 7 concludes.

2   Related literature

A growing literature examines individuals' beliefs about the different sources of uncertainty they face in the labor market. This work has been facilitated by a rapid expansion in recent decades of high-quality household surveys, eliciting probabilistic expectations on a range of individual and household level outcomes and behaviors (Manski, 2004). Some of the research involving labor market expectations (such as Dominitz and Manski (1997a); Stephens Jr (2004); Campbell et al. (2007); Hendren (2017); Mueller et al. (2021)) was recently reviewed by Mueller and Spinnewijn (2023).[1] Empirical evidence shows job loss expectations to be lower for male, white and older workers, and workers with a college degree (Dominitz and Manski (1997a); Manski and Straub (2000); Guiso et al. (2002)). Studies of individuals' perceived earnings uncertainty generally report high average levels of uncertainty, but also substantial heterogeneity across individuals (Dominitz, 1998; Dominitz and Manski, 1997b; Bruine de Bruin et al., 2011). Regarding differences in subjective uncertainty across demographic groups, however, the literature is far from conclusive.[2] It is unclear to what extent these differences in findings across studies are due to differences in sample composition.

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[1]This handbook chapter also reviews some work relating job loss expectations to consumption behavior, both prior and after actual displacement, and to job search behavior and job-to-job transitions.

[2]Some studies find uncertainty to increase with educational attainment level (Dominitz and Manski, 1997b; Schweri et al., 2011; Bruine de Bruin et al., 2011), but Mazza and Hartog (2011) find no difference. Dominitz and Manski (1997b) and Mazza and Hartog (2011) find uncertainty to decrease with age, while Schweri et al. (2011) find it to increase in age. Mazza and Hartog (2011) observe that females perceive higher wage risk than males, but Dominitz (1998); Schweri et al. (2011) and Bruine de Bruin et al. (2011) report lower uncertainty for female respondents.

Still, relatively little is known about how earnings expectations evolve over the life-cycle and over time, which is the focus of our paper. Dominitz and Manski (1997b) and Dominitz (1998) analyze year-ahead income and year-ahead and 6-month-ahead earnings expectations from respondents in the 1993 and 1994 waves of the Survey of Economic Expectations, a national household survey.[3] Both studies find expectations, elicited in the form of densities, to vary in sensible ways with contemporaneous earnings realizations and with other individual attributes. Bruine de Bruin et al. (2011) examine subjective earnings uncertainty reported by respondents in RAND's American Life Panel and report considerable heterogeneity and persistence in individuals' perceptions of future earnings uncertainty.

In a study closely related to ours, Guiso et al. (2002) examine nominal earnings expectations and job loss expectations of respondents in the Bank of Italy's 1995 Survey on Household Income and Wealth (SHIW), a large representative sample of the Italian population, and compare job loss expectations in Italy to those by U.S. respondents in the Michigan Survey. They find higher earnings uncertainty among self-employed workers, lower uncertainty for older respondents, and marginally statistically significant higher uncertainty for the more educated, on average. Their analysis also indicates that workers with higher risk aversion sort into jobs with lower subjective earnings uncertainty.

In a recent paper complementary to ours, Caplin et al. (2023) link survey measures of subjective earnings risk collected in January 2021 in Denmark to administrative data for the same year. They find expectations about earnings growth and job transitions to be consistent with actual realizations when appropriately aggregated, but find average subjective earnings uncertainty to be lower than risk inferred from administrative data (based on moments of the cross sectional distribution of realized earnings growth) because of heterogeneity in expected earnings growth, even within narrow population groups.

Similar to Guiso et al. (2002) and Caplin et al. (2023), we examine distinct sources of labor market risks. Our measures of risk are based on uncertainty about future on-the-job wage growth and the risks of involuntary and voluntary job departures, and we do examine them for the U.S.[4] While we do not have access to linked administrative data, in our analysis we contrast our findings with data on realizations from the Bureau of Labor Statistics' CPS and JOLTS. Importantly, unlike the two previous studies which relied on cross-sectional expectations data, we have access to panel data collected between 2013 and 2023. In addition to an analysis of labor market uncertainty over the life-cycle, the panel structure enables us to examine changes in earnings growth expectations as well as subjective labor market uncertainty over the recent business cycle and

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[3]Dominitz (1998) also analyzed 6-month-ahead job loss probabilities collected in the Survey of Economic Expectations.

[4]While reported job quit probabilities capture a mixture of a primitive source of uncertainty (offer arrivals, exogenous layoff shocks) and behavior (accepting the offer or choosing to move to unemployment), in practice the distinction between job layoffs and quits can often be ambiguous. For example, in response to an advance notice of a future layoff, a worker may quit and switch to another job. Alternatively, a worker who was able to immediately find another job upon layoff may report that he/she left voluntarily. For this reason, we decided to include the risk of quitting in our analysis of perceived labor market uncertainty.

study how expectations co-vary with personal experiences and with beliefs about the economy.

Our analysis based on expectations data is influenced by the important and substantial body of work that has examined the variation in realized earnings and labor market outcomes across individuals and time, with the nature and evolution of earnings volatility being a particular focus. A recent study by Moffitt et al. (2022) represents an attempt to reconcile the seemingly disparate empirical evidence on recent trends in male earnings volatility observed in different data sets. They find that volatility increased during the period from the 1970s to the mid-1980s, but detect no clear trends since then. Another related area of economic research has focused on how earnings or wage uncertainty and dynamics affect consumption choices over the life cycle. Meghir and Pistaferri (2011) provide a comprehensive review of this research and highlight two important factors affecting consumption responses to income or earnings shocks: the perceived persistence of these shocks, and the extent to which they were anticipated. In a recent paper Wang (2023) and finds that a standard incomplete-market macroeconomic model calibrated on subjective expectations data on perceived income risks from the SCE is better able to explain the degree of wealth inequality compared to the standard approach of calibrating the model based on the objective (realized) income processes.

Finally, our work also relates to the literature on the predictability of earnings shocks, which has important implications for assessing the insurability and welfare effects of earnings uncertainty. In absence of subjective expectations data, one approach for assessing agents' ex ante beliefs and knowledge about future earnings growth and uncertainty is to infer these from observational data on choice decisions that depend on the information set of the agent (Blundell and Preston (1998); Blundell et al. (2008); Cunha et al. (2005); Cunha and Heckman (2008); Guvenen (2009); Guvenen and Smith (2014)). Direct elicitation of perceived earnings uncertainty and employment risks has important advantages, relying on fewer assumptions regarding rationality of beliefs and the insurability of risks. Perhaps most importantly, it allows analysis of beliefs that individuals either chose not to or were unable to act upon.

3 Data and heterogeneity analysis

3.1 Data

The analysis in this paper is based on data from the New York Fed's monthly Survey of Consumer Expectations (SCE). The SCE is a nationally representative, internet-based survey of a rotating panel of approximately 1,300 household heads. Since June 2013, the SCE Core Survey collects information on household heads' behavior as well as their expectations about a wide range of economic outcomes, both macroeconomic (such as inflation, home price changes, unemployment, credit access) and at the personal level (including household income and spending growth expec-

tations, credit applications and labor market behavior and outcomes).[5] Respondents participate in the panel for up to twelve months, with a roughly equal number of respondents rotating in and out each month. The rotating panel nature of the SCE allows researchers to analyze how expectations are revised over time and how these expectations link to outcomes and behavior.

A key feature of the survey is its reliance on a probabilistic question format to elicit the likelihood respondents assign to different future events. In addition to questions asking respondents for their *point forecasts* for several continuous outcomes, the survey also asks for *density forecasts*, that is, the likelihood the respondent assigns to different future possible values of that variable. In the case of earnings growth, for example, respondents are asked about the likelihood that future earnings changes will fall within different pre-specified intervals. These density forecasts allow us to assess respondents' uncertainty about future outcomes.

Our empirical analysis in this paper is based primarily on probabilistic expectations data collected monthly in the core module of the SCE. Our measure for earnings growth expectations is a density forecast based on the following question, asked to all respondents currently working, including the self-employed:[6]

Suppose that, 12 months from now, you are working in the exact same job at the same place you currently work, and working the exact same number of hours. In your view, what would you say is the percent chance that 12 months from now . . .

Your earnings on this job, before taxes and deductions, will have...

increased by 12% or more	_____	*percent chance*
increased by 8% to 12%	_____	*percent chance*
increased by 4% to 8%	_____	*percent chance*
increased by 2% to 4%	_____	*percent chance*
increased by 0% to 2%	_____	*percent chance*
decreased by 0% to 2%	_____	*percent chance*
decreased by 2% to 4%	_____	*percent chance*
decreased by 4% to 8%	_____	*percent chance*
decreased by 8% to 12%	_____	*percent chance*
decreased by 12% or more	_____	*percent chance*
Total	100	

Based on reported bin probabilities we compute each respondent's density mean (our measure of earnings growth expectations) and the interquartile range (IQR, our measure of earnings growth uncertainty) following the procedure described in Engelberg et al. (2009).[7] As we ask respon-

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[5]The SCE questionnaire design followed an extended testing and experimentation phase from 2006 to 2012 that included in-depth cognitive interviews, psychometric surveys and various pilot surveys. This testing phase is documented in Van der Klaauw et al. (2008) and Armantier et al. (2017).

[6]For those working in multiple jobs the question asks about their main job, defined as the job at which the respondent usually works the most hours.

[7]We assume the underlying distribution to belong to the generalized beta family when the respondent assigns posi-

dents to condition on staying in the same job, our measures of expected earnings growth can be interpreted as capturing expectations about on-the-job wage growth.

We measure employment expectations by eliciting the perceived risk of job loss and the probability of (voluntary) quitting. More specifically, to elicit layoff expectations, those currently working and not self-employed are asked:

> *What do you think is the percent chance that you will lose your ["main"/"current"] job during the next 12 months?*

Similarly, probabilistic expectations about quits are elicited from the same sample by asking:

> *What do you think is the percent chance that you will leave your ["main"/"current"] job voluntarily during the next 12 months?*

For both of these questions, asking for the probability of a future job loss or quit, we allow respondents to either enter a number, or click anywhere on a sliding scale from 0% to 100%.[8]

TABLE 1: Summary Statistics

	Mean	Median	Std. Deviation	Observations
Expected year-ahead earnings growth (%)	3.12	2.50	4.91	99,722
IQR of year-ahead earnings growth (%)	3.46	1.55	4.44	99,722
Density skewness v1: $\frac{(p75-p50)}{p50-p25}$	1.03	1.00	0.17	99,722
Density skewness v2: $\frac{(p90-p50)}{p50-p10}$	1.08	1.00	0.34	99,722
Density skewness v3: $\frac{(p95-p50)}{p50-p5}$	1.12	1.00	0.47	99,722
Likelihood of a layoff (%)	13.85	5.00	19.63	90,004
Likelihood of a quit (%)	19.86	10.00	25.68	89,329
% White	0.83	.	.	99,722
% Female	0.48	.	.	99,687
% Married	0.67	.	.	99,722
Age	44.59	45.00	11.23	99,722
% Has child under age 6	0.17	.	.	99,722
% College graduate	0.41	.	.	99,701
% Working FT	0.84	.	.	99,722
% Self-employed	0.11	.	.	98,204
% Working for government	0.35	.	.	19,301
Annual earnings ($ 1000)	60.66	49.50	44.70	20,197
Tenure at current job (years)	8.54	5.25	8.95	21,302

Note: Likelihood of layoffs and quits are over the subsequent 12 months. Note that the quit and layoff expectations are only elicited from those not self-employed. The share of respondents working for the government, annual earnings and the tenure at current job are measured in the SCE Labor Market survey, which is fielded every 4 months. For this reason, the observation numbers for these variables are lower than the observation numbers of the other variables in the table.

Table 1 reports summary statistics for our pooled sample of monthly data covering June 2013 to December 2023. The average year-ahead expected earnings growth (measured by the average of

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tive probability to three or more outcome intervals. We assume an isosceles triangular distribution when the respondent puts all probability mass in two intervals and a uniform distribution when the respondent puts all probability mass in one interval. Once fitted, the estimated density parameters are then used to compute each individual respondent's density mean and density IQR. For further details see Armantier et al. (2017).

[8]To prevent respondents from anchoring their response, no marker appears on the scale until the respondent clicks somewhere on it.

individual density means) is 3.1%, while the median equals 2.5%. The data exhibit large dispersion in expected earnings growth and considerable average individual uncertainty as measured by the average of individual-level density IQR. The average skewness measures point to an asymmetry in the expected earnings growth density, showing a slight positive skew. This is also apparent in the average bin probabilities shown in Figure 1, which reveals a notable average likelihood of 6.1% assigned by respondents to a greater than 12% earnings increase and an average probability of 4.7% to a decline by 4% or more. This finding is consistent with evidence reported by Geweke and Keane (2000) and Guvenen et al. (2021), which reveal the distribution of realized earnings shocks to be non-Gaussian with a high kurtosis; with most individuals experiencing very small earnings shocks and a small but non-negligible number experiencing very large shocks. In terms of risks of layoff and quits, respondents assign an average of 13.9% and 19.9% to the probability that they will leave their jobs involuntarily, and voluntarily, respectively, within the next 12 months. Again we see considerable dispersion in the reported likelihoods.

FIGURE 1: Average Likelihood Assigned to Each Bin in Earnings Growth Density Forecasts
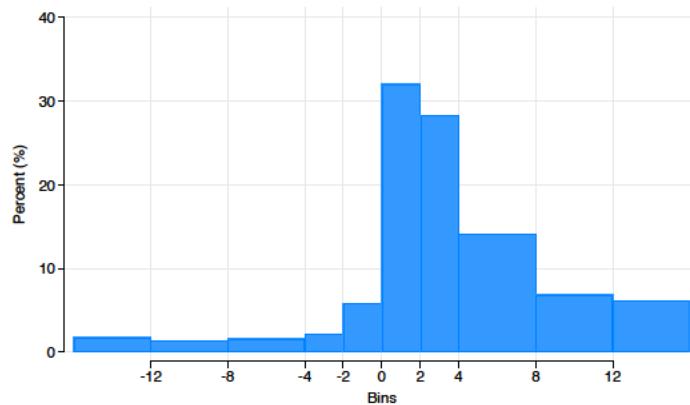
How do the average expectations reported in the SCE compare to official statistics on annual wage growth and layoff and quit rates? To compute wage growth measures we draw on the monthly CPS. It is not possible to compute the exact same average on-the-job earnings growth measure in the CPS as defined in the SCE, conditional on working in the exact same job and the exact same number of hours.[9] Instead we measure it as the average annual earnings change for individuals who are still employed with the same work status (part-time or full-time).[10] The median annual earnings growth measured this way during the June 2013-December 2023 period was 3.1%, somewhat above the median of 2.5% reported in Table 1.[11]

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[9]CPS interviews the respondents for 4 months, then gives an 8 month break and interviews them again for 4 more months. The earnings information are only elicited at survey months 4 and 8, which are 12 months apart. Moreover, the information on whether the respondent is still employed by the same employer is missing in the CPS after the 8 month break.

[10]The trends documented in the paper are largely the same if we further restrict our measure to those working in the same industry and occupation, except near ages 25 and 65 where sample sizes for computing earnings changes become considerably smaller.

[11]We follow Daly et al. (2012) and focus on median wage growth in the CPS as we found the mean to be highly

For quits and layoffs, we first turn to the JOLTS data, based on approximately 21,000 businesses in the US, covering over 95% of jobs. Monthly JOLTS data for the same June 2013-January 2023 period, imply average annual non-farm layoff and quit rates of respectively, 15.3% and 27.1%. [12] In case of the CPS we compute monthly transition rates among those who were employed in the previous month. The layoff rate is computed as the fraction currently unemployed and reporting that they were laid off. The quit rate is defined as the fraction currently unemployed and reporting that they quit, plus the fraction currently out of the labor force. Note that both measures omit job-to-job transitions that do not include at least one month of non-employment. This implies that the CPS measure of the layoff rate will likely be an underestimate of the true layoff rate. Also, the quit rate treats all exits out of the labor force as quits.

Computed this way, the CPS yields an average annual layoff and quit rate of 7.9% and 20.1%, respectively. While there are some differences between the way these measures are constructed across the three data sets in addition to differences in the worker populations between the SCE, JOLTS and CPS, these average annual rates line up reasonably well with the average subjective layoff and quit probabilities of, respectively 13.9% and 19.9%, reported in Table 1. The details about the CPS and JOLTS definitions and the measures constructed are included in Online Appendix A.

Finally, Table 2 shows simple pairwise correlations between our main expectations measures. They reveal expected earnings growth and earnings growth uncertainty to be positively correlated, while expected earnings growth is negatively correlated with the reported likelihood of an involuntary job exit. Earnings growth uncertainty is positively correlated to the likelihood of a layoff or quit, while the two types of job exit risk are fairly strongly positively correlated.[13]

TABLE 2: Correlation Matrix of Earnings Growth Expectations and Employment Risk Measures

	Exp. year-ahead earnings gr.	IQR of exp. year-ahead earnings gr.	Likelihood of a layoff	Likelihood of a quit
Exp. year-ahead earnings gr.	1.00	.	.	.
IQR of exp. year-ahead earnings gr.	0.15***	1.00	.	.
Likelihood of a layoff	-0.11***	0.09***	1.00	.
Likelihood of a quit	-0.02***	0.04***	0.35***	1.00

Note: The table shows the pairwise correlation coefficients between the main expectation measures used in the analysis. In Appendix Figures B1-B4 we portray these pairwise relationships in more detail through binscatter plots. The observation numbers of the variables are included in Table 1.

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sensitive to large outliers.

[12]Without the March 2020 spike in the layoff rate, the average annual layoff rate was 13.8%, and excluding the surge in quits during 2021 and 2022, the average quit rate was 22.8%.

[13]Dominitz (1998) similarly reports job loss risk to be negatively (positively) associated with expected earnings growth (earnings uncertainty).

3.2 Heterogeneity analysis

Considering the heterogeneity in perceived labor market risks, Table 3 shows the average expected year-ahead earnings growth to be significantly higher for male, younger, college-educated and married respondents, workers with a young child, and those working full-time, working in the private sector or self-employed. In Table B1 we relate expected earnings growth to all characteristics simultaneously, together with a few additional controls from the SCE Labor Market survey, including current annual earnings and tenure at the current job as well as region and year fixed effects. We find that with the exception of having a young child and being married, all differences remain statistically significant. We also find average expected earnings growth to be larger for higher earning respondents, and for respondents with lower job tenure.

Average earnings growth uncertainty measured by the density IQR are significantly higher for female, younger, non-white, single respondents, and those without a college degree, as well as for those working part-time, working in the private sector or self-employed. These differences again remain when controlling for all worker and job characteristics jointly in a regression (estimates shown in Table B1).[14] We also find earnings growth uncertainty to be negatively correlated with the level of current earnings and with job tenure.[15]

When considering density skewness, which correlates strongly with the likelihood of a substantial earnings increase, we find male, white, college educated and younger workers and those not self-employed to exhibit more positive skewness in their earnings growth densities. These differences are robust to controlling for other characteristics, and we also find higher skewness for respondents with lower job tenure.

TABLE 3: Expected Earnings Growth and Employment Risk for Different Demographic Groups

	Exp. Year-Ahead Earnings Gr.	IQR of Exp. Year-Ahead Earnings Gr.	Density Skewness v3	Likelihood of a Layoff	Likelihood of a Quit
Overall	3.12	3.46	1.12	13.85	19.86
Female	2.91***	3.61***	1.11***	13.85	20.40***
White	3.11*	3.12***	1.12***	13.46***	19.38***
Married	3.15***	3.25***	1.12**	13.09***	18.74***
College graduate	3.36***	2.86***	1.14***	13.37***	22.35***
35< Age ≤45	3.17***	3.62***	1.13***	13.70***	18.87***
45< Age ≤55	2.80***	3.22***	1.09***	13.69***	17.02***
55< Age ≤65	2.65***	3.11***	1.09***	14.98***	18.74***
Has child under age 6	3.49***	3.64***	1.15***	12.68***	19.47**
Working FT	3.20***	3.24***	1.12	12.98***	19.04***
Self-employed	4.37***	5.58***	1.09***		
Working for government	2.64***	2.79***	1.12	10.65***	17.58***

Note: The stars shows the significance of pairwise tests for equality of means between the group that is shown and the opposite, mutually exclusive group. For age groups, the tests are against the "below age 35" group. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Interestingly, we generally see similar demographic patterns for layoff risk as we see for earn-

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[14]Dominitz (1998) also finds higher perceived earnings uncertainty for self-employed individuals.

[15]Moffitt et al. (2022) similarly report higher levels of *realized* earnings volatility at lower earnings levels.

ings growth uncertainty. Average reported layoff risks are significantly higher for respondents who are non-white, single, not college-educated, and working part-time and working in the private sector. Layoff risks are lower for those with a child under age 6 and are negatively correlated with current earnings and with job tenure. When controlling for all covariates jointly, layoff risk is positively associated with having a college degree. Meghir and Pistaferri (2004) find that more educated workers face higher overall realized labor income risks. Our evidence on perceptions of earnings risks suggest that the higher labor income risk among college educated may be driven by higher employment risk and job mobility rather than higher on-the-job wage growth uncertainty.

Finally, turning to heterogeneity in reported quit probabilities in Table 3, we find patterns very similar to those for layoff probabilities, except for a higher quit probability for those with a college degree and a lower quit probability for the respondents between ages 55 and 65. Like average layoff risk, regression results indicate that the risk of quitting is negatively correlated with current earnings, and job tenure (see Appendix Table B1).[16]

One may wonder about the extent to which differences in labor market risks across workers are related to the level of non-wage benefits on the job. We investigate this in Table 4 by relating our measures of expected earnings growth and layoff and quit risks to a set of non-wage benefits measured in our SCE Labor Market survey. We find the employer provision of health and dental insurance and of commuter benefits to be positively related to earnings growth expectations, and find employer provided benefits to be largely negatively correlated to wage growth uncertainty and to the perceived risk of a voluntary or involuntary job departure over the next 12 months. Although these estimates cannot be interpreted as causal, they are inconsistent with non-wage benefits serving as compensation for slower earnings growth, increased uncertainty and job exit risks, and instead suggest that jobs with better non-wage benefits also tend to have lower perceived labor market risks.

Before moving to a deeper analysis of the SCE measures of perceived labor market risks, it is instructive to discuss some available evidence on their validity. First, as already noted earlier, average expected earnings growth and layoff and quit probabilities line up reasonably well with actual earnings growth and layoff and quit rates in the CPS and JOLTS. Second, as reviewed and further analyzed by Mueller and Spinnewijn (2023), who exploited the panel aspect of the SCE, some of the survey measures of labor market risks we analyze in this paper have been found to be predictive of future outcomes. Namely, realized quit and layoff rates have been found to be higher for those with higher reported probabilities of such events in the three months prior. Similarly, Dominitz and Manski (1997a); Stephens Jr (2004) and Campbell et al. (2007) find job loss expectations to be predictive of realizations in the Survey of Economic Expectations, the Health and Retirement Survey, and the British Household Panel Survey, respectively.[17]

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[16]The fact that many of the same factors positively correlated with layoff risk are also positively correlated with the risk of quitting is consistent with some possible ambiguity in classifying the nature of a job departure.

[17]In addition, Dominitz (1998) provides evidence that earnings expectations in the SEE are predictive of earnings realizations. Mueller et al. (2021) show that probabilistic expectations about future labor market transitions are strongly predictive of actual transitions, specifically from unemployment to employment. Using the SCE, Conlon et al. (2018)

TABLE 4: Perceived Labor Market Risks and Non-wage Benefits

	(1) Exp. Year-Ahead Earn. Gr	(2) IQR of Exp. Year-Ahead Earn. Gr	(3) Density Skewn. v3	(4) Pr(Layoff)	(5) Pr(Quit)
Defined benefit plan	0.12	-0.10	-0.02**	-2.17***	-2.14***
	(0.10)	(0.10)	(0.01)	(0.39)	(0.53)
Employer contributes	0.27**	-0.03	0.00	-2.58***	-2.84***
to ret plan	(0.11)	(0.11)	(0.01)	(0.47)	(0.61)
Health or Dental	0.16	-0.44**	-0.02	-1.44*	-0.72
Ins.	(0.17)	(0.18)	(0.02)	(0.78)	(0.92)
Flex spend acct	-0.17	-0.26***	0.00	0.09	-0.17
	(0.10)	(0.10)	(0.01)	(0.43)	(0.56)
Housing subs	0.15	-0.03	-0.03	0.33	-4.21***
	(0.34)	(0.23)	(0.02)	(1.70)	(1.40)
Life or disab. ins	-0.16	-0.40***	-0.01	-0.78*	0.37
	(0.12)	(0.12)	(0.01)	(0.46)	(0.60)
Commuter benefits	0.26***	-0.20**	-0.00	0.64	1.20**
	(0.10)	(0.08)	(0.01)	(0.42)	(0.60)
Child care	0.13	0.17	0.01	-1.67***	-3.15***
assistance	(0.12)	(0.12)	(0.02)	(0.51)	(0.76)
Dep. Var. Mean	3.00	3.04	1.12	13.37	19.65
R^2	0.03	0.08	0.01	0.05	0.06
Observations	18,060	18,060	18,060	18,217	18,220

Note: Density skewness v3 refers to $\frac{(p95-p50)}{p50-p5}$ of the earnings growth expectations (density means) in the sample. All regressions control for demographics, Census region dummies and year dummies. Demographic controls include dummies for being female, white, married, having a child under age 6, college graduate, working full-time as well as age group dummies, log annual earnings, job type (government vs private sector) and tenure at the current job. Robust standard errors are in parentheses.* $p <$ 0.1, ** $p < 0.05$, *** $p < 0.01$.

As additional evidence of the credibility of our earnings growth uncertainty measure, we relate the earnings growth density IQR to a different but related measure available for some SCE respondents: their self-reported monthly household income variability. Respondents in the triannual SCE Household Spending survey are asked about the monthly variability in their household income, whether it on average varies month-to-month by less than 5%, between 5% and 15%, or by more than 15%. Table 5 shows that those who describe their income as more variable report significantly higher average earnings growth uncertainty, as well as higher average expected year-ahead earnings growth.

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show that the expected number of offers over the next 4 months is positively correlated with the actual number of offers received 4 months later. They also find a high and significant positive correlation between the expected and actual salary of offers.

TABLE 5: Household Income Variability and Earnings Growth Expectations

How much does your hh income change from month to month ..	Avg Year-Ahead Exp. Earnings Growth	Avg Year-Ahead Earnings Growth Uncertainty
Vary by less than 5%	2.99	2.83
Vary between 5% and 15%	3.37***	5.08***
Vary by more than 15%	3.82***	5.79***
Observations	17,175	17,175

Note: The stars shows the significance of pairwise tests for equality of means against the "Vary by less than 5%" group. $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$. Household income variability question is included in the SCE Household Spending Survey, which is fielded every 4 months.

4 Earnings growth and employment expectations over the career life-cycle

4.1 Life-cycle earnings growth expectations

We start our life-cycle analysis by pooling our monthly data from June 2013 to December 2023 and computing the average earnings growth expectations (represented by individual density means) by age. Binscatter regression estimates shown in Figure 2 show a more or less monotonically declining expected level of on-the-job wage growth, from an average level around 4% annually at age 25 to about 2% at age 65.[18] As indicated by the 25th and 75th percentiles of density means, there is considerable heterogeneity across workers in their expected earnings growth, especially at younger ages, where about a quarter of workers expect year-ahead on-the-job wage growth of at least 6%, while another quarter of respondents expects earnings growth less than 1%. At older ages this measure points to much lower levels of disagreement between respondents. These results are robust to adding controls for individual characteristics including education, race, gender, presence of a child under age 6, annual household income, self-employment, and the Census region of residence. Mean residuals from a regression of expected on-the-job wage growth on these characteristics, shown in Figure B7 of the Appendix, show very similar patterns as those in Figure 2. Interestingly, while the panel component of our data is limited to at most 12 monthly observations, within-person panel variation also indicates earnings growth expectations to decline with age.[19]

The life-cycle pattern of workers' uncertainty about on-the-job wage growth, as measured by the density IQR, is shown in Figure 3a. Binscatter estimates reveal a sharp decline in average worker uncertainty in their late twenties, followed by a more gradual decline until age 55 after which it stabilizes.[20]

More insight into this pattern of declining uncertainty with age is provided in Figure 3b which

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[18]Binscatter regression estimates were obtained using the Stata package binsreg, based on the methods developed by Cattaneo et al. (2023). Also shown in the figure are confidence bands.

[19]When including age (measured in months) and individual fixed effects in the regression, the estimated coefficient on age is negative and statistically significant at the 1 percent level.

[20]Sabelhaus and Song (2010) find a similar decline with age in realized annual earnings volatility.

FIGURE 2: Average Earnings Growth Expectations over the Life Cycle
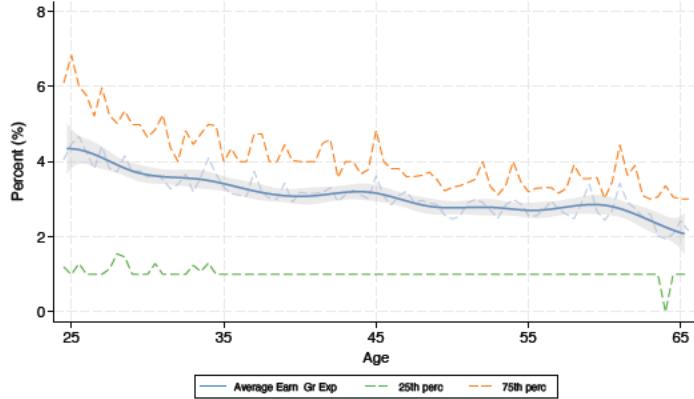

FIGURE 3: Earnings Growth Uncertainty over Working Life

**(A)** Average Uncertainty **(B)** Tail Probabilities
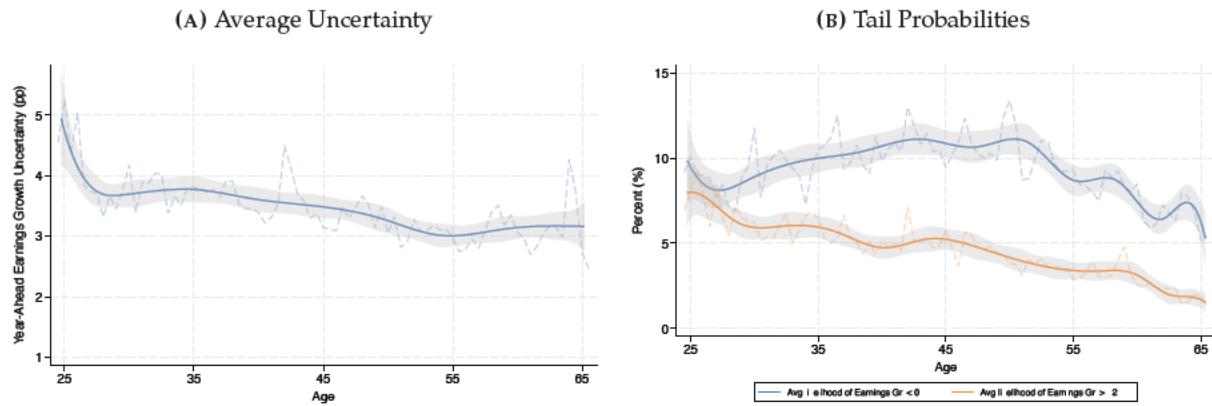
shows the average probability workers assign to a decline in earnings over the next year and the average probability of an earnings increase over 12% over the same time horizon. The former shows a relatively stable perceived risk of a wage cut, increasing only slightly from just under 10% to about 12% at age 50, after which we see a decline to approximately 7% at age 65. In contrast, the average probability of a large rise in earnings declines steadily with age, falling from about 8% at age 25 to 2% at age 65.

These trends suggest that the decline in uncertainty with age is driven mostly by a thinning of the upper tail of the year-ahead wage growth distribution.[21] This is confirmed in Figure 4 which shows the average year-ahead wage growth density, sometimes also referred to as the aggregate or "consensus" density, obtained by averaging the individual densities. The figure shows a gradual compression of the distribution due to a shrinking right tail. The associated decline in the variance of the average density can be decomposed into a change in the average uncertainty about future earnings growth and a change in disagreement, measured by the variance of the density means

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[21]The trends in uncertainty and in tail probabilities are again robust to controls for observable characteristics. See Figures B8a and B8b in the Appendix.

(Giordani and Söderlind, 2003; Bassetti et al., 2023).[22] This decomposition in our case indicates that 52% of the overall compression of the average density was due to a reduction in average uncertainty. Interestingly, a similar thinning of the upper tail of the year-ahead wage growth distribution has also been found in realized earnings growth data: Guvenen et al. (2021) report a decline in the right tail with age.

FIGURE 4: Aggregate Earnings Growth Density over Working Life
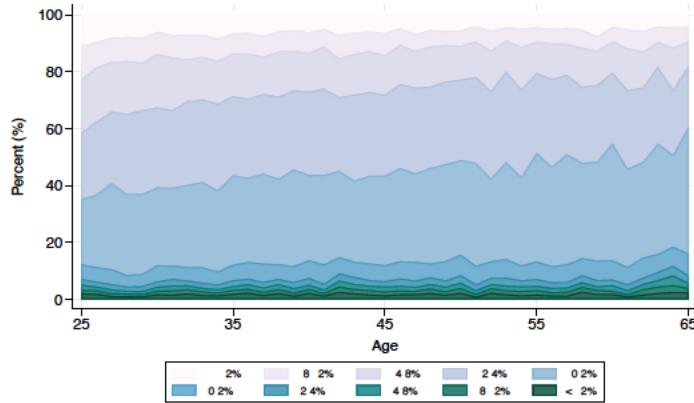
When distinguishing between different subgroups of workers, we generally see the same pattern of earnings growth expectations declining with age. However, there are some noticeable differences in levels. Panels a and b of Figure 5 show the evolution of wage growth expectations over the life-cycle by gender and education. Male and college-educated respondents report significantly higher earnings growth expectations at younger ages, while they are comparable to their counterparts for those in their mid-forties or older. Some readers may consider the gap in expected earnings growth between college and non-college educated workers to be smaller than expected. It is important to remember that we measure expected earnings growth conditional on continued employment. As we will see later, those without a college degree face higher layoff risk, so when computing a perceived layoff-adjusted measure of earnings growth risk we find the college gap to be about double that in panel b of Figure 5.[23]

Differentiating by earnings levels and job tenure, we find somewhat higher wage growth expectations up to age 50 by those with above median annual earnings, but the differences are not statistically different.[24] Corresponding charts for these splits, as well as others that we discuss next, are shown in Appendix Figure B5. Similarly, we see somewhat higher wage growth expecta-

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[22]The variance of the consensus forecast (or "aggregate uncertainty") is equal to the sum of the average (individual) uncertainty (as measured by the density variance, instead of the density IQR) and disagreement among forecasters (as measured by the variance of their density means).

[23]See Appendix Figure B6. We define the individual-specific layoff-adjusted measure of expected earnings growth as the product of the expected on-the-job wage growth and the probability of not being laid off plus the expected loss in earnings associated with unemployment (based on the replacement rate) times the perceived risk of layoff. Note that while insightful, this is an incomplete measure of overall expected earnings growth. Such a measure would require, among others, expectations of earnings changes associated with job transitions. See Caplin et al. (2023) for an effort to compute such a more comprehensive measure of expected earnings growth measure.

[24]Note that, throughout the paper for the heterogeneity cuts by earnings levels, job tenure, and job type (government

FIGURE 5: Heterogeneity in Expected Earnings Growth over the Working Life

(A) By gender

(B) By education
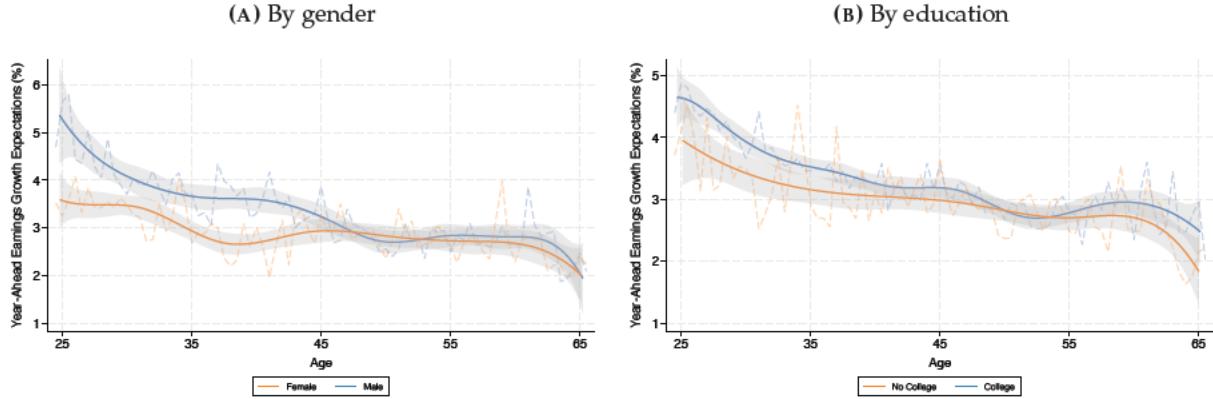
tions throughout the life cycle for those with less than the median job tenure (5.25 years) compared to those with longer tenure levels, but the difference again is not statistically significant. When distinguishing by self-employment status and whether the respondent works in the government or private sector, we find earnings growth expectations to be significantly higher for self-employed workers throughout the life cycle and are also somewhat higher for those working in the private sector, but the difference in the latter is not statistically significant.[25]

Figure 6 presents similar heterogeneity analysis by several worker and job characteristics, but this time for earnings growth uncertainty. Differentiating first by gender, while largely similar, we see a temporary increase in wage growth uncertainty among female respondents during their early forties (see panel a). Wage growth uncertainty is significantly higher for those without a college degree, and for those with below-median levels of earnings, as shown in panels b and c of Figure 6, respectively. We also find much higher wage growth uncertainty for the self-employed (shown in panel d) but see no statistically significant differences by job type and job tenure (see Appendix Figure B10).

When controlling for other observable worker characteristics, these life cycle patterns and differences largely remain, except for the disappearance of the temporary increase in wage growth uncertainty for female respondents in their forties (see Appendix Figure B11). Upon further examination we found that this was largely due to controlling for the presence of a child under age 6. Thus, the increase during the late 30s/early 40s in wage growth uncertainty among female respondents appears to be children-related.

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vs private sector), we use local polynomial smoothing with confidence intervals instead of binscatter regressions. This is because these variables are included in the SCE Labor market module and thus, have a triannual frequency.

[25]These findings regarding the heterogeneity in life cycle expected earnings growth are largely robust to controlling for other worker characteristics, as seen in plots of average residuals in Figure B9 in the Appendix.

FIGURE 6: Heterogeneity in Earnings Growth Uncertainty over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By self-employment
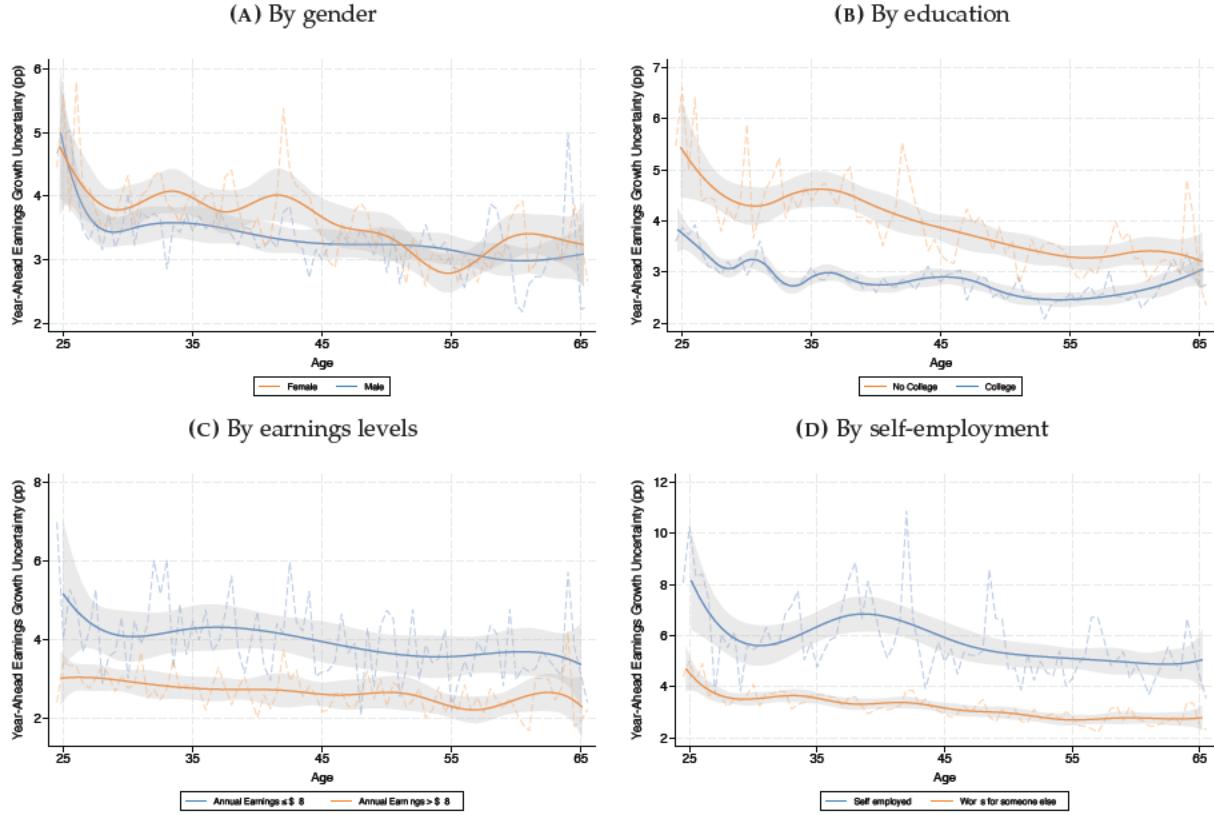
4.2 Life-cycle employment expectations

Binscatter regression estimates of job loss and quit rate expectations, shown in Figure 7, reveal a remarkably steady average probability of layoff (over the next 12 months) of around 14% over the life cycle until about age 55 after which the rate increases slightly to about 17%. The average reported quit probability instead shows a U-shape pattern, declining from about 27% at age 25 to about 16% between age 45, and rising from 16% at age 55 to about 28% at age 65. These patterns are again robust to controlling for composition changes with respect to a number of demographic variables (see Figure B12).

Comparing life-cycle patterns in layoff risk by earnings levels and employment sector, we find considerably higher average layoff risks reported by those with below-median earnings and by those working in the private sector (see panels a and b in Figure 8). While average layoff risks remain relatively constant over most of the working life in both sectors, those working in the private sector on average report a 4% higher annual layoff risk, compared to those in the government sector. When differentiating by gender and education we find largely comparable patterns, except for a generally higher layoff risk reported by those without a college degree at younger ages. Corresponding charts for these splits, as well as others that we discuss next, are shown in Appendix Figure B13. We also find lower layoff expectations for those with above-

FIGURE 7: Likelihood of Layoff and Quit over the Working Life
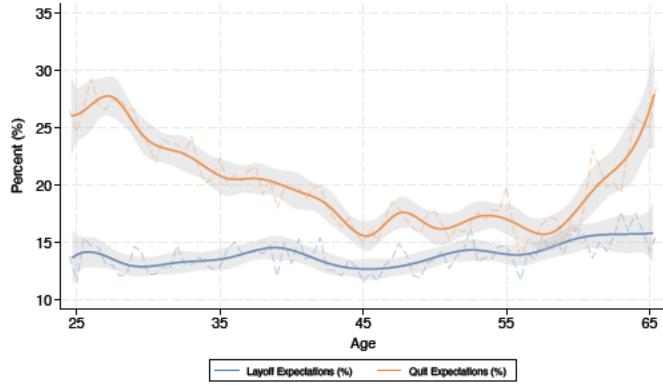
median job tenure levels. As before, patterns for average residuals from a regression controlling for other worker and job characteristics are very similar (see Appendix Figure B14).

FIGURE 8: Heterogeneity in Layoff and Quit Expectations over the Working Life

(A) Layoffs by earnings levels

(B) Layoffs by Job Type

(C) Quits by education

(D) Quits by job tenure
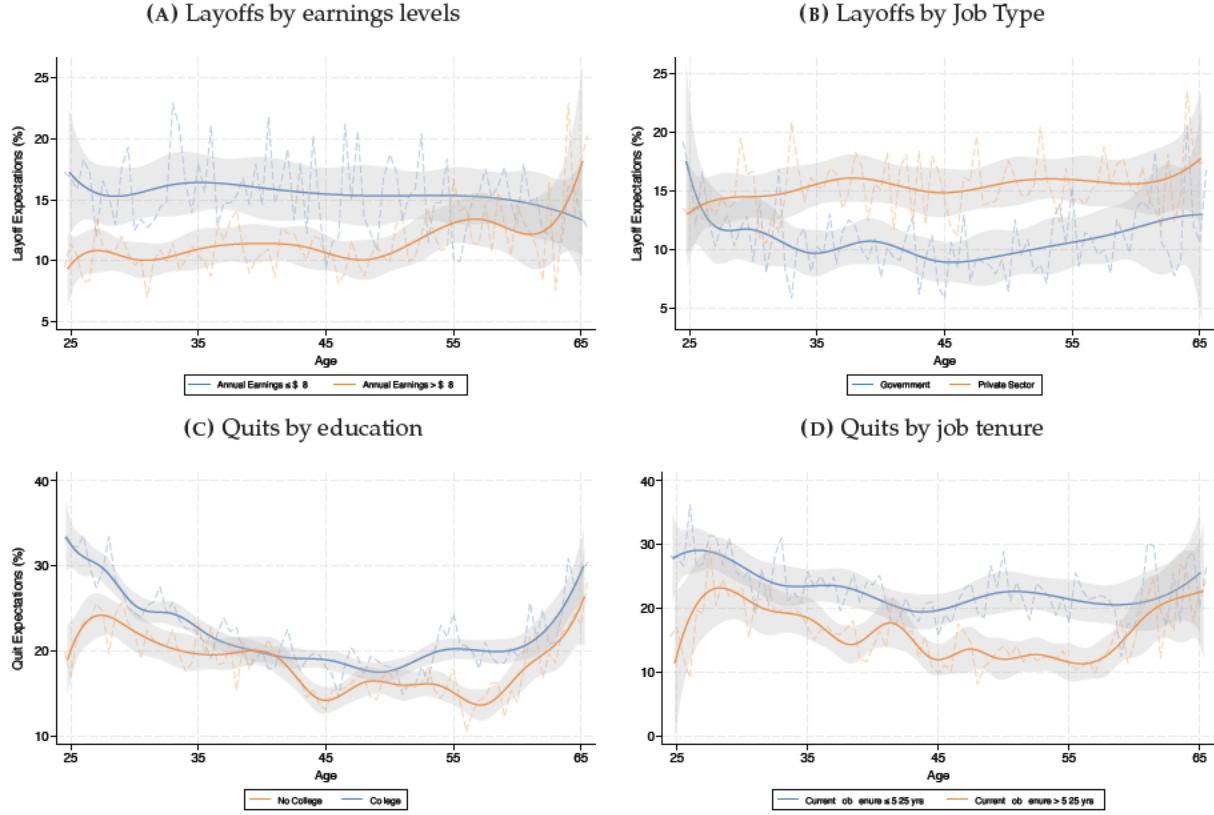
The U-shaped pattern of quit expectations over the working life is similar across worker characteristics, but as shown in panels c and d of Figure 8, average probabilities of leaving the job voluntarily over the next 12 months are significantly higher for those with a college degree and for those with below-median job tenure through most of the working life. They are also slightly

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higher for female respondents up until age 45, after which they follow a similar gradually increasing trend with male respondents approaching retirement ages. Corresponding charts for these and other splits are shown in Appendix Figure B15. We find average quit probabilities to be significantly higher for those with below median-earnings and for those working in the private sector, but the latter difference is not statistically significant.[26]

4.3 Comparison to realized life-cycle earnings growth and employment separations

How do the life-cycle patterns for expectations about wage growth and job exits compare to actual life-cycle experiences? To investigate this we draw again on data from the CPS. Despite differences in measurement discussed earlier in section 3, life cycle changes generally line up well with those in subjective expectations data. CPS data show that similar to average wage growth expectations, median actual annual on-the-job earnings growth declines gradually with age (see panel a of Figure 9). Note that the CPS measure of earning growth exceeds that for average expected earnings growth at younger ages. This likely reflects the fact that the CPS measure does not condition on staying in the same job and could capture earnings gains associated with job-to-job transitions, which are more frequent at younger ages.

FIGURE 9: CPS Earnings and Employment Changes over the Working Life
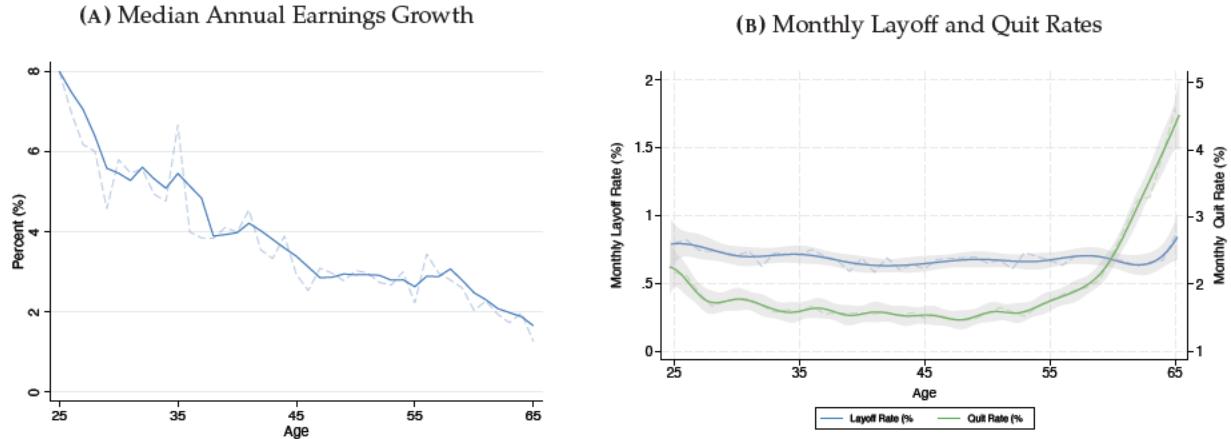
(A) Median Annual Earnings Growth

(B) Monthly Layoff and Quit Rates

Note: The figures use data from IPUMS CPS, University of Minnesota, for the years between January 2013 and December 2023. The details of the construction of the series displayed in the figures are included in Online Appendix A. The left panel shows the 3-month moving average of the median annual earnings growth series while the right panel shows the binscatter regression estimates Cattaneo et al. (2023) for the average monthly layoff and quit rates.

Examining changes in layoff and quit rates over the life cycle, monthly layoff rates shown in panel b of Figure 9 show a relatively stable layoff rate until the mid 60s when it shows a small increase. This pattern is similar to that shown earlier for layoff expectations in section 4.2. Monthly realized quit rates show a U-shaped pattern, declining gradually between ages 25 to 45, increasing sharply from age 60 to 65. This pattern is again roughly consistent with that shown earlier in

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[26]Patterns for average residuals from a regression controlling for worker and job characteristics are shown in Apendix Figure B16.

Figure 7 for average quit expectations, except that the observed sharp rise in quit rates close to retirement age is much higher in the CPS. The smaller increase in the SCE may reflect the fact that the workers whose quit expectations we measure at older ages become increasingly selective towards individuals expecting to retire at much older ages or not at all.

When differentiating by demographic characteristics the CPS data show patterns similar to those documented earlier for SCE expectations: earnings growth at younger ages is higher for males and those with a college degree, and earnings growth is also higher for higher-earning workers. Also comparable to expectations, we find higher realized layoff rates for workers without a college degree, with below median earnings and those working in the private sector, while we find higher quit rates for female, lower earning, and private sector workers. We find two dimensions in which the SCE and CPS data differ. Unlike in the SCE we find no evidence of higher wage growth for private sector workers, compared to government workers, except early in the working life. Second, the CPS data show college educated workers to have lower quit rates, while we earlier found these workers to have higher average quit expectations. This is likely due to the way we define quits in the CPS as we only include quits to unemployment or to out of the labor force.

In summary, despite some differences in measurement, life-cycle patterns in CPS data seem largely consistent with those observed in SCE earnings growth and job separation expectations.

5 Earnings growth and employment expectations over the business cycle

5.1 Earnings growth expectations over the business cycle

How do perceived earnings growth and employment risk vary over the business cycle? We next consider expectations reported in the SCE since 2013, during the 2010s economic expansion and through the pandemic recession. Recall that the monthly sample of SCE respondents constitutes a nationally representative sample of the U.S. adult population. Furthermore, because it constitutes a rotating panel, month-to-month variation largely represents changing beliefs reported by the same individuals.

Figure 10 shows the initial rise and stabilization of average expected annual earnings growth leading up to the onset of the pandemic at which point earnings expectations first decline sharply, but then recover to pre-pandemic levels by the end of 2021. Since then, while the rate of inflation and median inflation expectations surged to levels above 9% and 6%, respectively, nominal annual wage growth expectations have increased only modestly to just above 3.5%. Interestingly, since June 2013 some 25% of respondents have reported expected annual earnings growth (density means) below 1% each month. In contrast, the 75th percentile indicates that while about a quarter of respondents reported expectations at or above 4% during 2020, by mid-2022 a quarter of respondents reported earnings growth expectations above 5%. This business cycle pattern is

FIGURE 10: Expected Earnings Growth over the Business Cycles
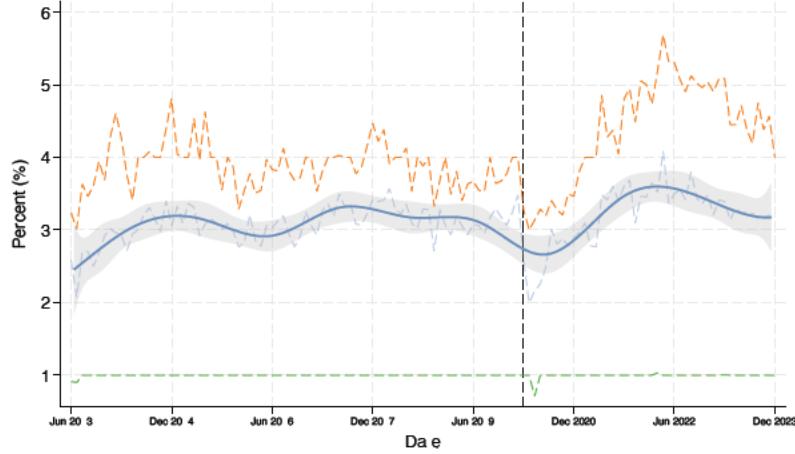
again robust to controlling for composition changes with respect to a number of worker characteristics (see Appendix Figure B17). As recessions usually imply large changes in the composition of the work force, with manual workers and Black, female and lower-educated workers typically experiencing greater job losses, this robustness may be somewhat surprising. However, it is in line with the fact that the pandemic recession was unusual, hitting especially workers in service industries and occupations requiring much social contact. Consequentially, the unemployment gap between different education and racial groups did not increase as much as one would have expected based on previous recessions.

We find the general evolution of average earnings growth expectations to be broad-based across worker and job characteristics, although as shown in panels a and b of Figure 11, levels generally are somewhat higher for male and college-educated respondents. We also find them to be higher for those with low job tenure, working in the private sector or self-employed (see Appendix Figure B18). Interestingly, the 2022 increase in average earnings growth expectations appears to be driven mostly by those in higher earning jobs. Patterns for average residuals from regressions controlling for the respondent's gender, race, having a college degree, having a young child, household income category dummies, Census region dummies, and age group dummies are very similar (see Figure B19).

Turning next to wage growth uncertainty, Figure 12a depicts the evolution of average earnings growth uncertainty, as captured by the average density IQR, since mid-2013. Average uncertainty has remained remarkably flat over this period, only showing a minor increase during the pandemic. This result is striking given the increase in overall uncertainty about the pandemic's impact on the economy as well as the initial decrease in expected wage growth and the subsequent rebound. However, as shown in Figure 12b the relative stability of the IQR masks considerable movements in the average probability respondents assign to the extreme left tail of the earnings growth distribution. In particular, during the mid 2010s, the average probability of a decrease in

FIGURE 11: Heterogeneity in Expected Earnings Growth over the Business Cycle

(A) By gender

(B) By education
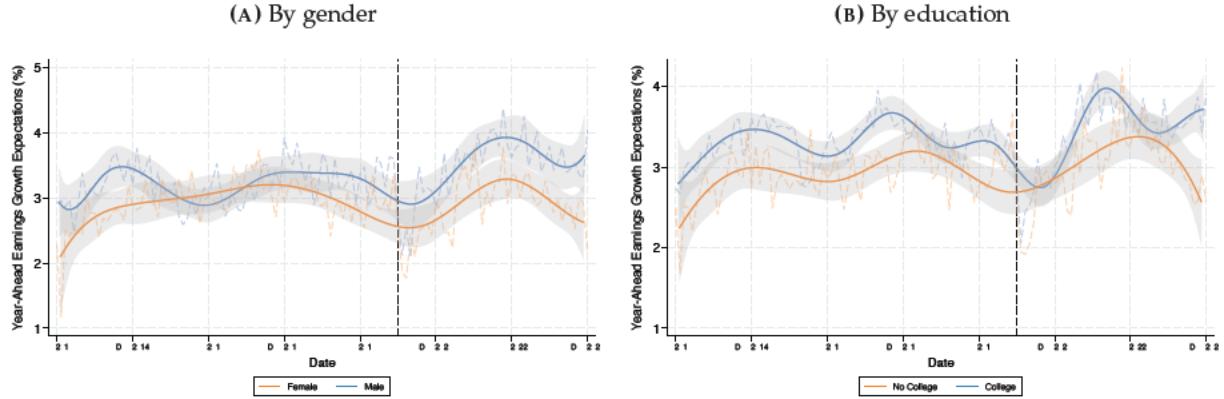
nominal earnings fell from about 13% in June 2013 to about 8% in early 2018, but then it jumped back up temporarily to 12.5% at the start of the pandemic. In contrast, we see little movement in the right tail, with the average probability of a larger-than-12% earnings increase remaining relatively unchanged at about 5% over the same period.[27]

FIGURE 12: Earnings Growth Uncertainty over the Business Cycle

(A) Average Uncertainty

(B) Tail Probabilities
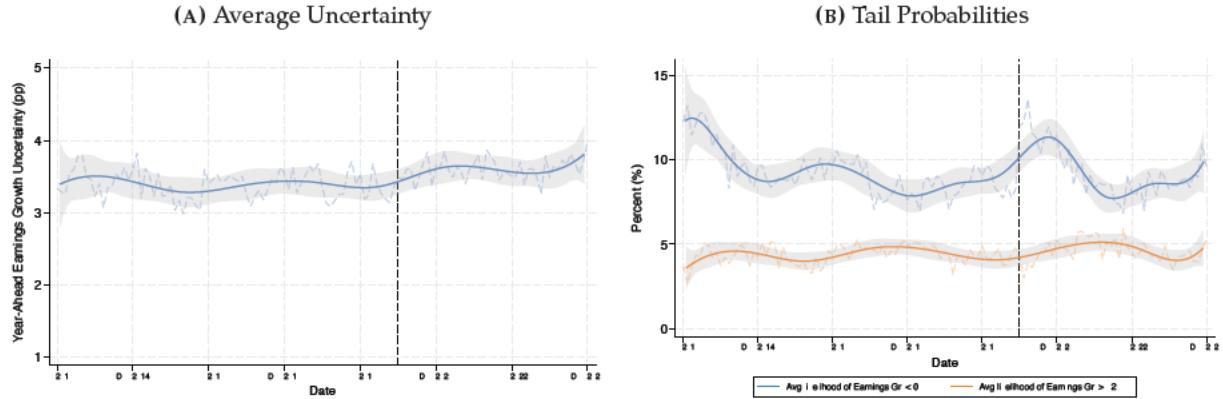
This movement in the shape of the average or "consensus" density of year-ahead earnings growth can be seen in Figure 13. At the onset of the pandemic it shows an increase in the mass at the left tail and in the average probability of small earnings increase of 0 to 2%. Respondents instead lowered the average probability of more substantial 2% to 8% earnings increases. Applying the same decomposition of the average density, as in Section 4, indicates that only 7.4% of the overall spreading out of the aggregate density between February 2020 and August 2020 was due to an increase in average uncertainty.

Examining the evolution of earnings growth uncertainty by worker characteristics, Appendix Figure B21 shows that the overall relative stability of average expected earnings growth uncertainty over the past decade masks meaningful increases in uncertainty during the pandemic for

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[27]Figures B20a and B20b in the Appendix show similar patterns for regression-adjusted averages.

FIGURE 13: Aggregate Earnings Growth Density over the Business Cycle
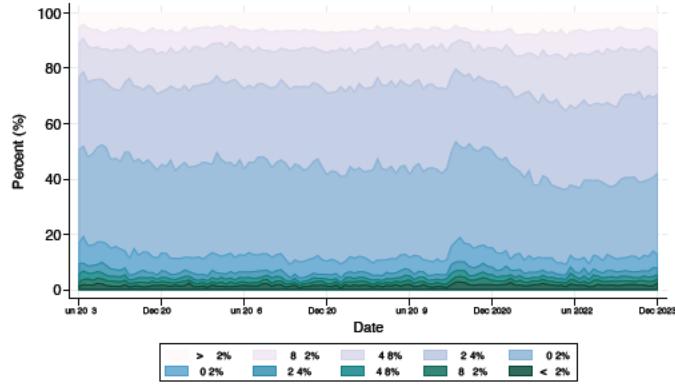
female and non-college educated workers and workers in the private sector.[28]

5.2 Employment expectations over the business cycle

Average year-ahead layoff probabilities, shown in Figure 14 declined somewhat during the mid-2010s after which they stabilized at around 13.5%. As the pandemic hit, average job loss probabilities initially surged to 21%, but then fell steadily to levels well below those that prevailed before the pandemic, reaching 10.4% in April 2022 and 11.8% December 2022. Changes in average quit probabilities instead showed what looks like the mirror image of average layoff expectations, dropping sharply at the onset of the recession, then rebounding to levels just below pre-pandemic. Controlling for the changing sample composition of worker characteristics again somewhat surprisingly makes little difference for these general patterns (see Appendix Figure B23).[29]

FIGURE 14: Likelihoods of Layoff and Quit over the Business Cycle

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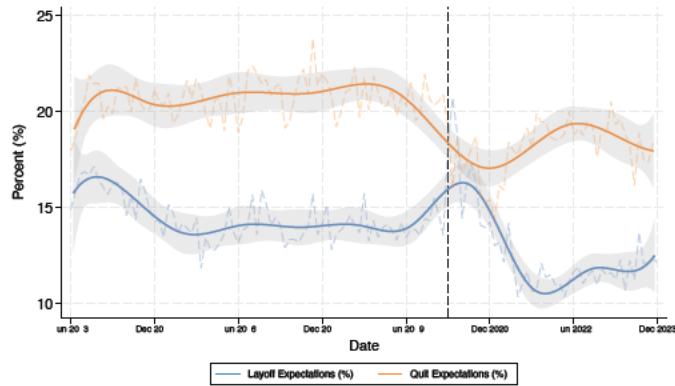
[28] Average residuals from a regression controlling for worker characteristics are shown in Figure B22.

[29] Our results differ somewhat from those reported in Mueller and Spinnewijn (2023), who report largely stable job loss expectations during 2020, which they attribute to the fact that the unprecedented surge in realized job losses during the period was largely unexpected as well as the likely dynamic selection in the pool of workers over that period. Their analysis, however, appears to be based on annual averages of monthly data.

Analyzing the heterogeneity by worker characteristics in Figure B24, we generally find a high degree of commonality in patterns for average perceived layoff risk, as illustrated for the case of education in panel a of Figure 15, except for generally higher levels of job loss risk expressed by private sector workers, those with lower job tenure and lower current earnings levels. Controlling for changing worker characteristics over time, the results generally remain unaltered, except that after adding controls, the layoff risk gap between those with below- and above-median earnings levels shrinks considerably (see Figure B25).

FIGURE 15: Heterogeneity in Layoff and Quit Expectations by Education over the Business Cycle

<div align="center">(A) Layoff Expectations   (B) Quit Expectations</div>
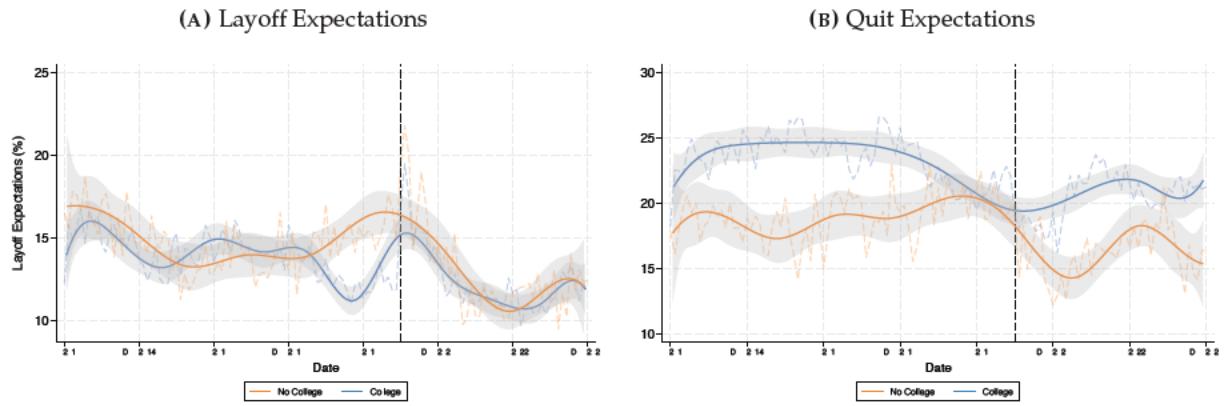
Turning finally to job quit expectations, we find differences by gender, education, industry, and job tenure, that are largely similar to those for layoff expectations (see Figure B26).[30]

5.3 Comparison to actual earnings growth and employment separations over the business cycle

We again draw on CPS data to compare patterns for wage growth and job exit expectations to those for actual experiences. Panel a of Figure 16 displays a qualitatively similar pattern for realized wage growth as the one we saw earlier for wage growth expectations, showing relatively stable earnings growth until mid-2020 when we see a drop, followed by a sharp increase in 2021 and wage growth maintaining well above pre-pandemic levels. Panel b of Figure 16 indicates that this similarity in patterns between expectations and realizations is somewhat weaker for layoffs. The chart shows a relatively stable and low layoff rate leading up to early 2020 when we see a very sharp jump, followed by a gradual decline to a layoff rate a bit below pre-pandemic levels. Comparing the timing and size of the spike in the chart with the much smaller increase in SCE layoff expectations a few months later spotlights the unexpected nature of the pandemic-induced recession, with the surge in layoffs at the beginning of the pandemic clearly being unanticipated.

Panel b of Figure 16 depicts a relatively stable quit rate which is interrupted by a big spike in early 2020, after which we see a temporary decline, followed by a modest increase. Of interest is

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[30]These patterns are again robust to adding controls for worker characteristics (see Figure B27).

FIGURE 16: CPS Earnings and Employment Changes over Time
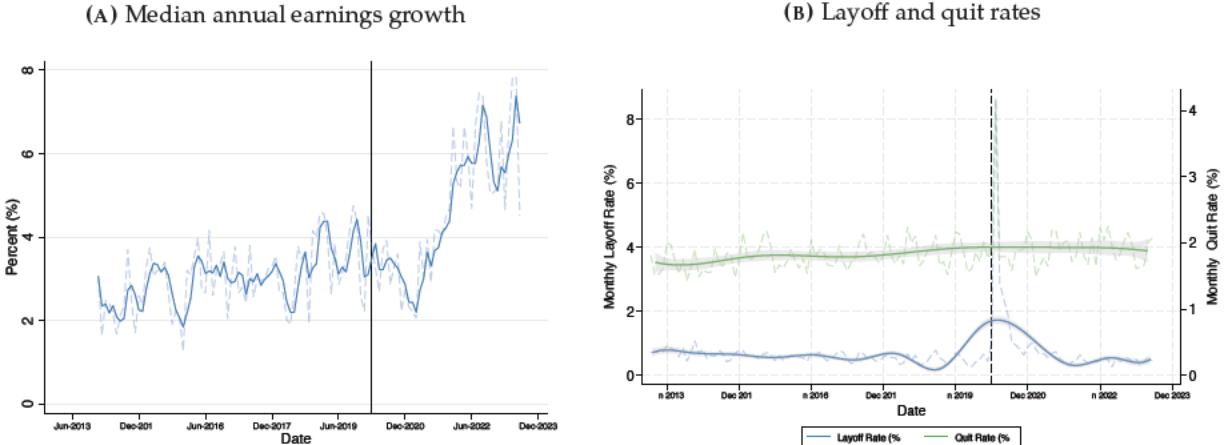
(A) Median annual earnings growth

(B) Layoff and quit rates

Note: The figures use data from IPUMS CPS, University of Minnesota, for the years between January 2013 and December 2023. The details of the construction of the series displayed in the figures are included in Online Appendix A. The left panel shows the 3-month moving average of the median annual earnings growth series while the right panel shows the binscatter regression estimates Cattaneo et al. (2023) for the average monthly layoff and quit rates.

FIGURE 17: Earnings Growth Expectations vs Realizations

(A) Expectations by earnings levels

(B) Realizations by earnings levels
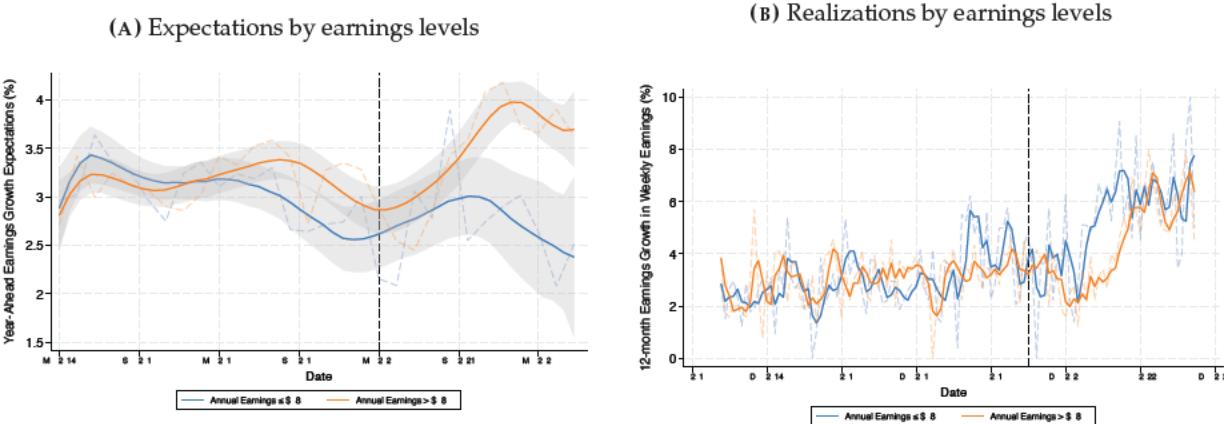
Note: The figure uses data from the SCE and the IPUMS CPS, University of Minnesota, for the years between January 2013 and December 2023. The details of the construction of the CPS series displayed in the figure are included in Online Appendix A. The left panel shows the binscatter regression estimates of year-ahead earnings growth expectations by earnings level from the SCE, while the right panel shows the 3-month moving average of the median annual earnings growth series by the level of earnings from the CPS.

the relatively modest increase in quits during the 2021-2022 period when measured with CPS data, compared to a much larger increase recorded in the JOLTS (see Figure B28 in the Appendix). This apparent discrepancy was also recently noted by Fujita et al. (2023). Using CPS data to construct several measures of quits, the study finds that "None of the CPS-based series exhibit the extraordinary recent spike in the JOLTS quit rate."[31] However, even the more modest increase in quits in the CPS contrasts with the lower expected quit rate observed in the SCE over those years (see Figure 14). The absence of a clear 2021-2022 increase in quit expectations in the SCE indicates that a greater share of quits during this period appears to have been unplanned and spontaneous.[32]

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[31]From page 23 of the Online Appendix retrieved from here in February 2024.

[32]An alternative explanation for the absence of a rise in quit probabilities during 2021-2022 is that the overall rate

Even though we generally find demographic differences in realizations data to be similar to those for expectations data, we find that earnings growth expectations increased for both lower- and higher-earners during 2020-2021, with higher-earners especially expecting larger increases in earnings growth, while the realized earnings growth since the recession turned out to be much higher for lower-earners than for higher-earners instead (see Figure 17). When differentiating by gender (see Appendix Figure B29) we find the same result: while female workers expected a smaller increase in earnings growth following the recession, during 2021 to mid-2022 they actually experienced larger earnings growth than male workers.

6   Covariation with macroeconomic expectations and personal experiences

An interesting question regarding the evolution of earnings growth and job exit expectations over the business cycle concerns the extent to which this variation is driven by evolving views about general macroeconomic conditions, and changing personal experiences. An important advantage of having access to panel data is that rather than relying on cross-sectional variation across different individuals, we can investigate these associations relying solely on within-person variation.

Table 6 shows regression estimates relating monthly changes in respondents' earnings growth and job exit expectations to changes in their contemporaneous macroeconomic expectations and in their personal conditions. By focusing on changes rather than levels our analysis controls for unobserved time-invariant differences between individuals. We consider the following time-varying views about macroeconomic conditions: expectations about one-year ahead inflation as well as reported probabilities that the US unemployment rate, stocks, home prices and the interest rate on savings accounts will be higher in 12 months. Our regression specification also includes a set of personal experiences, including the change in marital status, the change in the number of young children in the household, the change in full-time employment status, whether there is a change in the respondent's employer, and whether there is a change in the respondent's job within the same employer.[33] The specifications also include time dummies, Census region dummies and demographic characteristics (capturing potentially any differences in the trends in beliefs across regions and demographic groups) as additional controls. Estimation in levels, rather than changes, while also controlling for individual fixed effects yield very similar estimates.

The estimates in the first column of Table 6 show year-ahead earnings growth expectations to be positively and statistically significantly associated with year-ahead inflation expectations and not to co-vary with inflation uncertainty (measured by the density IQR for year-ahead inflation). The relation with expected inflation is relatively weak, implying a low expected pass through of

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combines a rise in quit expectations among some workers with a decline in quit expectations among those who have already quit and started a new job.

[33]Unfortunately our data lack information about health changes.

TABLE 6: Labor market expectations, macroeconomic expectations and personal experiences

	(1) Δ Earn. Gr. Exp.	(2) Δ Earn. Gr. Uncert.	(3) Δ Pr(Layoff)	(4) Δ Pr(Quit)
Δ 1-yr ahead inf exp	0.046***	-0.014*	0.013	0.031
	(0.012)	(0.008)	(0.039)	(0.035)
Δ 1-yr ahead inf unc	-0.001	0.010***	0.006	0.011*
	(0.002)	(0.002)	(0.006)	(0.007)
Δ % chance unemp higher	-0.004**	0.002*	0.044***	0.017**
	(0.002)	(0.001)	(0.006)	(0.008)
Δ % chance stock pr higher	0.004**	0.001	0.018***	0.028***
	(0.002)	(0.001)	(0.006)	(0.006)
Δ % chance int rate higher	0.002	-0.000	0.013**	0.012**
	(0.002)	(0.001)	(0.005)	(0.006)
Δ 1-yr ahead home price gr exp	0.102***	0.006	-0.038*	-0.025
	(0.013)	(0.005)	(0.023)	(0.032)
Δ Married	-0.214	0.190	-1.486	-2.565**
	(0.317)	(0.282)	(1.172)	(1.057)
Δ nr of kids under 18	-0.044	-0.126	0.508	0.722
	(0.173)	(0.158)	(0.671)	(1.008)
Δ working FT	0.275	0.111	-3.563***	-2.903**
	(0.263)	(0.133)	(0.866)	(1.238)
New Employer	0.317	0.058	-2.496**	-24.696***
	(0.392)	(0.220)	(1.234)	(2.137)
New Job, Same Employer	-0.312*	-0.070	0.070	-1.559*
	(0.172)	(0.089)	(0.543)	(0.815)
Dep. Var. Mean	-0.051	-0.083	-0.119	-0.056
R^2	0.027	0.013	0.013	0.034
Observations	61251	61251	55040	54110

Note: Regressions are weighted. Standard errors clustered at the individual level are in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

overall price inflation to on-the-job wage inflation. For example, the results imply a 4 to 5 basis point increase in expected on-the-job earnings growth associated with a 100 basis point expected increase in inflation.

Earnings growth expectations are further positively and statistically significantly associated with the probability of higher stock and home prices, and negatively related with the probability of a higher year-ahead unemployment rate. The estimates imply that a 10 percentage point increase in the probability that the unemployment rate will be higher a year from now, is associated with a 4 basis point decrease in expected earnings growth. Similarly a 10 percentage point increase in the probability that 12 months from now, average stock prices in the US will be higher that they are now, is associated with a 4 basis point higher expected earnings growth. A 1 percentage point increase in expected home prices similarly is associated with a 10 basis point higher expected earnings growth.

Column 2 of table 6 shows estimates for changes in perceived uncertainty about year-ahead earnings growth. The estimated associations for earnings growth uncertainty are generally much weaker than those for earnings growth expectations, with expected inflation having a small negative effect, and inflation uncertainty and expectations of an increase in unemployment having small and statistically significant positive effects.

Similar estimates from relating changes in reported layoff and quit probabilities to changes in the same set of macroeconomic expectations and personal experiences are reported in columns 3

and 4 of Table 6. We find layoff and quit probabilities to be positively associated with expectations of higher unemployment, higher stock prices, and higher interest rates. These associations are both statistically significant and economically meaningful. Furthermore, perceived layoff risks are negatively associated with expected home price growth, with the effect being marginally statistically significant.

This new evidence supplements other recent findings on the relationship between subjective labor market beliefs and macroeconomic conditions. For example, Mueller and Spinnewijn (2023) find a clear and significant association between the monthly national unemployment and vacancy statistics and job finding expectations in the SCE for unemployed individuals as well as for employed individuals in case of job loss. They find a very similar relationship between job seekers' beliefs and their elicited expectations that the unemployment rate will rise, indicating, as we find here, that workers do take into account their own perceptions about aggregate conditions when forming their expectations.

While recent work has documented the sensitivity of a worker's earnings to current aggregate economic conditions, to the performance of a worker's employer, and to the performance of the worker's industry (Guvenen et al., 2017), our results suggest an additional channel through which such exposures can affect behavior– through worker's expectations of future aggregate employment conditions.

Turning now to the associations with personal experiences, we find getting married to have no statistically significant effect on expected on-the-job earnings growth and on earnings growth uncertainty, but to have a negative effect on perceived risk of a layoff and the risk of quitting, with becoming single having the opposite effect. A change in whether there are young children in the household has no statistically significant effects, while switching from part-time to full-time status reduces the average perceived risk of layoff and quitting, with a switch from full- to part-time work having the opposite effect. A change in employer on average has a positive but statistically insignificant effect on wage growth expectations and wage growth uncertainty, but is significantly associated with reductions in average layoff risk and especially in the risk of quitting. Finally, a job change with the same employer is associated with an average decline in expected wage growth and a decline in the probability of quitting within the next year.

These findings add to a broader literature on the impact of individual experiences on beliefs and behavior, and illustrate the time-varying and state dependent nature of worker expectations. For example, D'Acunto et al. (2021) and Malmendier and Nagel (2016) find expectations about future inflation to be highly responsive to own shopping and personal inflation experiences. Malmendier and Shen (2024) document effects of income and job loss experiences on perceptions about job loss risk and find long-lasting reductions in consumption spending.[34] Our findings regarding the impact of job changes on wage growth and job exit expectations illustrate the importance of the exact nature of job switches for belief updating.

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[34]Our findings are also related to the literature on so-called *experience effects* on beliefs and behavior (see Malmendier (2021)), although the focus there is usually more on long-term effects.

7 Conclusion

In this paper we examine workers' beliefs about their earnings growth and risk of layoff and quitting. While there exists a large body of work on observed earnings and employment volatility, little is known about worker's perceptions of that variability. Knowledge of such beliefs, and how they evolve over the working life and business cycle is especially important for understanding consumer behavior. In addition to consumption and work decisions, beliefs about labor market uncertainty matter for precautionary savings and wealth accumulation, investment behavior, and demand and access to credit.

Using almost a decade worth of rich monthly panel data on probabilistic expectations from the Survey of Consumer Expectations, we find substantial heterogeneity in perceived earnings growth and employment risk across workers, underscoring the value of collecting this type of subjective expectations data. We find beliefs about future earnings growth shocks to exhibit considerable positive skewness and thickness in the right tail. Expected earnings growth is found to be negatively, while earnings growth uncertainty to be positively correlated with the perceived likelihood of both voluntary and involuntary job exits.

We find a gradual decline in average expected earnings growth and in earnings growth uncertainty over the working life, due in part to a gradual compression of individuals' density forecasts of earnings growth (driven by a thinning of the right tail) as well as a convergence in the dispersion (across workers) in density means. In contrast, we find average layoff risks to be remarkably stable through the working life, while average quit probabilities show a U-shaped pattern in age.

During the pandemic earnings growth expectations initially fell, but then rebounded sharply, while average layoff probabilities initially jumped up and then declined rapidly to below pre-pandemic levels. In contrast, earnings growth uncertainty remained remarkably stable through the pandemic recession. While the overall life-cycle and business cycle patterns we find for earnings growth and job exit expectations largely conform to those for actual realizations, our results point to the unanticipated nature of the surge in layoffs during the pandemic recession and of the rise in resignations that followed. Expectations data indicate that these job separations were largely unplanned. In addition, we find that while earnings expectations rose for all workers during 2021-2022, they rose less for those with below-median earnings, even though that group actually ended up experiencing much faster earnings growth.

We find workers' perceptions of labor market risks to covary with their subjective expectations about the national economy, such as the unemployment rate, stock market and home price growth expectations. This new evidence reveals another important channel through which aggregate economic conditions may affect the economic behavior of workers: through their beliefs about future labor market risks. We also document that workers' earnings growth expectations and perceptions of employment risk are associated with their personal experiences. Workers who recently changed employers revise their layoff risk and quit expectations down, while those who recently changed jobs with the same employer also lower their wage growth expectations in addition to

their quit expectations.

While illustrating the value of subjective expectations data, our study suggests several important areas for further research. First, there is a need for a more detailed study of what expectations data imply regarding respondents' beliefs about the underlying stochastic earnings process. An approach recently introduced by Arellano et al. (2023), which relies on a combination of income expectations and realizations data to estimate flexible dynamic income models appears especially fruitful. Of particular interest is additional analysis of workers' beliefs regarding the serial correlation structure in the earnings process, and the decomposition of shocks into permanent, persistent, and transitory. Such an analysis could benefit from the collection of expectations over additional forecast horizons. In addition, it will be important to examine the role of beliefs about labor market risks on household behavior more generally, including saving, borrowing, and investment decisions.

Another interesting topic for future research would be to contrast our approach of directly eliciting expectations to the approach by Cunha et al. (2005) and others cited in section 2 of inferring the predictability of future earnings as revealed by work and consumption decisions and subsequent earnings realizations. Importantly, this approach reveals the type of information individuals have *and* act upon, while elicited expectations instead reveal all beliefs, including those the individual either chose not to, or was unable to act upon. Comparing estimates from both approaches thus may shed new light on the rationality of beliefs, on the existence of constraints on individuals' choice sets, and on the insurability of predictable earnings changes.

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Online Appendix A   Data

In our analysis comparing patterns in the SCE expectations data with data on realizations, we use data from the Current Population Survey (CPS) and the Job Openings and Labor Turnover Survey (JOLTS) for the realized outcomes.

For the CPS (Sobek et al., 2023), we use monthly data from January 2013 to July 2023 (the latest data available at the time of this writing). We construct our wage growth measure using the longitudinal aspect of the survey and using the wages of the respondents surveyed in survey month 4 and 8. As the CPS interviews respondents for 4 months, then gives an 8 month break and then interviews the respondents again for 4 months, the survey month 4 and 8 are in fact 12 months apart. We follow the literature (Daly et al., 2012) and report the median of the individual realized wage growth by age and over time as the outliers in the CPS heavily influence the average wage growth measures.

We construct monthly layoff rates from the CPS by conditioning on employment in the previous month and calculate the share of respondents who switch to unemployment and report being laid off. For the monthly quit rates from the CPS, we again condition on employed respondents in the previous month and calculate the sum of the the share that switches to unemployment and report this as quit and the share that moves out of the labor force in the subsequent month.

We use monthly JOLTS data retrieved from the BLS database for seasonally adjusted layoff and quit rates reported by establishments. This data is released as monthly aggregates and we only plot the downloaded data without any cleaning.

Online Appendix B   Tables and Figures

FIGURE B1: Relationship between Layoff and Year-Ahead Earnings Growth Expectations

(A) Expected Earnings Growth   (B) IQR of Expected Earnings Growth
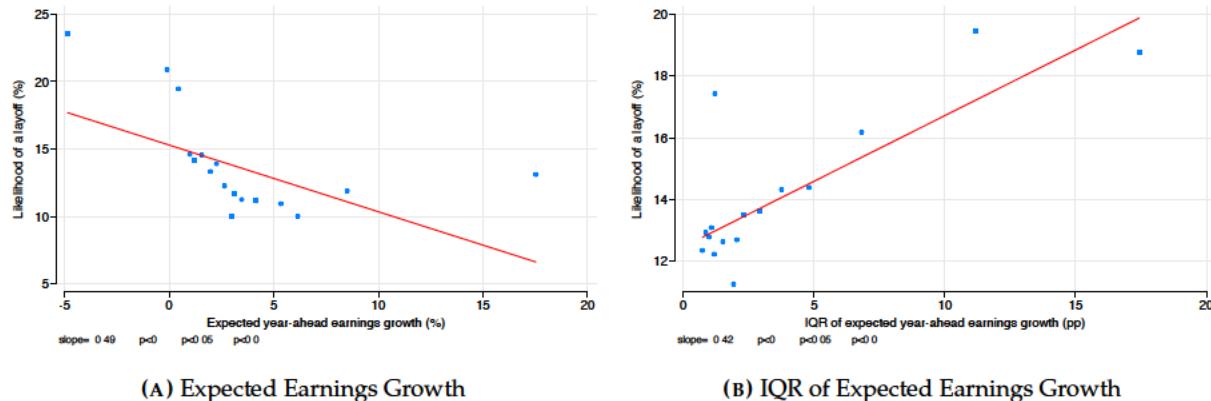
FIGURE B2: Relationship between Quit and Year-Ahead Earnings Growth Expectations

(A) Expected Earnings Growth

(B) IQR of Expected Earnings Growth
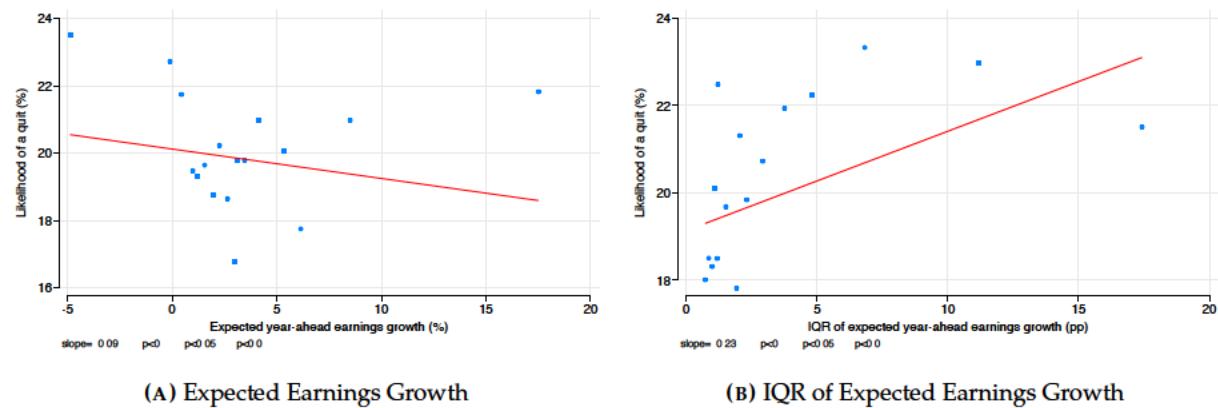
**FIGURE B3:** Relationship between Layoff and Quit Expectations
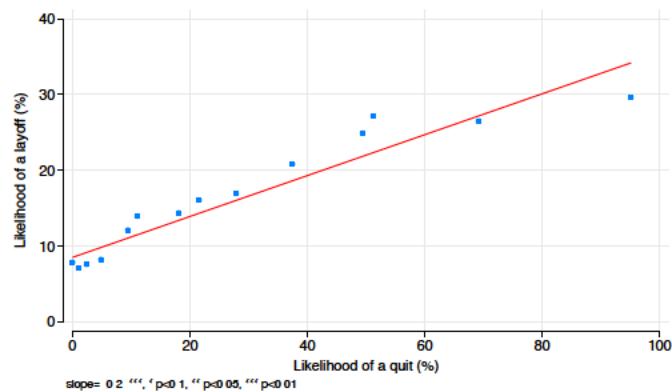
FIGURE B4: Relationship between Expected Earnings Growth and Earnings Growth Uncertainty
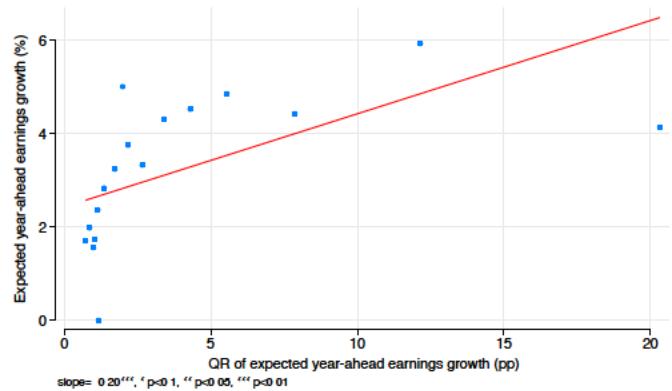
FIGURE B5: Heterogeneity in Expected Earnings Growth over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Self-Employment

(F) By Job Type
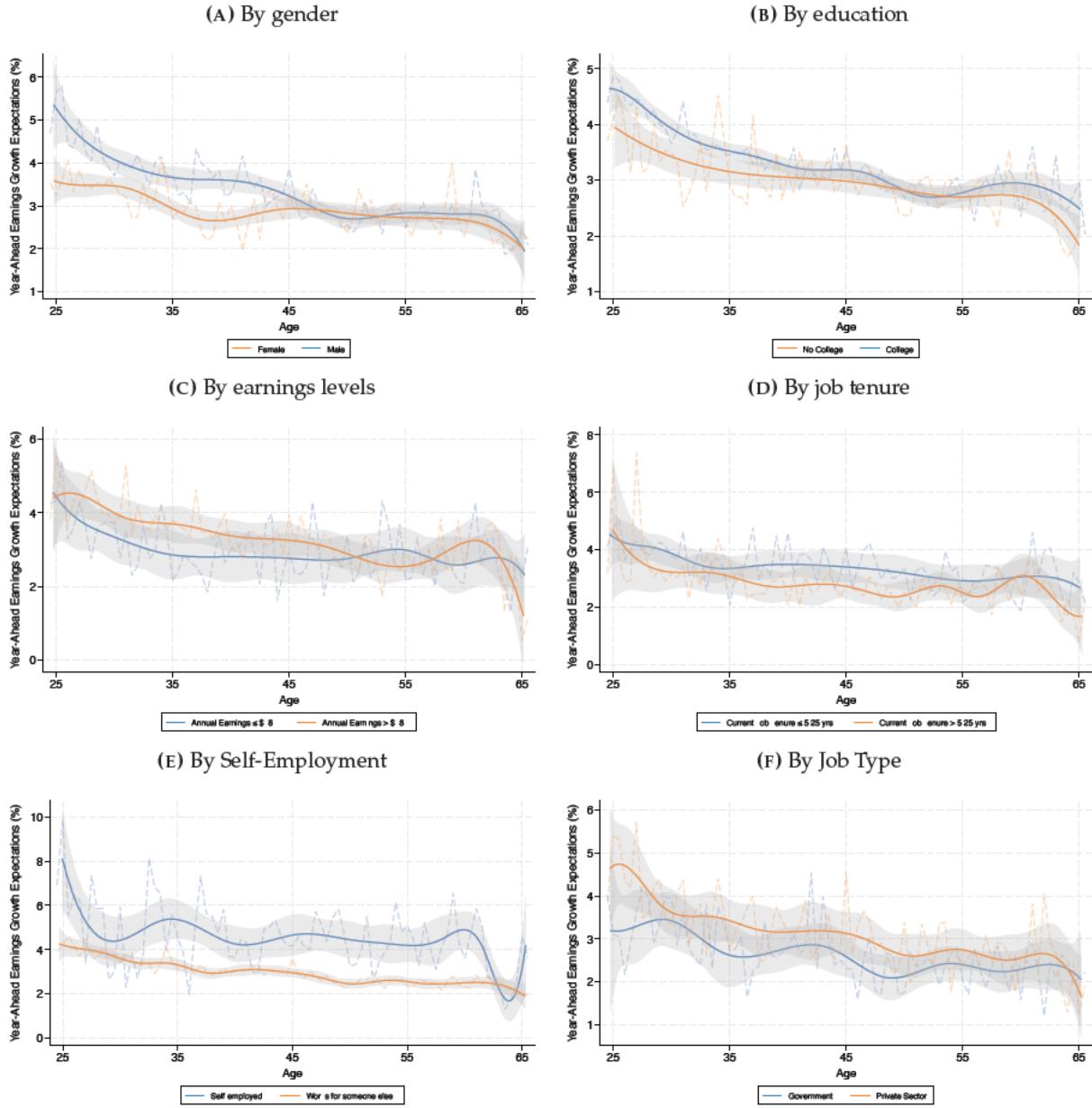
FIGURE B6: Perceived Layoff-Adjusted Earnings Growth Expectations By Education
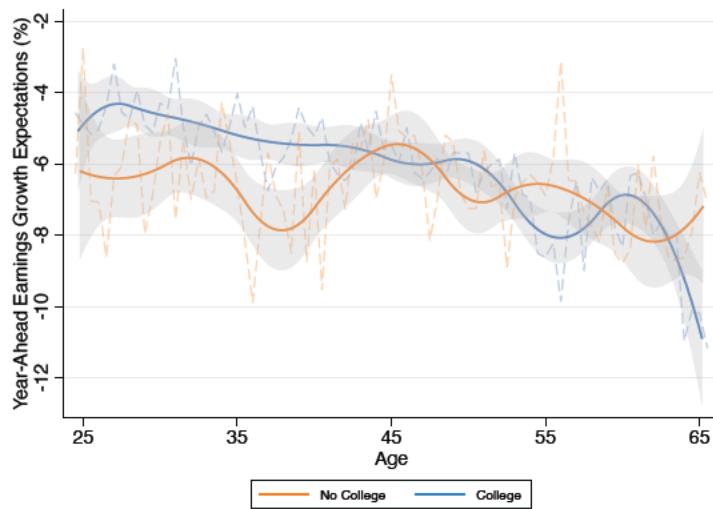
Note: The figure shows earnings growth expectations by taking into account the perceived risk of layoff. In constructing this series, we set a replacement rate of 35% and assume this is known with certainty by the respondents. The perceived layoff-adjusted earnings growth expectations are then calculated at the individual level as the product of the expected on-the-job wage growth (density mean) and the perceived probability of not being laid off plus the wage change in the event of an unemployment (-65%) times the perceived risk of layoff.

FIGURE B7: Residualized Earnings Growth Expectations over Working Life
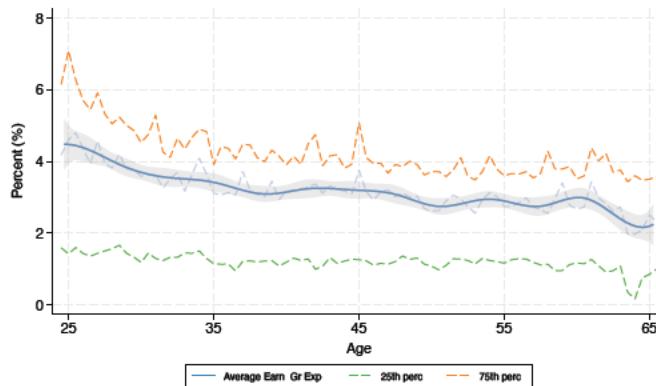
Note: The earnings growth expectations series is regressed on dummies for gender, race, education, having a child under age 6, annual household income categories, Census regions, year, and self-employment. We then add the mean of original series to the residuals from the regression and plot the resulting series over the life cycle.

FIGURE B8: Residualized Earnings Growth Uncertainty over Working Life

(A) Average Uncertainty
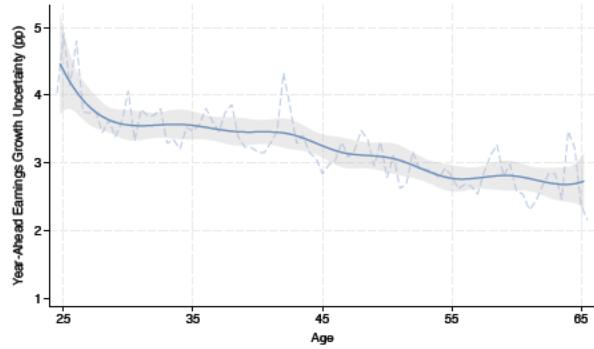
(B) Tail Probabilities
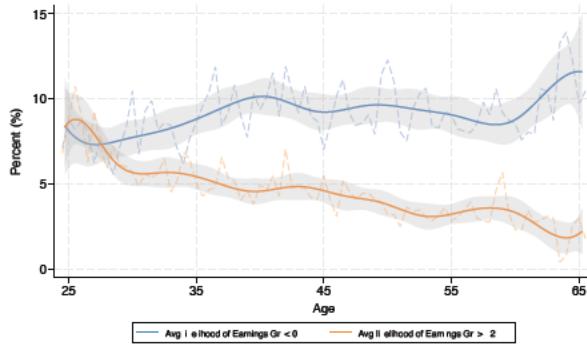
Note: All the series in these two figures are regressed on a dummies for gender, race, education, having a child under age 6, annual household income categories, Census regions, year, and self-employment. We then add the mean of original series to the residuals from the regression and plot the resulting series over the life cycle.

FIGURE B9: Heterogeneity in Residualized Expected Earnings Growth over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Self-Employment

(F) By Job Type
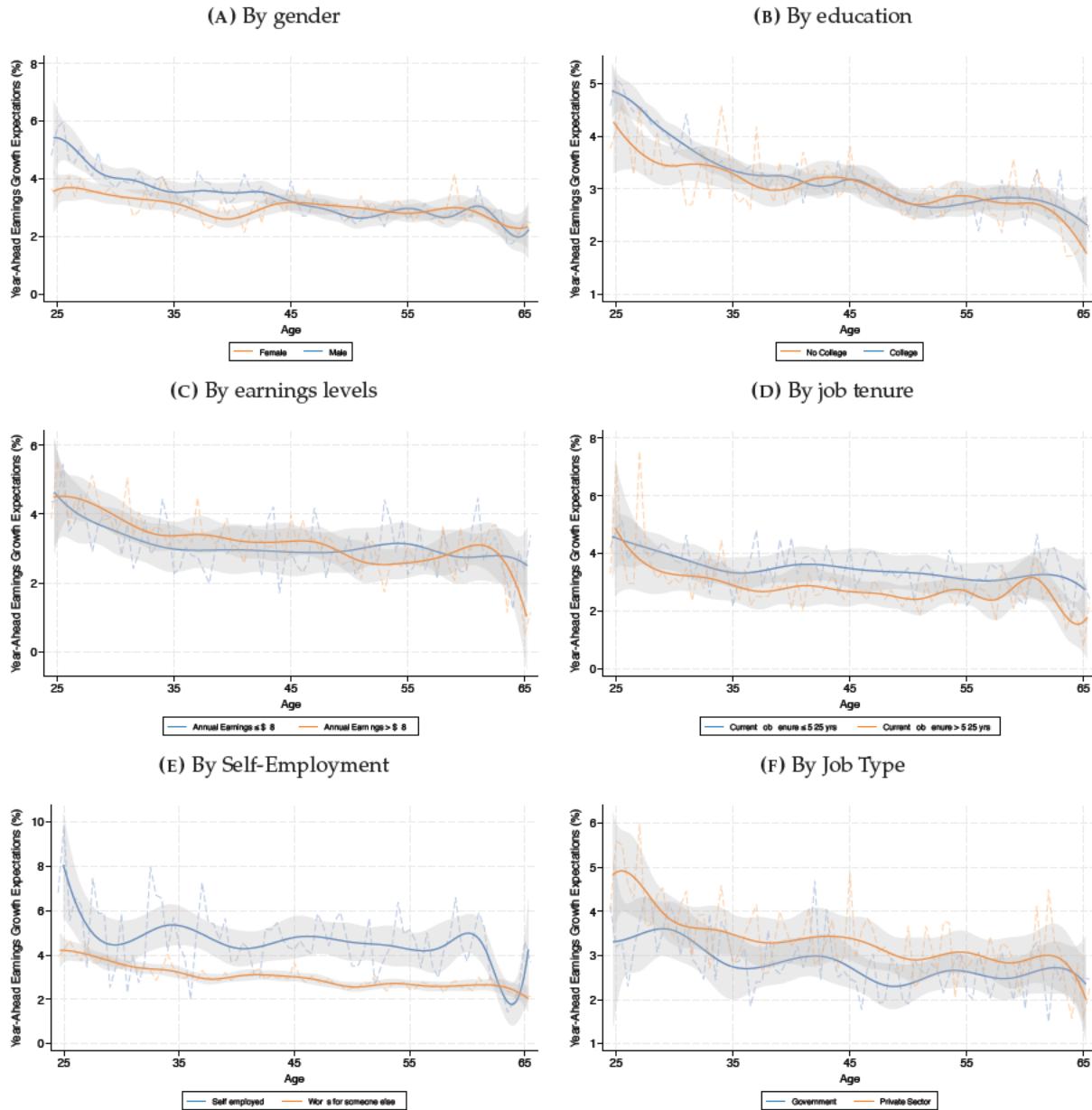
FIGURE B10: Heterogeneity in Earnings Growth Uncertainty over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Self-Employment

(F) By Job Type
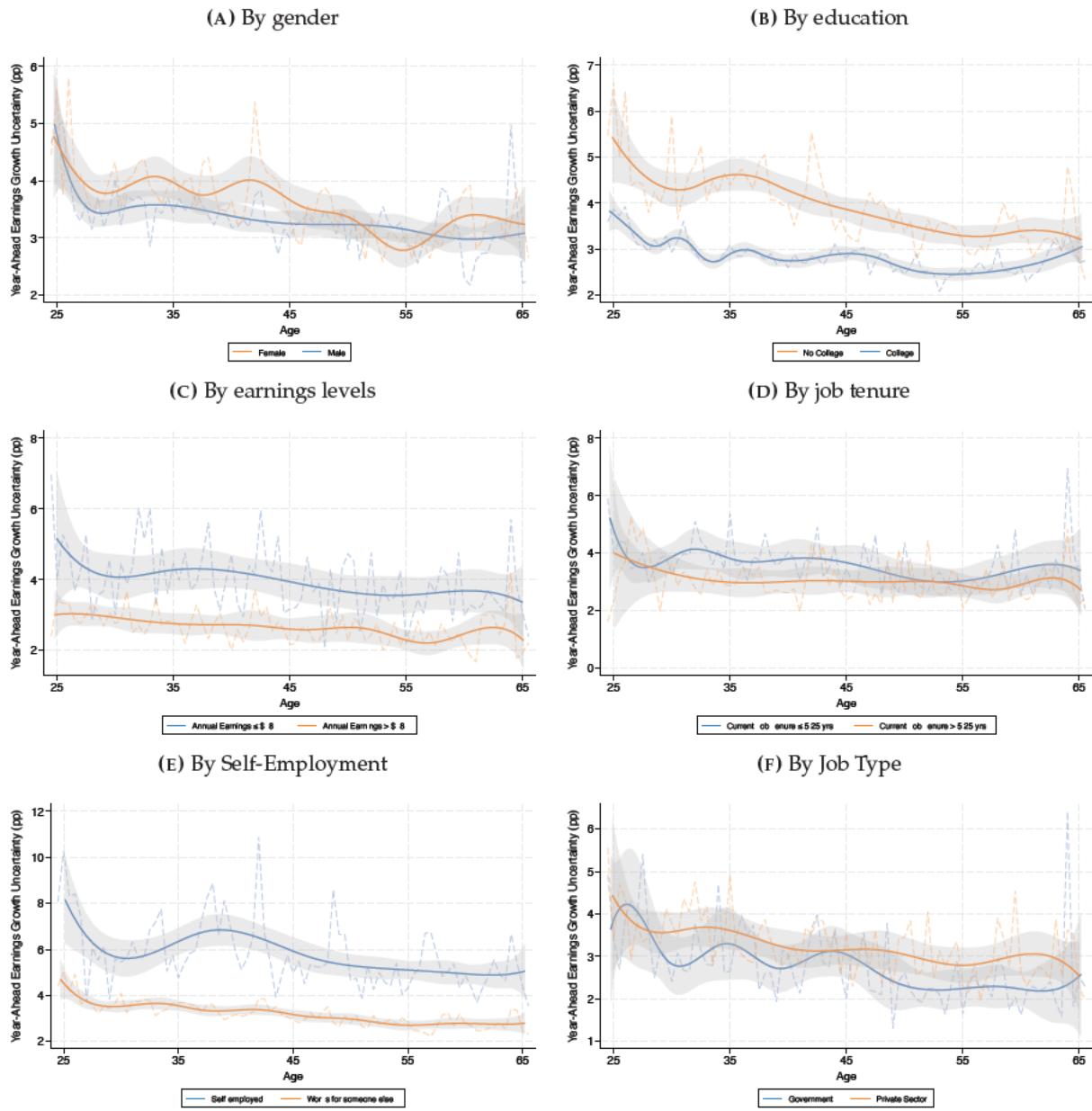
FIGURE B11: Heterogeneity in the Residualized Earnings Growth Uncertainty over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Self-Employment

(F) By Job Type
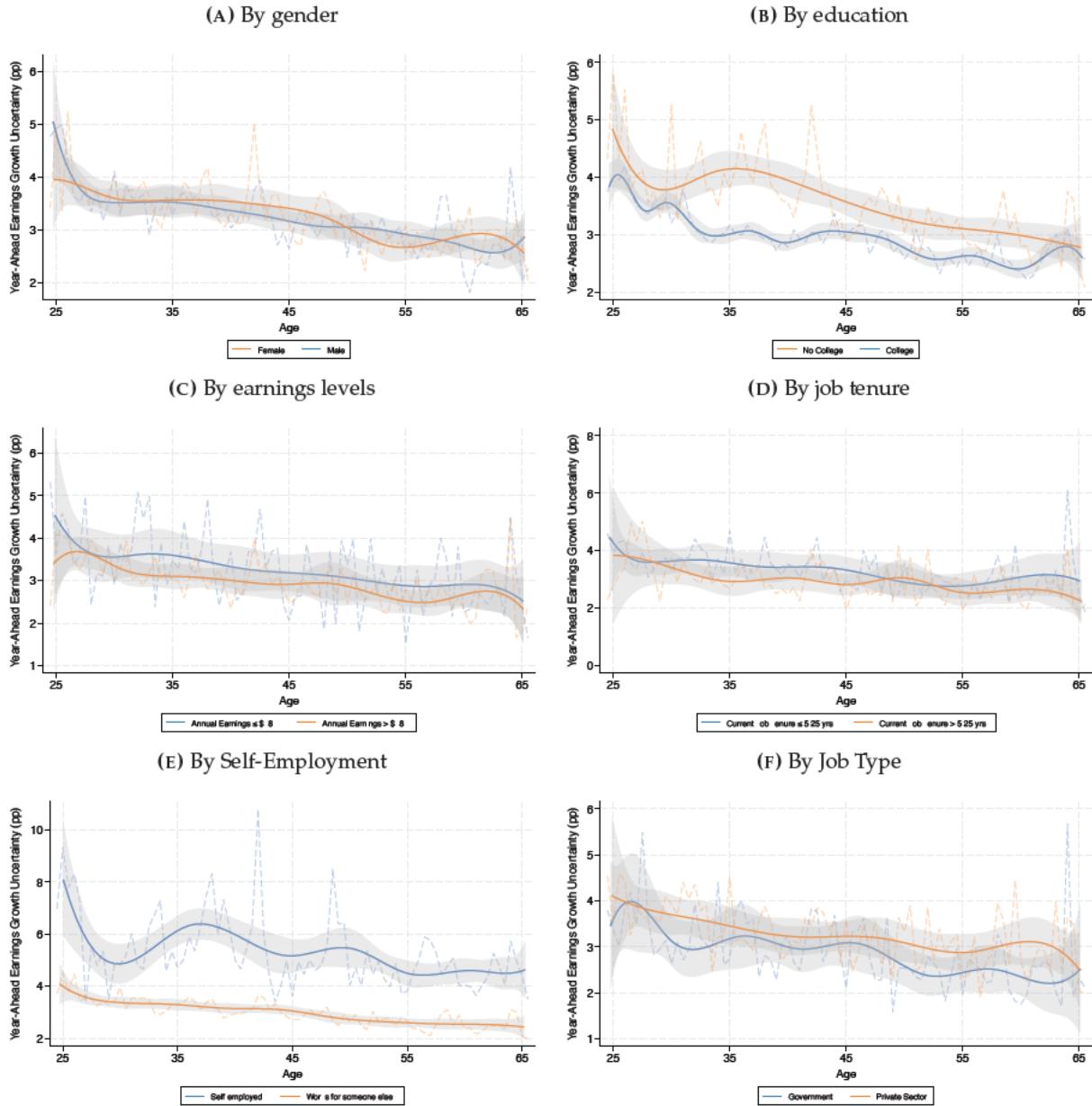
FIGURE B12: The Residualized Likelihood of Layoff and Quit over the Working Life
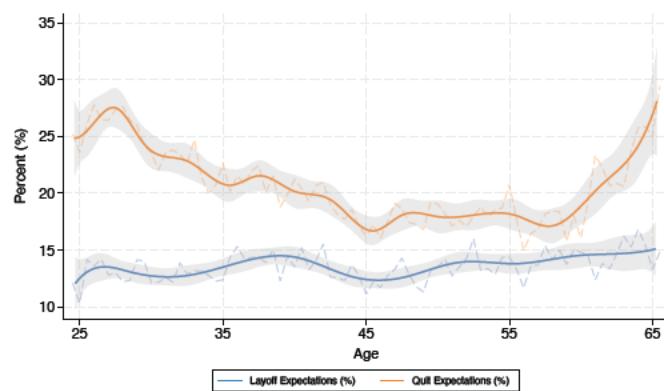
**FIGURE B13:** Heterogeneity in Layoff Expectations over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Job Type
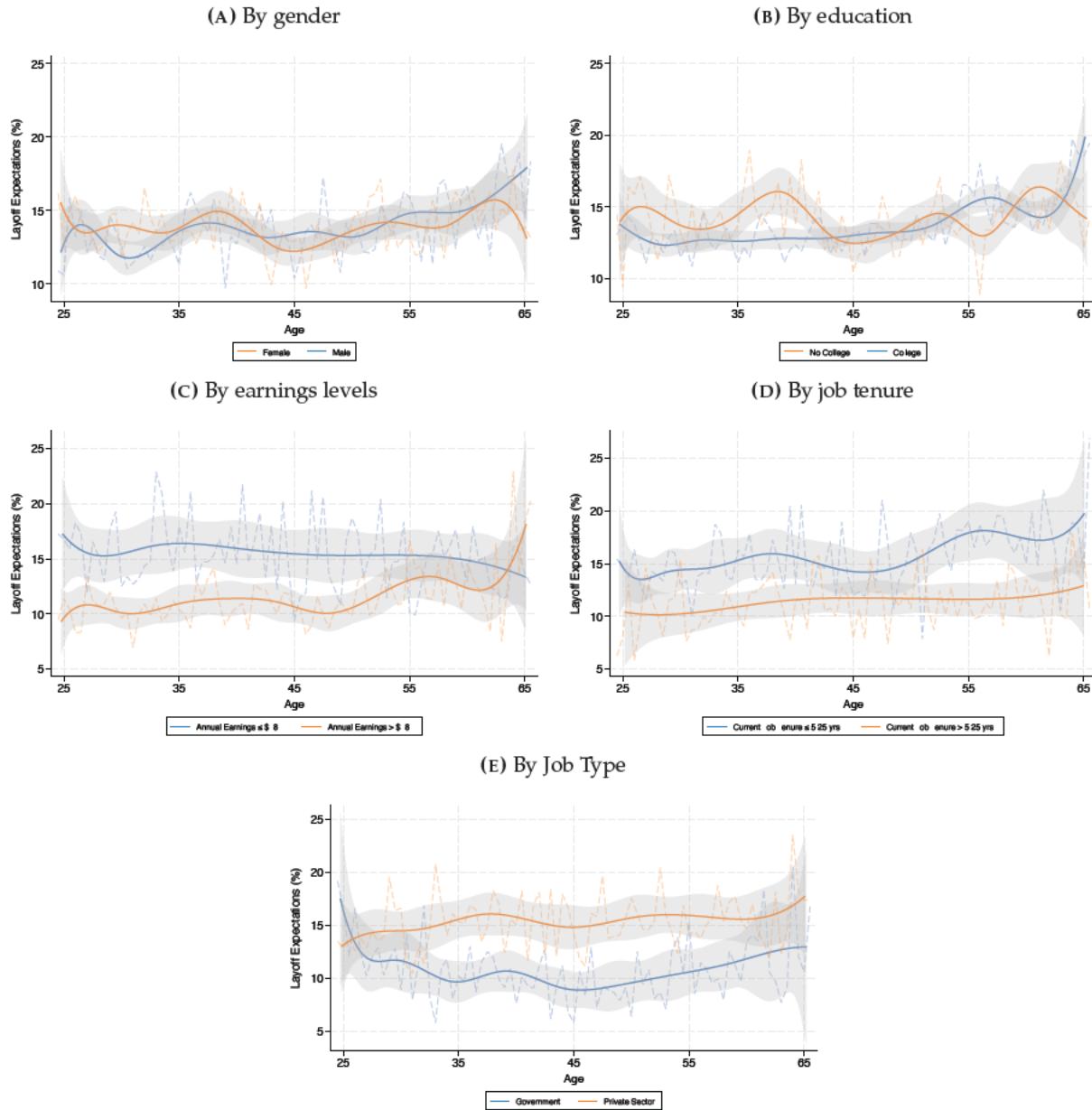
FIGURE B14: Heterogeneity in Residualized Layoff Expectations over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Job Type
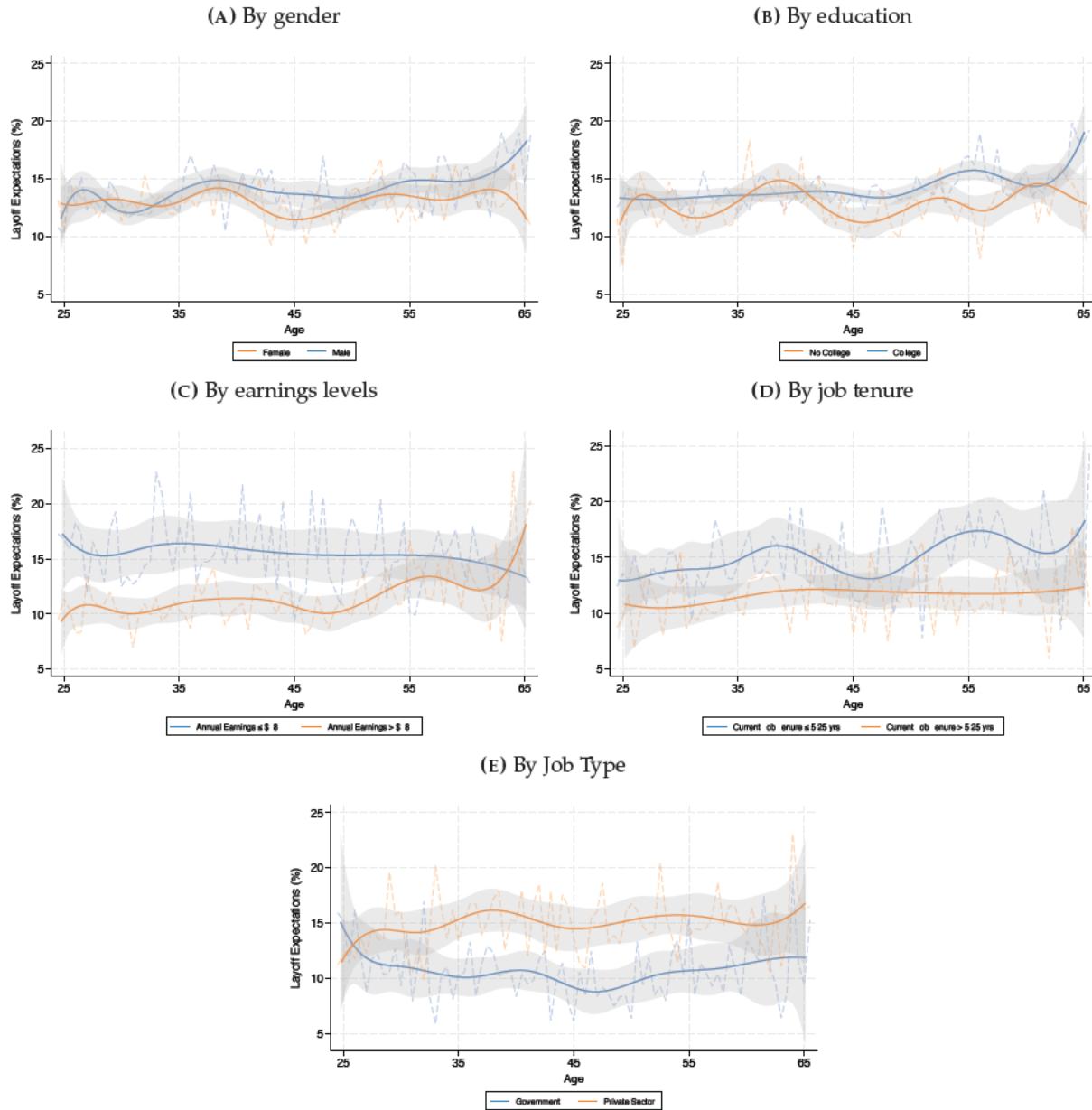
FIGURE B15: Heterogeneity in Quit Expectations over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Job Type
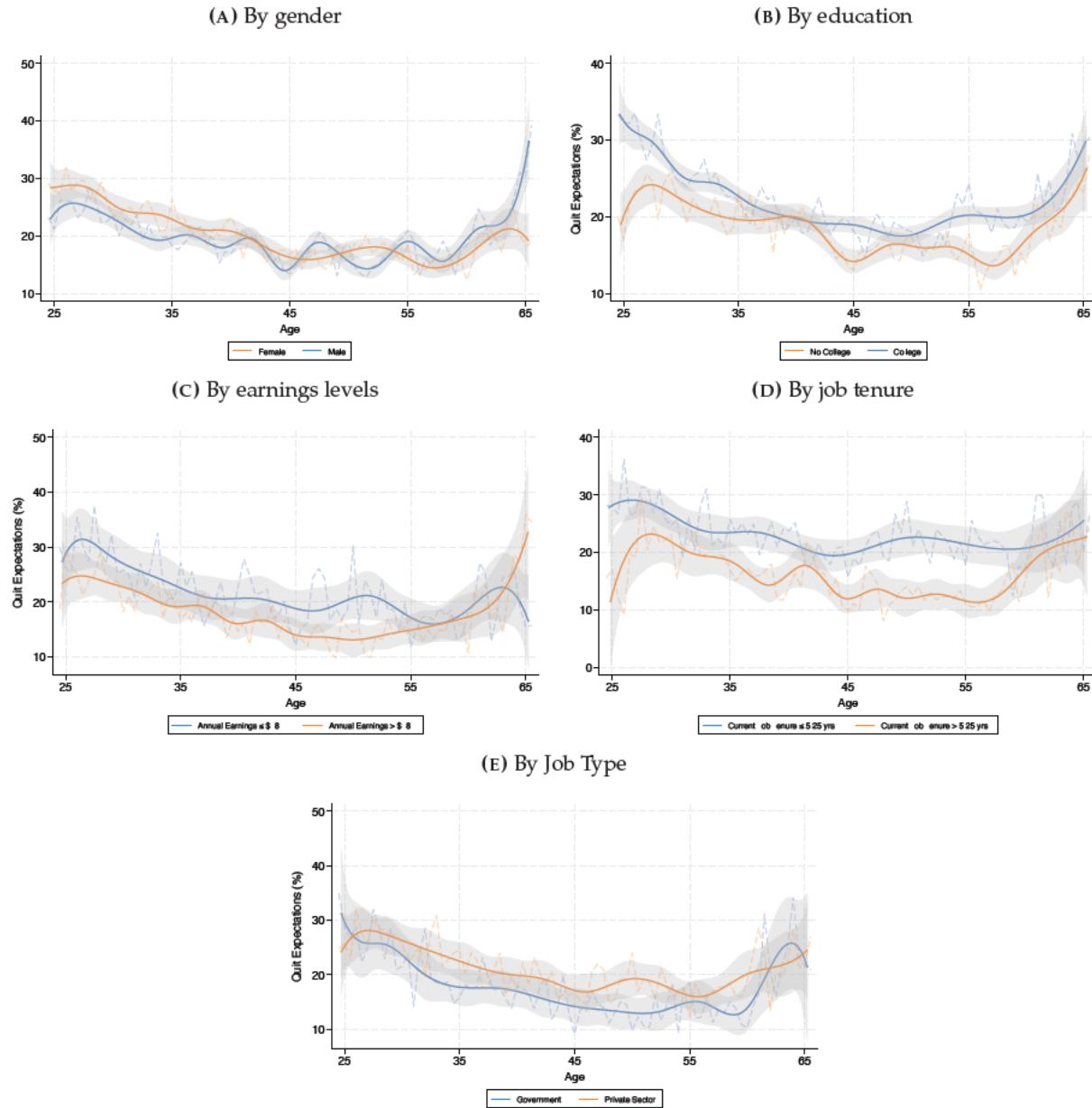
FIGURE B16: Heterogeneity in Residualized Quit Expectations over the Working Life

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Job Type
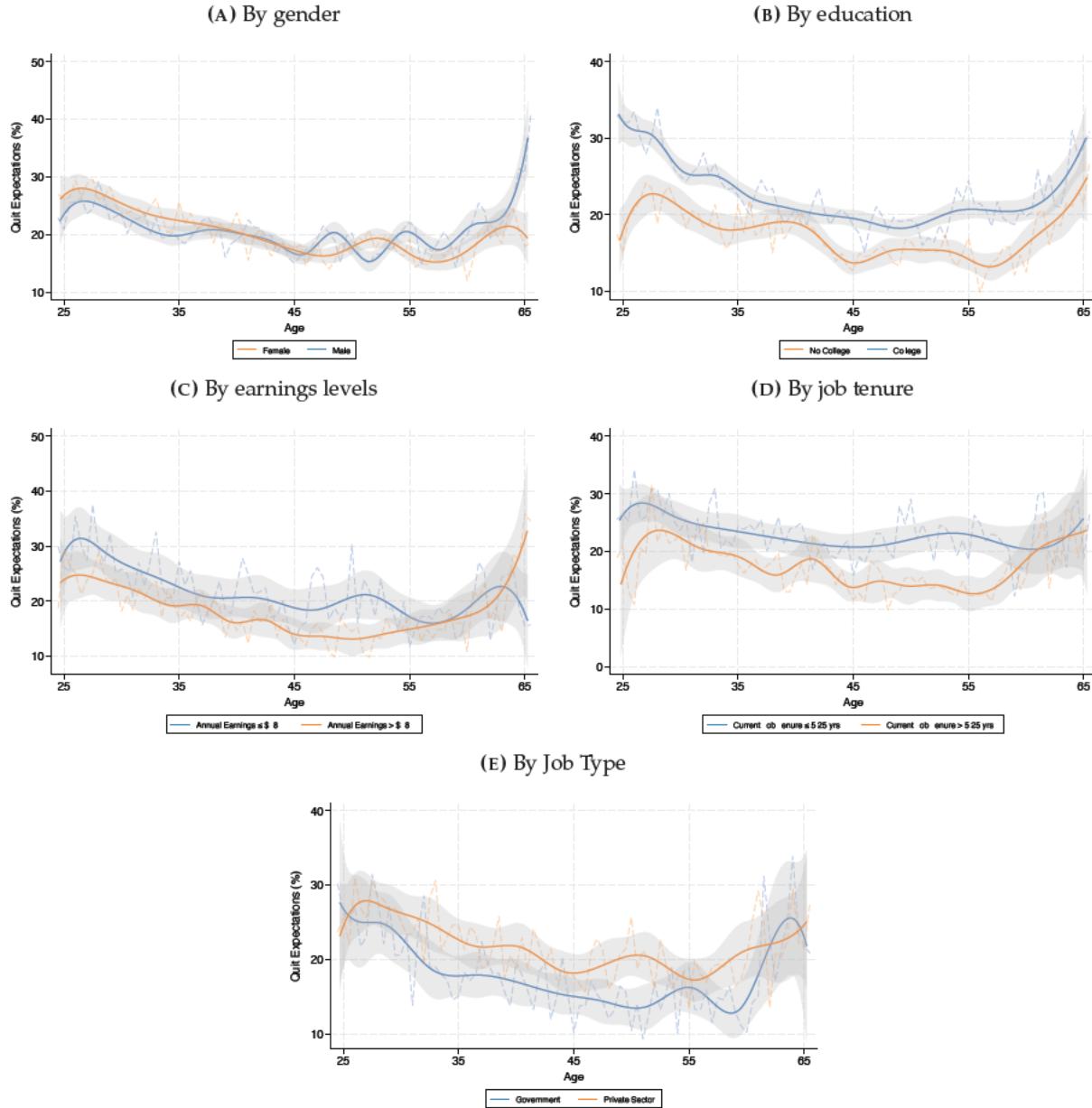
FIGURE B17: Residualized Expected Earnings Growth over the Business Cycles
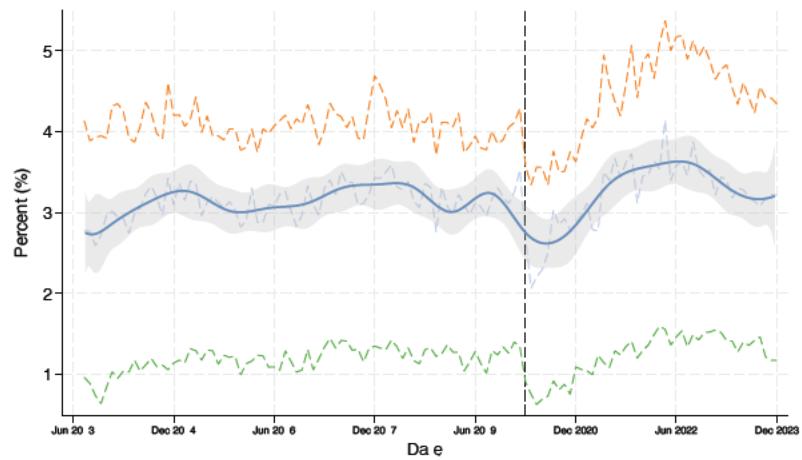
**FIGURE B18:** Heterogeneity in Expected Earnings Growth over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Self-Employment

(F) By Job Type
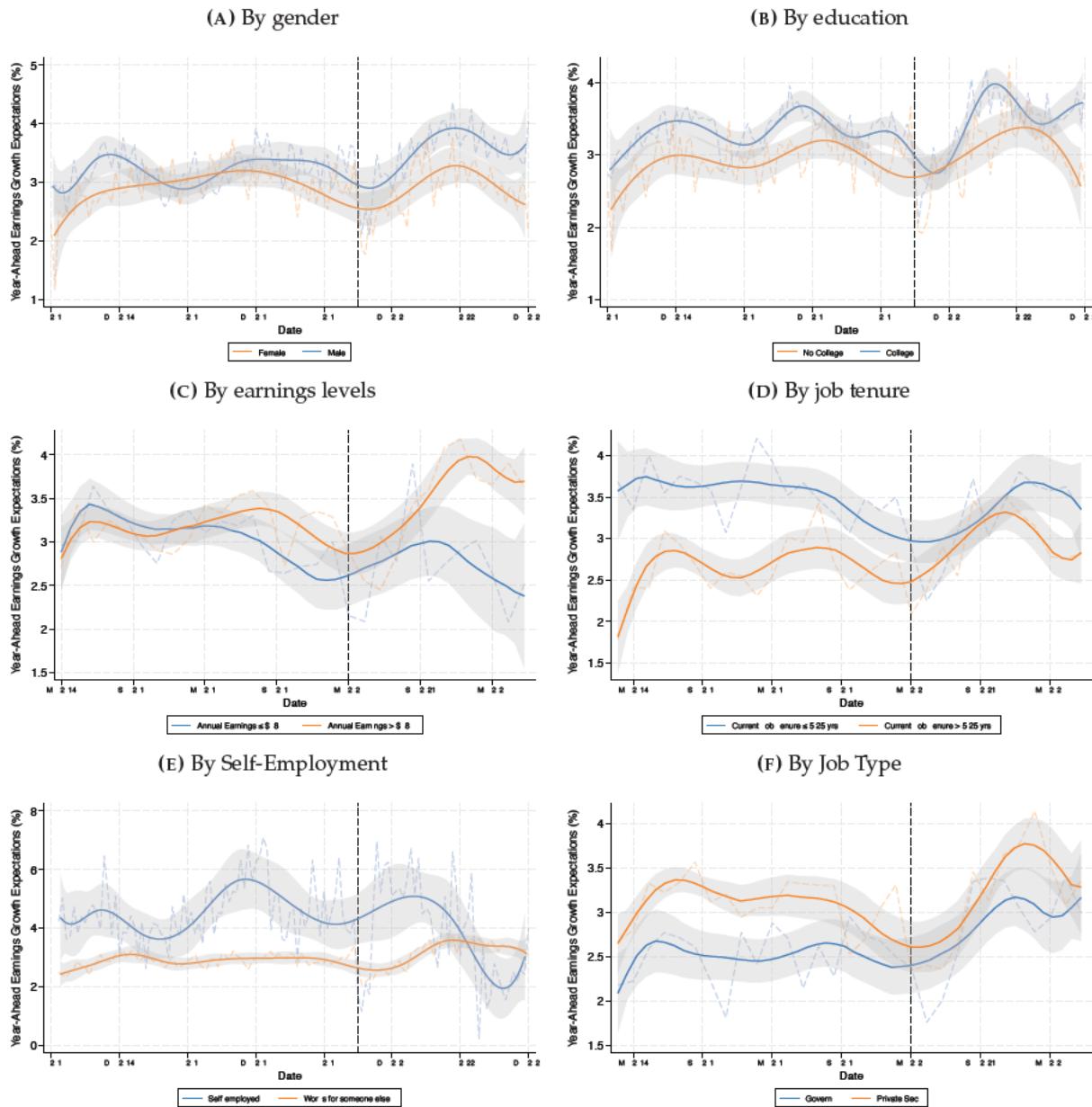
FIGURE B19: Heterogeneity in Residualized Expected Earnings Growth over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Self-Employment

(F) By Job Type
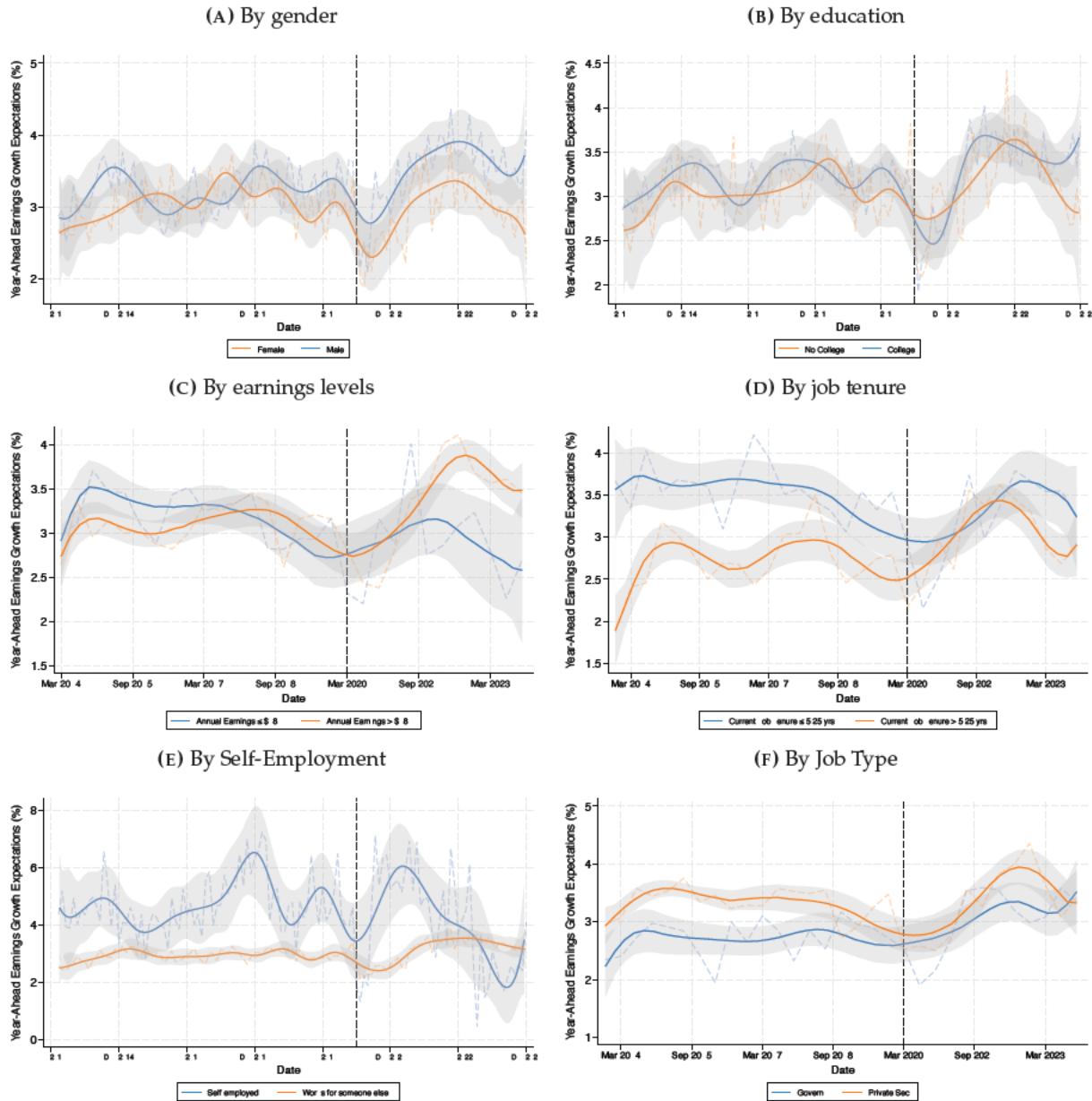
FIGURE B20: Earnings Growth Uncertainty over the Business Cycle

(A) Average Uncertainty
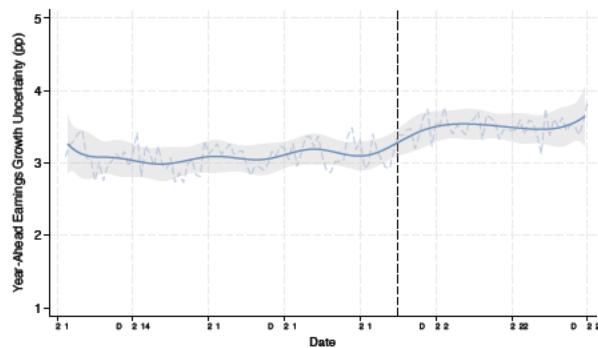
(B) Tail Probabilities
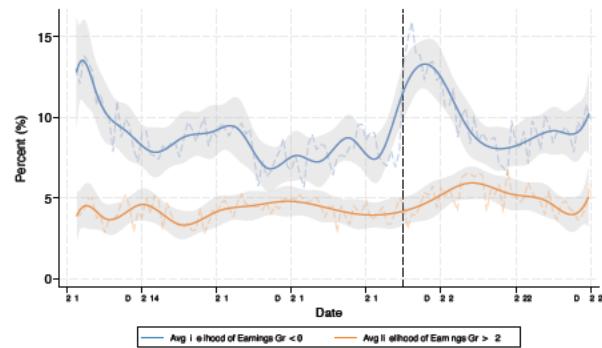
**FIGURE B21:** Heterogeneity in Earnings Growth Uncertainty over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Self-Employment

(F) By Job Type

18
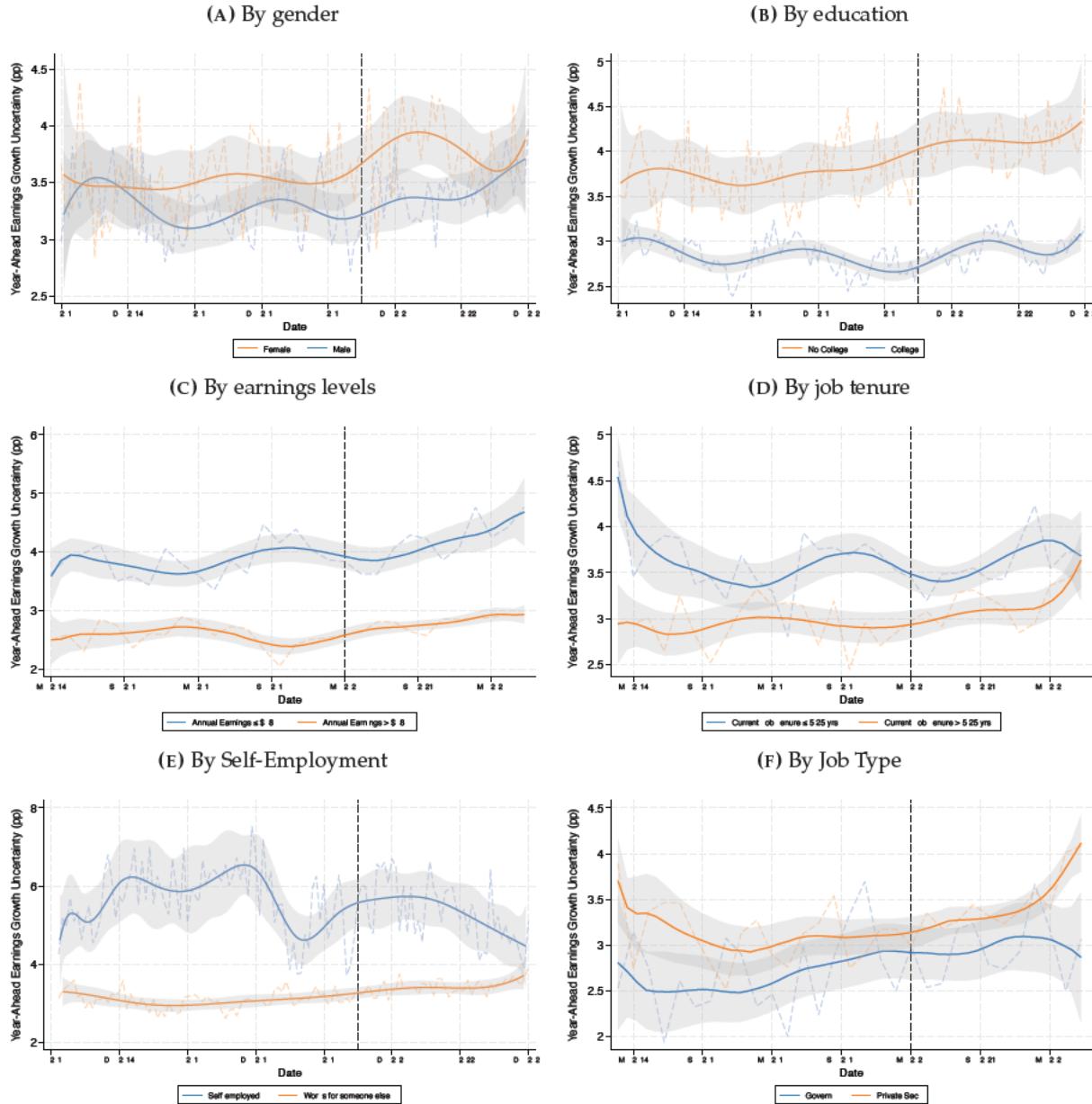
Figure B22: Heterogeneity in the Residualized Earnings Growth Uncertainty over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

**(E)** By Self-Employment

(F) By Job Type
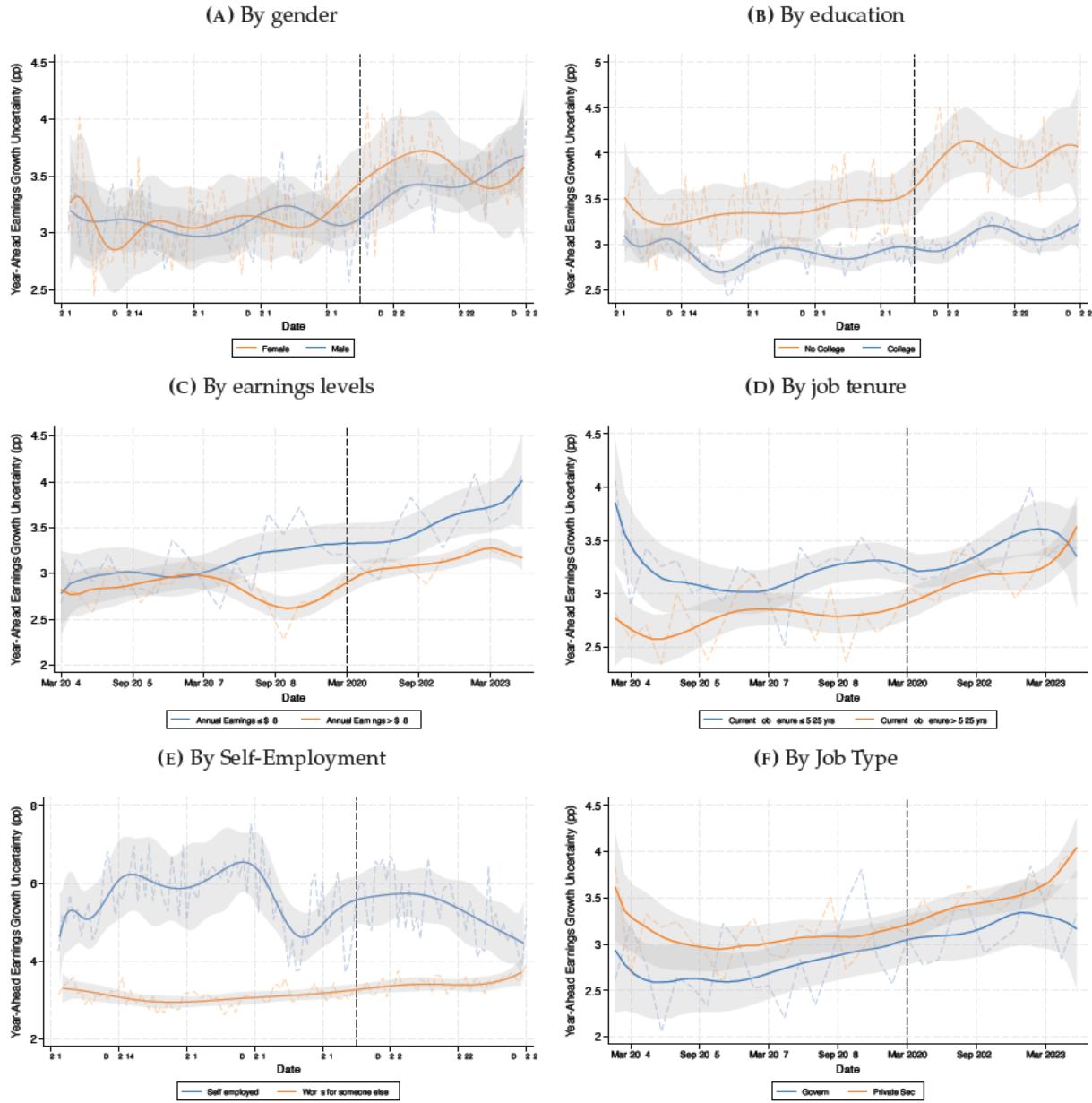
FIGURE B23: The Residualized Likelihoods of Layoff and Quit over the Business Cycle
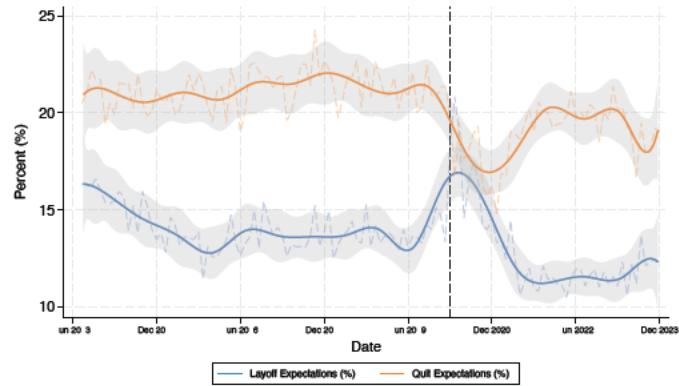
FIGURE B24: Heterogeneity in Layoff Expectations over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Job Type
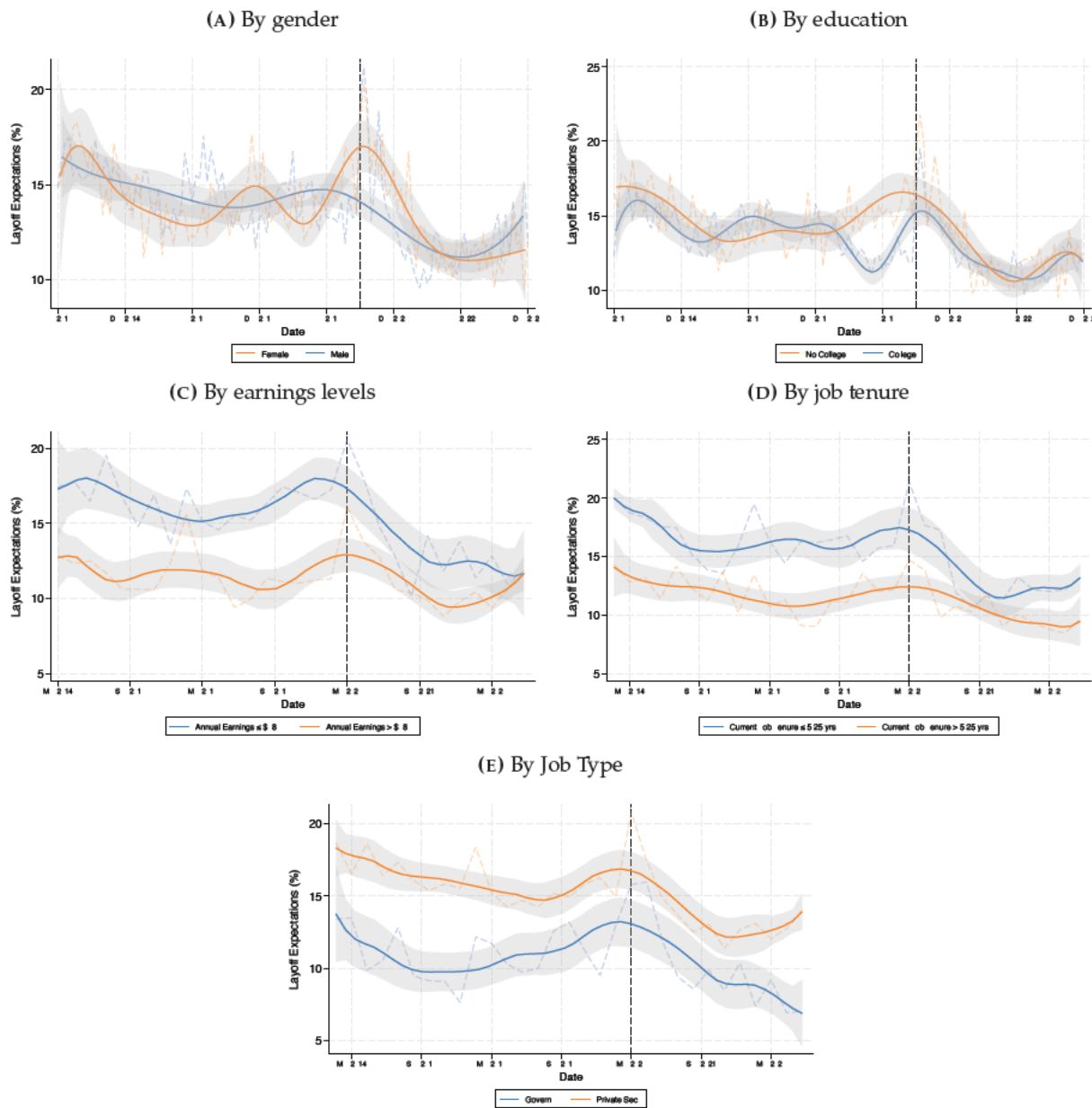
FIGURE B25: Heterogeneity in Residualized Layoff Expectations over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Job Type
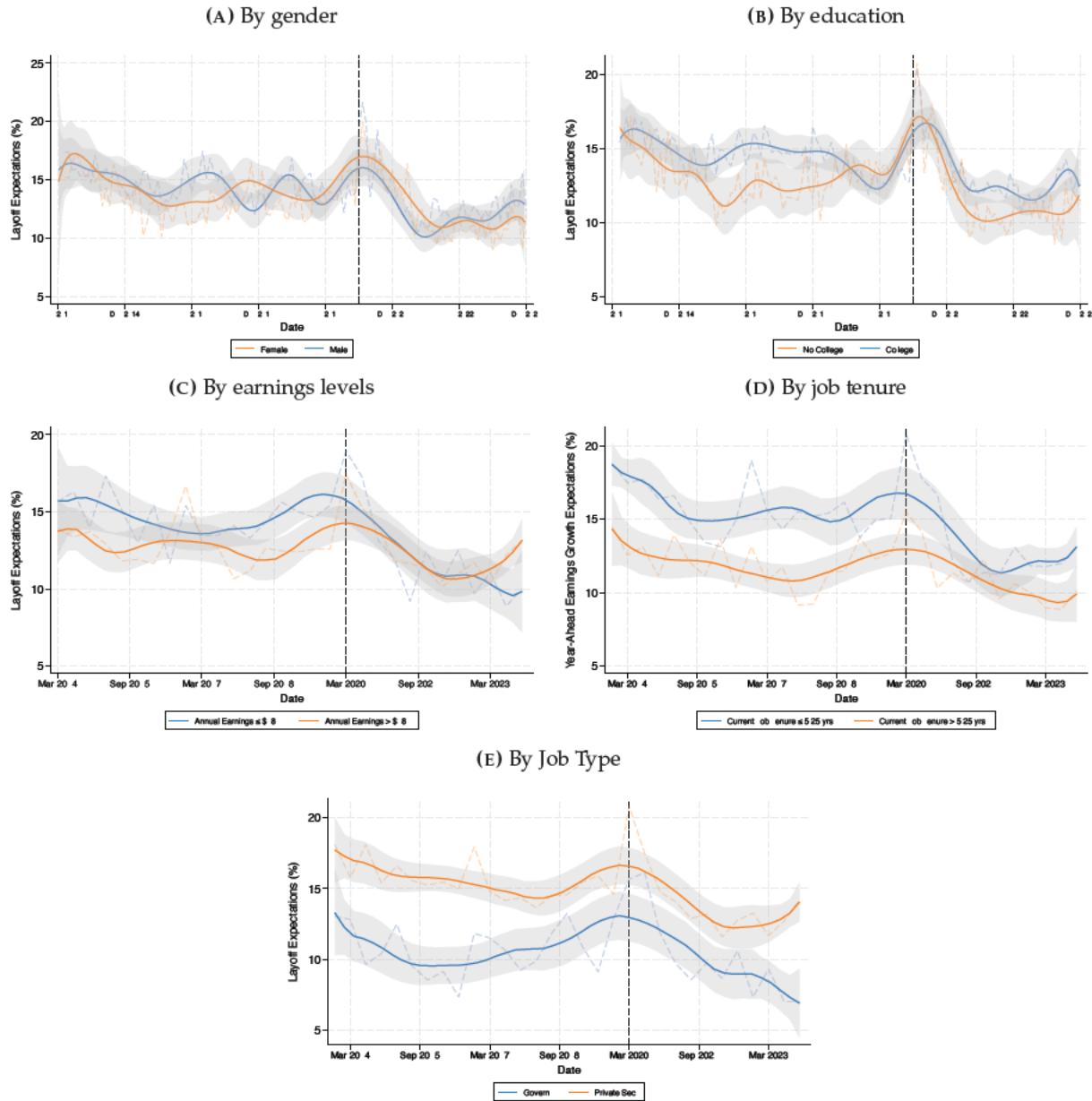
FIGURE B26: Heterogeneity in Quit Expectations over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

### (E) By Job Type
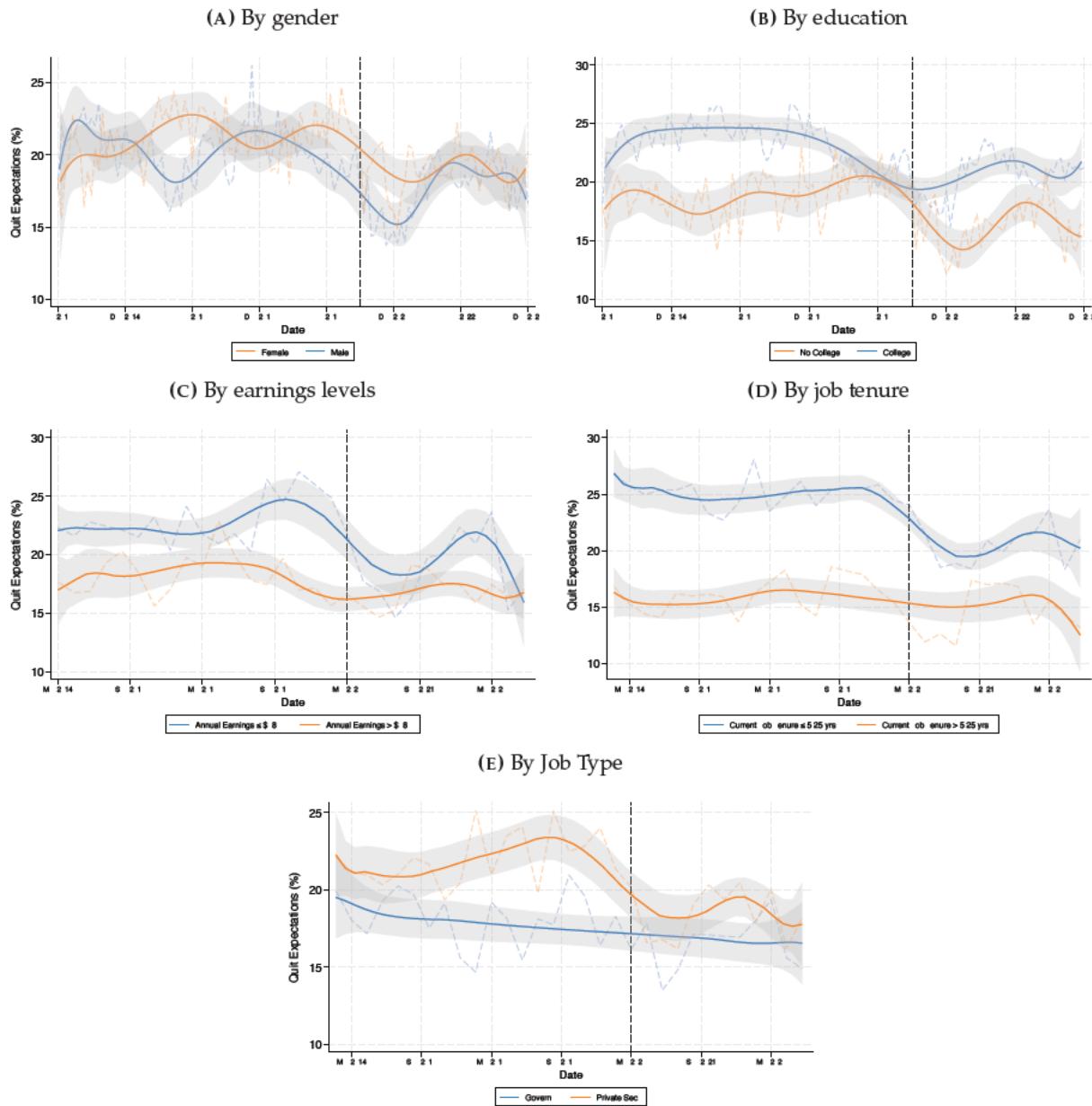
FIGURE B27: Heterogeneity in Residualized Quit Expectations over the Business Cycle

(A) By gender

(B) By education

(C) By earnings levels

(D) By job tenure

(E) By Job Type
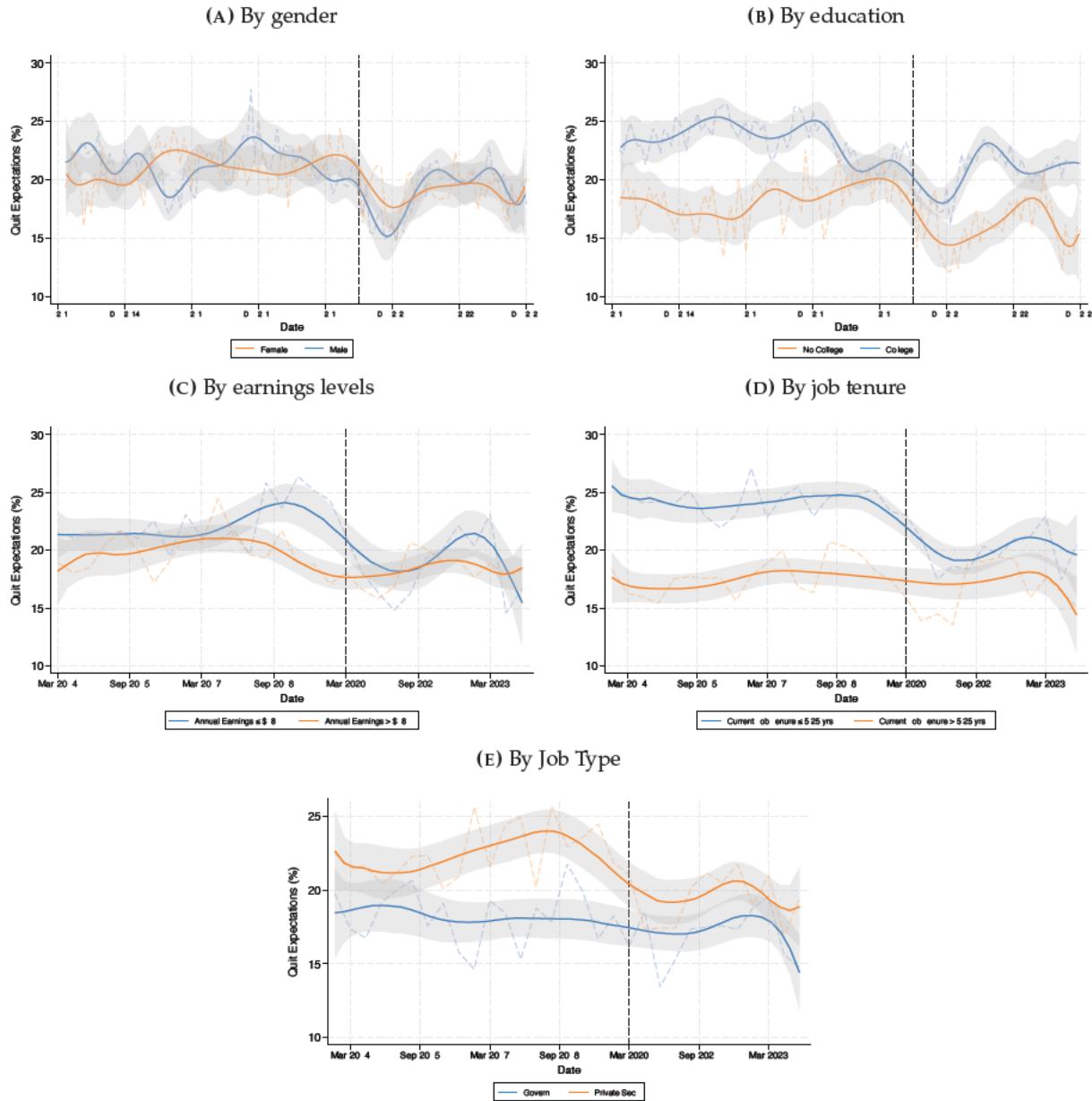
FIGURE B28: Layoffs and Quits in the JOLTS

(A) Not seasonally adjusted

(B) Seasonally adjusted


Note: The figures show the monthly quit and layoff rates from the JOLTS by the Bureau of Labor Statistics for the period between January 2013 and December 2023.
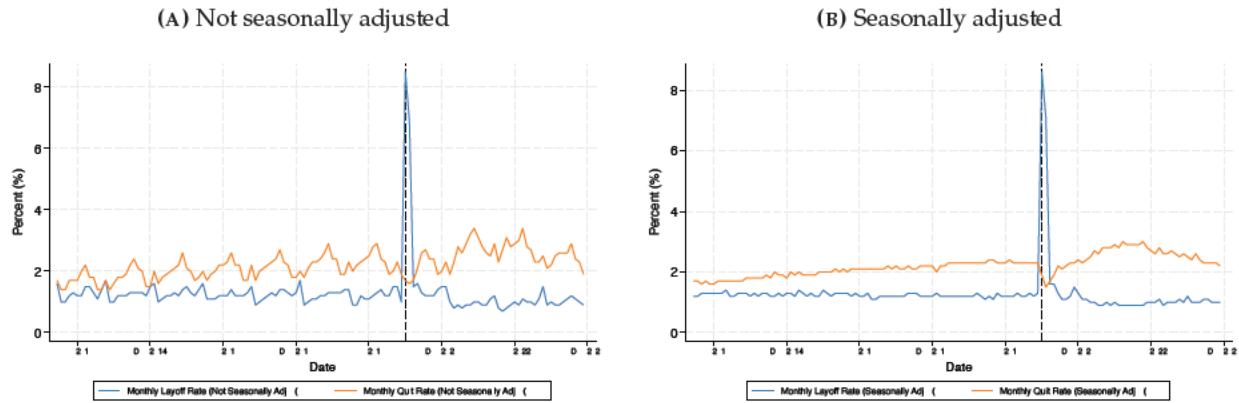
FIGURE B29: Realized Earnings Growth by Gender in the CPS
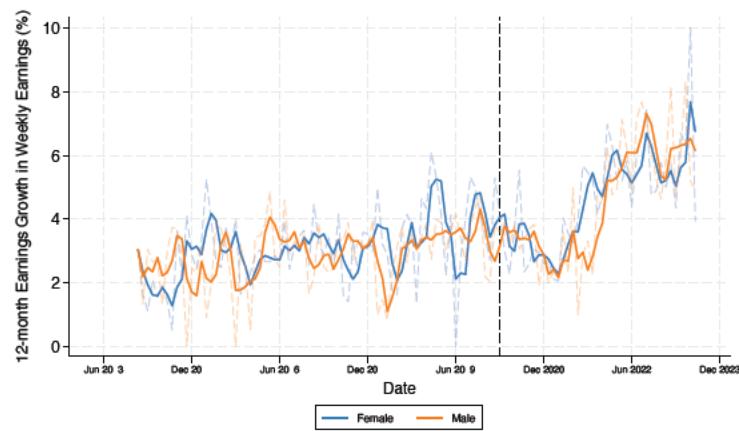
Note: The figure shows the 3-month moving average of the median annual earnings growth series by gender from the IPUMS CPS, University of Minnesota, using data for the years between January 2013 and December 2023. The details of the construction of the CPS series displayed in the figure are included in Online Appendix A.

TABLE B1: Labor Market Expectations and Demographics

	(1) Exp. Year-Ahead Earn. Gr	(2) Exp. Year-Ahead Earn. Gr.	(3) IQR of Exp. Year-Ahead Earn. Gr	(4) IQR of Exp. Year-Ahead Earn. Gr.	(5) Density Skewn. v3	(6) Density Skewn. v3	(7) Pr(Layoff)	(8) Pr(Layoff)	(9) Pr(Quit)	(10) Pr(Quit)
White	-0.129**	0.005	-1.847***	-1.727***	0.024***	0.038***	-1.883***	-1.936***	-2.520***	-2.896***
	(0.061)	(0.121)	(0.075)	(0.156)	(0.005)	(0.011)	(0.256)	(0.530)	(0.310)	(0.663)
Married	-0.053	-0.030	-0.463***	-0.266***	-0.000	-0.002	-1.790***	-1.275***	-2.690***	-2.636***
	(0.047)	(0.099)	(0.047)	(0.100)	(0.004)	(0.009)	(0.201)	(0.425)	(0.248)	(0.539)
Has child under age 6	0.072	0.048	0.082	0.087	0.009	0.012	-0.994***	-0.935*	-2.645***	-2.471***
	(0.059)	(0.115)	(0.060)	(0.122)	(0.006)	(0.012)	(0.254)	(0.477)	(0.302)	(0.606)
Female	-0.312***	-0.178**	0.020	-0.098	-0.028***	-0.026***	-1.073***	-1.219***	-0.309	-0.237
	(0.042)	(0.085)	(0.041)	(0.086)	(0.004)	(0.009)	(0.179)	(0.386)	(0.221)	(0.488)
College graduate	0.257***	-0.057	-0.976***	-0.667***	0.025***	0.026***	-0.130	1.665***	4.349***	5.758***
	(0.038)	(0.085)	(0.036)	(0.079)	(0.004)	(0.009)	(0.160)	(0.348)	(0.204)	(0.479)
$35 < \text{Age} \leq 45$	-0.619***	-0.508***	-0.377***	-0.391***	-0.036***	-0.017	0.326	0.882*	-5.203***	-5.054***
	(0.057)	(0.119)	(0.056)	(0.112)	(0.006)	(0.012)	(0.232)	(0.475)	(0.293)	(0.624)
$45 < \text{Age} \leq 55$	-0.990***	-0.789***	-0.923***	-0.679***	-0.067***	-0.035***	-0.199	1.035**	-7.523***	-6.400***
	(0.059)	(0.123)	(0.060)	(0.124)	(0.006)	(0.013)	(0.241)	(0.522)	(0.302)	(0.688)
$55 < \text{Age} \leq 65$	-1.150***	-0.798***	-1.212***	-0.891***	-0.068***	-0.044***	0.546*	1.596***	-6.282***	-4.432***
	(0.066)	(0.137)	(0.061)	(0.143)	(0.006)	(0.014)	(0.289)	(0.596)	(0.362)	(0.802)
Working FT	0.568***	0.413**	-0.916***	-0.661***	-0.016***	-0.016	-6.359***	-2.087***	-6.739***	-3.803***
	(0.068)	(0.169)	(0.071)	(0.212)	(0.006)	(0.018)	(0.324)	(0.756)	(0.369)	(0.978)
Log annual earnings		0.305***		-0.396***		0.005		-2.543***		-2.183***
		(0.077)		(0.085)		(0.008)		(0.361)		(0.441)
Working for government		-0.432***		-0.364***		-0.008		-4.461***		-3.879***
		(0.078)		(0.087)		(0.009)		(0.345)		(0.466)
Tenure at current job		-0.042***		-0.023***		-0.002***		-0.163***		-0.244***
		(0.005)		(0.005)		(0.001)		(0.024)		(0.032)
Region Dummies	X	X	X	X	X	X	X	X	X	X
Year Dummies	X	X	X	X	X	X	X	X	X	X
Dep. Var. Mean	3.127	2.995	3.462	3.038	1.121	1.124	13.853	13.370	19.862	19.648
R^2	0.023	0.030	0.090	0.078	0.008	0.009	0.024	0.047	0.034	0.056
Observations	98160	18060	98160	18060	98160	18060	89959	18217	89284	18220

Note: Density skewness v3 refers to $\frac{(p95-p50)}{p50-p5}$ of the earnings growth expectations (density means) in the sample. Tenure at current job and whether the respondent works at a government job or a private sector are asked to those who are not self-employed. These questions along with the question on earnings are only included in the Labor Market module of the SCE, which is fielded every 4 months. Robust standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.