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Wage Growth over Unemployment Spells

Lei Fang
Federal Reserve Bank of Atlanta

Pedro Silos
Temple University

Summary:

This article looks at the wage growth associated with a spell of unemployment during the past three recessions. Our main findings are threefold. First, half of all unemployed workers experience a lower hourly wage once they regain employment. Second, after an unemployment spell, older workers and those without a college degree experience lower wage growth. Third, workers who regain employment in a different industry than they were in previously tend to experience a substantial wage decline. The analysis suggests that the COVID-19 pandemic not only led to unprecedented job losses, but it could also result in sizable wage losses for a large fraction of unemployed workers as they return to employment.

Key findings:

1. Half of all unemployed workers have a lower wage after regaining employment than at their old job. For workers experiencing a wage decline, the median loss in hourly earnings is as high as 19 percent. COVID-19, therefore, has not only led to unprecedented job losses, it could also lead to a sizable wage decline for a large fraction of workers as the economy recovers.

2. Wage growth after an unemployment spell is positively associated with education. The COVID-19 pandemic has resulted in far more job losses for less-educated workers than in the previous recessions, implying that in the pandemic workers with less education are not only likelier to lose their jobs, they are also more likely to have a slower wage growth once they get jobs.

3. Losses of job- and industry-specific human capital are important causes of wage losses. The pandemic has resulted in an unprecedented fraction of workers on temporary layoffs: temporary layoff accounts for 73 percent of unemployment in May, a share that has never been over 20 percent in the past. If the pandemic ends in a relatively short period of time and workers on temporary layoffs can go back to their old jobs, human capital losses for them will be likely small, if any, so the number of unemployed who will experience wage losses will also be small. However, if the pandemic drags on and temporary layoffs become permanent layoffs, the number of unemployed who will experience human capital losses will likely be substantial—and so will wage losses.

JEL classification: J31, E24

Key words: wage growth, unemployment spell, recession, industry switching, COVID-19

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Summary: This article looks at the wage growth associated with a spell of unemployment during the past three recessions. Our main findings are threefold. First, half of all unemployed workers experience a lower hourly wage once they regain employment. Second, after an unemployment spell, older workers and those without a college degree experience lower wage growth. Third, workers who regain employment in a different industry than they were in previously tend to experience a substantial wage decline. The analysis suggests that the COVID-19 pandemic not only led to unprecedented job losses, but it could also result in sizable wage losses for a large fraction of unemployed workers as they return to employment.

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About the Authors:

Lei Fang is a research economist and associate adviser on the macroeconomics and monetary policy team in the Research Department of the Federal Reserve Bank of Atlanta. Her research areas are macroeconomics, growth and development economics, and labor economics.

Pedro Silos is an associate professor in the Department of Economics at Temple University. His research areas are macroeconomics and labor economics.

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Comments to the authors are welcome at Lei.Fang@atl.frb.org *and* pedro.silos@*temple.edu.*

1 Introduction

The COVID-19 pandemic has caused unprecedented job losses. From February through May 2020, employment fell by 13 percent, the unemployment rate increased from 3.5 percent to 13.3 percent, and the labor force participation rate decreased from 63.4 percent to 60.8 percent. The Coronavirus Aid, Relief, and Economic Security (CARES) Act provides more generous unemployment benefits to almost all unemployed in the short run. However, an unemployment spell associated with the pandemic might have a long-lasting effect on an individual's future earnings. The primary mechanism suppressing future wage growth is generally attributed to the loss of human capital that an individual accumulates through their continuous tenure in a specific job or with a particular firm or industry. Using data from past recessions, this article investigates how wage growth for someone experiencing a spell of unemployment differs across the length of the unemployment spell and across worker and job characteristics.

We use data from the Survey of Income and Program Participation (SIPP). Available data allow us to perform analysis on the last three recessions. We restrict the analysis to hourly workers as this group has the cleanest measure for hourly wage rate. We measure wage growth before and after an unemployment spell as the percent change between the first wage at the new job and the last wage at the old job.

A striking result is that half of all unemployed workers have a lower wage after regaining employment than at their old job. For workers experiencing a wage decline, the median loss in hourly earnings is as high as 19 percent. COVID-19, therefore, has not only lead to unprecedented job losses, it could also lead to a sizable wage decline for a large fraction of workers as the economy recovers.

The evidence shows that wage growth after an unemployment spell is negatively associated with age and positively associated with education. The former is consistent with the hypothesis that losses of job-specific human capital increase with tenure. The latter is consistent with the hypothesis that less-educated workers possess less human capital to bring with them as they change jobs. The COVID-19 pandemic has resulted in considerably greater job losses for less-educated workers than the previous three recessions caused, implying that in the pandemic workers with less education are not only more likely to lose their jobs, but they are also more likely to have slower wage growth once they become employed.

As we noted, workers who change industries after an unemployment spell suffer substantial wage losses—with the exception of those who work in low-skilled services industries. The reason could

be that human capital accumulated in one industry is not as valuable as in another industry. The losses in wages are particularly large for manufacturing and construction workers, who land a job in other industries. Because COVID-19 caused the largest job losses in low-skilled services industries, wage losses resulting from industry switching could be small.

Losses of job- and industry-specific human capital are important causes of wage losses. The COVID-19 pandemic has resulted in an unprecedented fraction of workers on temporary layoffs: temporary layoff accounts for 73 percent of unemployment in May, and this share has never been higher than 20 percent in the past. If the pandemic lasts only a relatively short period and workers on temporary layoffs can go back to their old jobs, human capital losses for them will be likely small, if any, and the number of unemployed who will experience wage losses will also be small. However, if the pandemic drags on and layoffs go from temporary to permanent, the number of unemployed who will experience human capital losses will likely be substantial—and their wage losses will be, as well.

2 Wage Growth Distribution

2.1 Data and Sample Selection

Maintained by the U.S. Census Bureau, the SIPP is a longitudinal survey that asks households to report monthly information on earnings, hours worked, industry, occupation, and demographics. The available data cover the past three recessions, and we have labeled them throughout this article by the reference years 1991, 2001, and 2008.

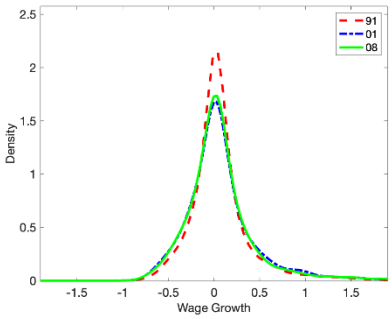
We restrict our analysis to hourly workers. This group represented about 44.6 percent of all workers in 1991, 50.6 percent of all workers in 2001, and 49.1 percent of all workers in 2008. Our reason for focusing on this group is that it provides the cleanest measure for the price of labor: a wage rate for each hour they work. The remaining workers—those compensated with a monthly or annual salary—do not report such a measure, requiring us to infer it from their responses about total earnings and total hours worked. As hours reported in the SIPP could be notoriously inaccurate, including much missing data, we discarded data about salaried workers.

2.2 The Distribution of Wage Growth

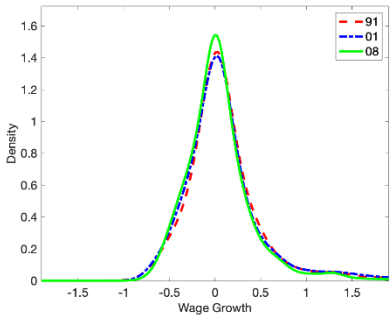
The wage growth after an unemployment spell is calculated as the percent change in wages between the first wage earned after finding a job and the last wage earned in the last employment spell. Figure 1 plots the cross-sectional distributions of wage growth for short-term unemployment spells (four months

or less) and long-term spells (longer than four months) in the last three recessions.[1] A negative value indicates a wage cut, and a positive value indicates wage growth.

Figure 1: Wage Growth Distribution



Short-term unemployment



Long-term unemployment

Source: Survey of Income and Program Participation

Notice that the distribution of wage growth is quite similar across the three recessions: for both short-term and long-term unemployment, the distribution is almost symmetric about zero, and in fact the median wage growth is exact zero. About half of unemployed workers had a wage cut at the new job, an observation that contrasts with the conventional wisdom that nominal wages cannot decline much. In fact, the decline can be substantial for many workers. The median wage loss for workers who had a lower wage at the new job is 17–19 percent for the short-term unemployed and 17–20 percent for the long-term unemployed. COVID-19, therefore, not only led to unprecedented job losses—it could also lead to sizable wage and income losses for a large fraction of workers with an unemployment spell.

3 Worker Characteristics and Wage Growth

Here, we measure the statistical relationship between worker characteristics and wage growth. We regress the wage growth before and after an unemployment spell on worker characteristics including age, gender, marital status, education, ethnicity, whether the worker resides in a metropolitan area, the length of the unemployment spell, and whether the worker found new employment in a different

[1] We use four months to divide short and long spells because SIPP is a four-month rotation panel, and individuals tend to report similar wages and labor market status for each of the four months.

industry. In this section, we summarize the regression results. Please refer to Fang and Silos (2012) for details.[2]

Age is a negative factor for the wage differentials before and after an unemployment spell, and the negative effect is larger for the long-term unemployed than for the short-term unemployed. This finding is consistent with the argument that losses of job-specific human capital increases with tenure. COVID-19 disproportionately results in more unemployment among younger workers. In May, the unemployment rate between the age groups 16–24 and 25–54 differs by 13.7 percentage points, compared with a high of 10.4 percentage points at the peak of unemployment during the Great Recession. The change in the age composition of the unemployment pool implies that wage losses resulting from age factors might be small.

Workers without college degrees experience lower wage growth after an unemployment spell. The pandemic has disproportionately resulted in more unemployment of those without a college degree. In May the unemployment rate between high school and college graduates differed by 7.8 percentage points, compared with 5.3 percentage points at the peak of unemployment in the Great Recession. Not only does this finding imply that workers with less education are more likely to lose their jobs in the pandemic, it implies that they are also likelier to have slower wage growth once they regain employment.

Marriage is also a negative factor for wages, perhaps reflecting the fact that married individuals are more eager to return to work and therefore more willing to accept a lower wage. As for gender, women tend to have higher wage growth than men after experiencing an unemployment spell. In addition, race and whether one resides in a metropolitan area do not have a significant impact on wage growth.

After an unemployment spell, most workers who find jobs in another industry experience a fairly large wage cut, perhaps because the human capital accumulated in one industry has less value in another industry. Construction and manufacturing workers experience the largest wage cut. The Great Recession produced some staggering results: the average wages for workers exiting construction fell 19 percent, and for workers exiting manufacturing, they fell 10 percent. The transition from low-skill

[2] Fang, Lei, and Pedro Silos. 2012. Wages and unemployment across business cycles: A high-frequency investigation. Federal Reserve Bank of Atlanta working paper 2012-16. https://www.frbatlanta.org/research/publications/wp/2012/16.aspx

services (for example, household services, transportation, retail, hotel and restaurant, and entertainment) to other industries brings wage increases of roughly 10 percent. However, this result is driven by the fact that low-skilled services jobs are the lowest-paid jobs, so finding jobs in other industries will likely increase wages.

As we noted earlier, employment in low-skilled services took the hardest hit from COVID-19. Employment declined by 23 percent in low-skilled service industries compared with a 7 percent decline elsewhere. Because low-skilled services industries saw the largest job losses as a result of COVID-19, wage losses due to industry switching could be small. But given the unprecedented job loss in almost every industry, the more important question is whether low-skilled services workers will be able to find jobs in other industries.

4 Conclusion

This article provides an empirical investigation of wage growth for workers experiencing an unemployment spell during a recession. The COVID-19 pandemic has caused much greater unemployment than in the past three recessions. Our study suggests that a large fraction of these workers could experience lower wages when they regain employment. Based on prior episodes of high unemployment—although the wage loss is severe for older, married, and less-educated workers—workers who end up changing industries tend to suffer the largest wage declines.