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Income in the Off-Season: Household Adaptation to Yearly Work Interruptions

John Coglianese
Federal Reserve Board of Governors, john.m.coglianese@frb.gov

Brendan M. Price
Federal Reserve Board of Governors, brendan.m.price@frb.gov

Job Creation Policies Can Raise Local Employment Rates

interventions, should strongly encourage such job creation targeting.

Research should also consider how to better link the nonemployed, particularly those in distressed neighborhoods, with job creation throughout the local labor market. Job creation policies might boost employment rates even further if residents of distressed neighborhoods had greater job access, such as through neighborhood-targeted programs to improve transportation, job information, and job training. A focus on neighborhoods for job-linking makes sense, but focusing on neighborhoods for job creation makes less sense, as neighborhoods are not local labor markets.

Notes

1. Because of measurement problems with data for smaller counties or CZs, I focus on a sample of 609 counties that each have a population of at least 65,000 and are located in one of 205 CZs of population 200,000 or greater. These counties and CZs respectively cover 79 percent and 88 percent of the U.S. population. I calculate local employment rates using data from the 2000 census and several waves of the American Community Survey, covering years 2000–2018. I construct simulated job growth measures using industry employment data at the county level from the Upjohn Institute's WholeData, which is derived from the Census Bureau's County Business Patterns.

2. As shown in the two papers, it is the percentage effect of job shocks that will drive the benefit-cost ratio.

Reference

Bartik, Timothy J. 2020. "Using Place-Based Jobs Policies to Help Distressed Communities." *Journal of Economic Perspectives* 34(3): 99–127.

Timothy J. Bartik is a senior economist at the W.E. Upjohn Institute for Employment Research.

Income in the Off-Season

Household Adaptation to Yearly Work Interruptions

By John Coglianese and Brendan M. Price

Many workers experience seasonal jobless spells. Each winter, for instance, many construction and agricultural laborers are laid off as adverse weather impedes outdoor activity. Similarly, retail workers are often let go after Christmas, while school employees are commonly furloughed during summer recess. If not offset elsewhere, earnings losses from seasonal layoffs can lead to sharp reductions in household income.

But the prevalence of seasonal work interruptions is often obscured in official statistics, for two reasons. First, economic data are typically reported on a seasonally adjusted basis to smooth out any predictable fluctuations that occur at the same time each year. Seasonal adjustment makes it easier to detect long-term trends or changes in the business cycle, but it can also lull us into viewing seasonality as little more than a statistical nuisance. Second, the "off-season" occurs at different times for different workers, which leads aggregate statistics to understate the pervasiveness of seasonality even when they haven't been seasonally adjusted. For example, construction workers and school bus drivers both undergo seasonal layoffs, but their combined employment is comparatively stable throughout the year because one group is usually working when the other is not. Thus, aggregation tends to mask the share of households subject to seasonal swings in employment and earnings.

How do households adapt to seasonal work interruptions? To answer this question, we first devise a new method for identifying seasonal workers in labor market data. As detailed below, we take advantage of the fact that seasonal employment leaves a tell-tale data signature: a tendency for certain workers to experience recurrent job losses spaced exactly 12 months apart. Building on that observation, we develop a data-driven procedure for classifying job separations as seasonal or nonseasonal in nature.

With this method in hand, we trace the evolution of both *individual earnings* and *household incomes* as seasonal workers pass through their particular off-seasons. In the aftermath of job loss, seasonal separators exhibit an initial period of rapid earnings recovery punctuated by a second drop in earnings one year later. These

ARTICLE HIGHLIGHTS

■ *Seasonal work interruptions lead to sharp (if short-lived) reductions in income for many U.S. households.*

■ *We identify seasonal workers based on their tendency to undergo repeated job losses spaced exactly 12 months apart.*

■ *For every $1.00 a household loses due to a seasonal reduction in earnings, its overall income falls by about $0.81.*

■ *Seasonal losses in earnings are mitigated by unemployment benefits but amplified by concurrent reductions in spousal earnings.*

■ *Our findings raise important questions about the design of government transfer programs, which often do not account for the episodic nature of seasonal work.*

recurrent earnings losses are echoed in household income, a broader concept that encompasses government transfers and other nonlabor income as well as the earnings of all household residents. For each $1.00 a worker loses due to a seasonal work interruption, household income falls by $0.81 on average.

Our findings suggest that seasonal work interruptions are an underrecognized source of income volatility for many households, especially those at the lower end of the income distribution, and they raise important questions about the design of social safety net programs.

Identifying Seasonal Work Interruptions

How can we identify which workers are seasonally employed? One approach would be to simply ask workers if their jobs are seasonal. In practice, however, this question is not typically asked in the main economic surveys of U.S. households. Another approach would be to classify certain industries as seasonal and others as nonseasonal, based on the typical employment patterns we see in these industries. The problem with this latter approach is that, even in industries subject to clear seasonal forces, some jobs last year-round: for example, construction employment plummets in cold northern states each winter but is fairly stable year-round in warm southern states. Whether we classify the construction sector as seasonal or as nonseasonal, we would inevitably misclassify many of its workers.

Instead, we adopt a data-driven approach rooted in the idea that seasonal workers will tend to experience recurrent job separations spaced 12 months apart. To illustrate, consider a school cafeteria worker who is laid off in June. If (as is likely) the worker resumes cafeteria work at the start of the school year, he or she is likely to be laid off again the following June. Similar reasoning applies to ski instructors laid off in April and (at least

in cold states) to construction workers laid off in December.

To test this idea, we use anonymized data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP) to track employment patterns over time for a representative sample of adults ages 25 to 54. Using this sample, Figure 1 plots the probability that a worker who experiences an initial separation from employment into nonemployment goes on to experience another such separation in each of the 18 months that follow. The spike in this probability at 12 months, relative to the probabilities at neighboring horizons, indicates that a disproportionate number of job separations are indeed spaced exactly 12 months apart. Confirming our supposition that annually recurrent job separations are a signifier of seasonal work, they are concentrated in highly seasonal sectors such as agriculture, recreation, and educational services.

Although annually recurrent jobless spells are a hallmark of seasonal employment, they do not *perfectly* distinguish seasonal

workers from nonseasonal workers. Some seasonal workers transition seamlessly to alternative employment when their seasonal jobs end, so that they are never out of work. To avoid overlooking such individuals, we classify workers as seasonal on the

Seasonal employment leaves a telltale data signature: certain workers experience recurrent job losses spaced exactly 12 months apart.

basis of whether they appear *likely* to experience annually recurrent separations, regardless of whether they actually do so.

Taking a sample of workers who experience an initial job separation, we use machine-learning techniques to estimate each worker's excess propensity to separate again 12 months later as a function of four inputs: their baseline industry, occupation, and state of residence, as well as the calendar month in which their original job loss occurred. The algorithm we use hunts efficiently for

Figure 1 The Probability of Job Separation Spikes 12 Months after an Original Separation
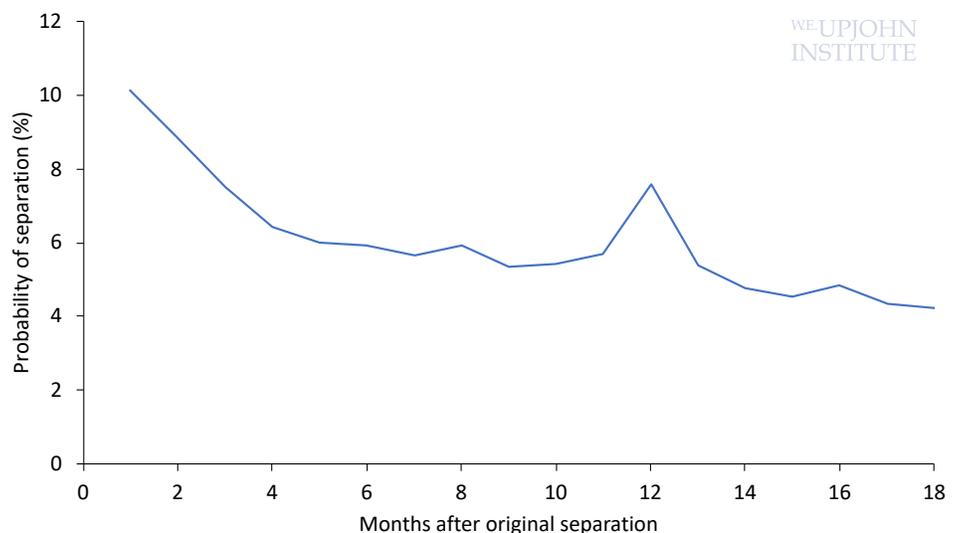
SOURCE: Survey of Income and Program Participation and authors' calculations.

combinations of these four inputs that are predictive of annually recurrent job loss. Construction provides a case in point: consistent with our intuition, our method classifies newly jobless construction workers as seasonal separators if they exited from employment in a cold state at the onset of winter, but not otherwise.

Tracking Household Earnings and Income

Having developed a method for identifying seasonal work interruptions, we next analyze the trajectory of household earnings and income as workers pass through their particular off-seasons.

To do so, we build a sample of seasonal workers who experience at least one week of joblessness upon the cessation of a seasonal job. The blue series in Figure 2 plots the evolution of these workers' average monthly earnings over the ensuing 18 months, relative to their preseparation earnings. Average earnings fall sharply in the

month of the original job loss (and further still in the subsequent month), bottoming out roughly 60 percent below preseparation earnings. In the months that follow, seasonal workers experience steady recovery in their average earnings, as some are rehired by their previous employers and others find brand-new jobs.

As they approach the anniversary of their original job losses, however, many seasonal workers see their earnings fall a second time. These recurrent earnings losses, which mirror the recurrent job separations we saw earlier, reflect the fact that seasonal workers are once again entering their off-seasons, when they are likely to face reduced hours or outright layoff. Between the 10th and 13th months after the original separation, seasonal workers' average earnings fall by an amount equal to 18.6 percent of their baseline earnings.

But a given worker's earnings are only one component of overall household income. First, many households contain additional workers,

such as a spouse or unmarried partner or a child old enough to work. Second, households also receive transfer income from unemployment insurance and other government programs. Finally, some households receive other forms of nonlabor income, such as dividends or income from rental properties. In theory, seasonal reductions in earned income could either be mitigated or exacerbated by concurrent shifts in income along any of these other margins.

To see whether households recoup the earnings lost due to seasonal work interruptions, the orange series in Figure 2 shows the evolution of average household income. To facilitate apples-to-apples comparisons between earnings and income, we express changes in household income as a percentage of baseline *earnings*, rather than baseline *income*. This way of representing the data makes it easy to gauge the degree to which seasonal earnings losses pass through to lower household income. If the blue and orange series coincide in every period, we would conclude that seasonal earnings losses translate dollar for dollar into lower income. At the other extreme, if the orange series were to equal zero in every period, it would mean that every dollar in foregone earnings is being offset by an increase in some other component of income. More generally, the closer the income series tracks the earnings series, the greater the rate at which earnings losses translate into household income losses.

Indeed, changes in seasonal workers' household incomes closely track changes in their own earnings. During the off-season period from 10 to 13 months after the original separation, household income falls on average by an amount equal to 15.1 percent of baseline earnings. Comparing the declines in earnings and income, we find that household income falls by fully $0.81 for each $1.00 seasonal reduction in earnings.

Figure 2 Seasonal Workers Experience Yearly Declines in Both Earnings and Income
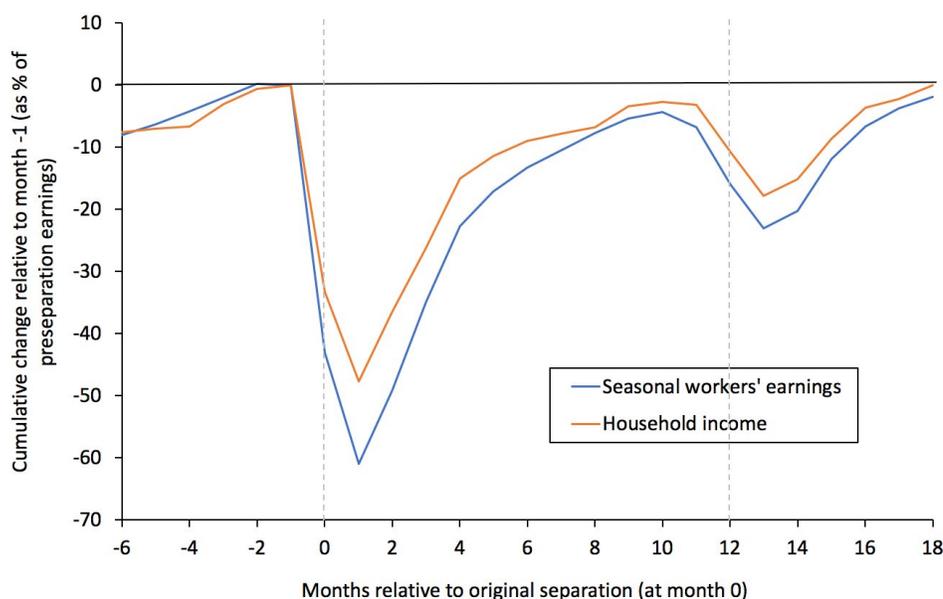
SOURCE: Survey of Income and Program Participation and authors' calculations.

The Margins of Household Adaptation

To understand why households recoup only one-fifth of seasonal earnings losses, we split household income into its constituent parts. Unemployment insurance is the main source of income recovery: seasonal workers rely heavily on unemployment benefits, which offset roughly one-third of their lower earnings. Other components of the social safety net appear to play at most a minor role in replacing earnings lost due to seasonal work interruptions.

What about income earned by other members of the household? Researchers have often found that spouses of displaced workers tend to work more to offset the earnings loss from a layoff. Surprisingly, we find that spousal earnings (or those of an unmarried partner) *decline*, on average, during a seasonal worker's off-season. Thus, in contrast to the so-called *added worker effect* observed after mass layoff events—whereby nonworking partners tend to enter the labor market to cushion the fall in income—we find a *subtracted worker effect*.

This counterintuitive finding suggests that the timing of seasonal downturns is somewhat correlated within households. For example, both partners might work in the tourism industry in the same location and thus be jointly exposed to the same seasonal cycle. Far from acting as a stabilizing influence, then, spousal earnings contribute to the high rate at which seasonal earnings losses translate into lower household income.

Policy Implications

Our research shows how seasonal fluctuations in labor demand contribute to volatility in household income. Now, it may be the case that households anticipate seasonal work interruptions and build up sufficient savings to weather seasonal reductions in income with little change in expenditures. But researchers have consistently found that consumption patterns closely track the timing of income receipt, even in cases where fluctuations in income are very predictable (as with paycheck receipt or the timing of transfer payments). If the same is true for seasonal work interruptions—as it likely is—then seasonal forces add volatility to household consumption as well as to earnings and income.

With this in mind, the episodic nature of seasonal work may have important ramifications for the design of the social safety net. First, some government programs do not readily accommodate workers who deviate from full-year employment. For instance, recently proposed new work requirements for Medicaid would limit eligibility to workers who maintain sufficient employment each month, which could result in seasonal workers losing their eligibility during the off-season. Second, some transfer policies may not be disbursing benefits during the portion of the year when seasonal workers are most in need of assistance. Tax credits like the EITC are typically rebated annually in a single lump-sum payment issued in the spring. Aligning these payments with the times when seasonal workers are typically unemployed could help replace lost income during lean periods and make it easier for households to maintain steady levels of consumption. Since seasonal jobs are largely concentrated in low-wage industries, such a policy might have particular benefits for families on the lower rungs of the economic ladder.

John Coglianese and Brendan M. Price are economists at the Board of Governors of the Federal Reserve System.

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