Intra-Year Employment Instability and Economic Wellbeing Among Urban Households: Mitigating Effects of the Social Safety Net

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Abstract

Labor market structures and job characteristics have changed in the United States over the last few decades – often making work more unpredictable. Employment instability, or job churning, may have distinct consequences for households’ economic well-being. Meanwhile, American social policies have shifted from cash-based benefits toward in-kind and work-conditioned programs. Yet, we know little about how social programs buffer the financial hardships imposed by economic shocks due to job churning. This paper harnesses novel data collected at 3-month intervals to study the associations between household members’ employment trajectories and (1) household income packages, (2) poverty status, and (3) material hardships, paying particular attention to whether government benefit receipt buffers against the adverse financial consequences of unstable employment. We find that consistent unemployment is most strongly associated with low income and poverty but not material hardship. Unstably employed households have almost twice the likelihood of experiencing all domains of material hardship relative to consistently employed households. Our results also suggest that cash transfers buffer against the negative impact of persistent unemployment, while in-kind transfers buffer against the impacts of unstable employment. Altogether, the results highlight the roles and extent of impacts of cash, in-kind benefits, and tax system, which can inform future policy recommendations in an age of high levels of economic inequality.

Keywords: job loss, poverty, social safety net, economic well-being

Introduction

Economic life is quite fluid for contemporary American families, as earnings and other income sources tend to fluctuate between or within years. In recent decades, the research community has gradually paid attention to short-term, within-year changes in income and their implications for families and their children's wellbeing (Gennetian et al., 2015; Hill et al., 2013; Morrissey et al., 2020). Such instability in income can result from multiple factors, including job mobility, unemployment, and variations in hours worked (Gottschalk et al., 1994). In fact, with the rise in precarious work (Kalleberg & Vallas, 2018), more and more workers encounter frequent and uncertain job churning, juggle multiple jobs (Morduch & Schneider, 2017), or hold low-wage jobs with unpredictable tenure and in-job scheduling (Hollister, 2011; Lambert & Henly, 2013; Schneider & Harknett, 2019). While recent studies have focused on within-job instability (Schneider & Harknett, 2021), particularly on month-to-month instability in hours (LaBriola & Schneider, 2020) and intra-year between-job instability, another pivotal aspect of employment instability is still underexplored. Various intra-year work trajectories may have distinct consequences for households' economic well-being. As a result, some families fall into poverty or suffer from other unmet economic needs.

On the social-policy front, despite the complexity of frequent employment volatility as it relates to program eligibility, how U.S. social welfare programs respond to within-year employment trajectories is poorly understood. Exploring the extent to which safety net programs do or do not stabilize economic wellbeing in the midst of employment precarity and uncertainty could better inform policy practices and social service delivery. To fill this gap, we use novel data collected every three months from urban households to understand employment trajectories over the course of a year and how they relate to (1) household income packages, (2) poverty

status, and (3) material hardships. We pay particular attention to whether social welfare benefit receipt buffers the adverse financial consequences of unstable employment.

Involuntary job loss can be quite devastating for low-income families, who may lack the savings or other liquid assets necessary to minimize the impact of a job loss. Approximately 70 percent of low-income individuals report unstable incomes (Federal Reserve System, 2014); they also report that stable, albeit lower, incomes are preferable to somewhat higher but unpredictable incomes or involuntary turbulence in labor force activities (Morduch & Schneider, 2017; Hill et al., 2013). Frequent intra-year job transitions are of particular concern because repeated employment swings may signal unpredictability in a family's economic life. To some extent, these factors appear to be the compounded results of work automation and limited access to safety net programs. With technological change, low-skilled jobs are increasingly being replaced by automated facilities, which inevitably push less-educated or low-skilled workers to the edges of the competitive labor market (Parolin, 2020). However, those with moderate earnings might also be affected. Between 2006 and 2014, low- and mid-wage workers comprised more than eighty percent of all people experiencing job loss (Bernhardt, 2012).

Instability and lack of access to credit drives many families with children into poverty at some point within a given year (Jencks, 2016). In addition, in the aftermath of the 1996 welfare reform, government safety net programs have shifted from cash-based benefits toward in-kind programs and have increasingly incorporated work requirements into their eligibility criteria (Hardy, 2017; Hardy et al., 2019; Hill & Ybarra, 2014; Moffitt, 2013; Pac et al., 2017). This might trigger limited access to cash benefits for impoverished individuals who cannot work or cannot *consistently* work. In fact, because low-income families often lack control over the consistency of their employment and work hours, intermittent receipt of benefits may be

necessary to retain a minimal standard of living, particularly if continuous, reliable minimal income packages are unavailable. Families with unstable labor market activities might encounter difficulty obtaining or sustaining social welfare benefits because their earnings are used to determine benefit eligibility at a given point in time, regardless of the fact that they may vary substantially over short periods of time (Hill & Ybarra, 2014). Therefore, the effectiveness of safety net responses to the unstable economic lives many disadvantaged families experience remains unclear.

Rather than conceptualizing employment as a dichotomous, static state, understanding frequent transitions between jobs over time as a key dimension of contemporary low-wage employment precariousness is of great interest to researchers, policy practitioners, and the public. Precarious employment not only has substantial implications for individuals' self-sufficiency and family well-being, but is also linked to the more fundamental issue of poverty in society and the response from the public sector. Prior employment-relevant studies often use data collected only once a year or less frequently, sometimes at uneven time intervals. To address this issue, we examine within-year unstable employment and its material consequences. The second contribution of our work is to examine both chronic and recurrent unemployment using a longitudinal lens. Furthermore, we distinguish between trajectories of downward and upward job mobility and their distinct implications for family economic well-being. Third, we separately investigate the role of cash and in-kind benefits in cushioning the adverse effects of chronic unemployment and unstable employment.

Using a population-based sample of New York City residents, we document that over one half of surveyed adults experience precarious employment within their households over a one-year period, with a substantial fraction encountering the loss of a job without subsequently

gaining a new one. Although poverty rates appear substantially higher among the consistently unemployed and those experiencing employment instability relative to those that are stably employed, unstably employed households are hit the hardest in terms of all forms of economic and material hardships. Results are particularly pronounced for households headed by a single adult (those with no spouse or partner present). Finally, we find that cash benefits supplement a larger portion of financial loss for consistently unemployed families than unstably employed families, whereas those experiencing employment instability tend to benefit more from in-kind benefits.

Background

Employment instability is one of the crucial factors explaining increasing income inequality. Prior literature has provided evidence supporting the claim that changes in the distribution of employment can account for a significant share of the secular increase in inequality in some Western countries (Atkinson, 1996). As such, there is good reason to assume that the present exacerbation of income inequality could be explained partially by increasing levels of job churning. The gap in income change between the highest-income group and the lowest-end household has been fivefold since the 1980s and, unsurprisingly, the poorest households experience more frequent income variability than their more affluent counterparts (Morris et al., 2015; Morduch & Schneider, 2017). Frequent variation in labor market activities is unquestionably linked with household income flows given that income variability is most likely to occur as a result of changes in earnings (Dahl et al., 2011; Gottschalk & Moffitt, 2009) and employment volatility (Wolf et al., 2014). Notably, although employment volatility jeopardizes poor households' economic wellbeing, slightly better off households are not exempt from such risk. Indeed, risk of job loss or between-job instability in the U.S. are becoming

equally distributed across all income levels (Farber, 2005). Yet, the consequences of increasing labor market instability remain relatively under-explored.

The structure of the modern U.S. safety net adds to the growing complexity described above. In a context of liquidity constraints, households may struggle to borrow or be forced to borrow at a very high cost in order to smooth consumption of periods of variable earnings (Haider, 2001). It is reasonable to expect that social programs may ease the financial tension produced by unstable employment. However, the extent to which households can quickly and intermittently access such benefits is unclear. It is also unclear whether and which social welfare programs may be better designed for assisting the stably unemployed and those facing unstable employment. Evidence suggests that in-kind benefits, particularly the Supplemental Nutrition Assistance Program (SNAP), appear to be effective to in stabilizing income when earnings volatility or income shocks occur (Gunderson & Ziliak, 2003; Hernandez & Ziol-Guest, 2009) and boost income growth at the bottom end of the income distribution (Wimer et al., 2020), but we know less about the extent to which cash assistance programs, such as Temporary Assistance for Needy Families (TANF), play a similar role. More generally, recent research suggests that governmental transfers play a larger role in raising average household incomes than in buffering against intra-month income fluctuations (Morduch & Siwicky, 2017) and that limitations in safety net responsiveness to increasing employment instability may have exacerbated income volatility among low-income households in recent years (Hardy, 2017). In our analyses, we are careful to separately assess the potential buffering effects of cash and in-kind programs on economic hardship among families experiencing consistent unemployment and those experiencing employment instability.

Measurement of labor market precariousness in prior studies reflects the limitations of existing data. Researchers have utilized job characteristics (nonstandard work schedule [full time and part time] or day and night shifts) and measures of the number of jobs held to approximate employment instability (Morduch & Schneider, 2017; Pilkauskas et al., 2016; Wolf et al., 2014). However, relying solely on measures such as nonstandard work schedules may not sufficiently capture unanticipated employment instability. In addition, most studies rely on data from surveys conducted annually or with intervals of greater than one year, which might omit the nuance of short-term precarious work (Pilkauskas et al., 2016; Lambert et al., 2014). Thus, we know relatively little about intra-year volatility in work intensity (Finnigan & Hale, 2018; LaBriola & Schneider, 2020). Moreover, while a few recent studies have utilized data from the Survey of Income and Program Participation (Finnigan & Hale, 2018) and the rotating panel design of the Current Population Survey (LaBriola & Schneider, 2020), both of which capture intra-year work patterns, to examine predictors of intra-year work instability (volatility in weekly hours worked), we are not aware of prior studies to examine associations of intra-year work instability with subsequent economic hardship. Our data, which include information collected from respondents every three months about whether they gain or lose a job, allow us to examine economic outcomes of job instability, measured through quarterly job losses and gains, over a one-year time period.

This study contributes to current knowledge of associations among job instability, social welfare assistance, and economic well-being in two ways. First, using quarterly data on job (in)stability, we examine the financial consequences (income level and poverty status) of household members' labor market dynamics on their household market income level (income from earnings and investments). We then examine the critical role that means-tested safety net

programs may play in buffering against adverse economic impacts of job instability. Here, we aim to unpack how cash, in-kind, and tax transfers may affect income for households facing job instability. Second, in addition to examining income level and poverty status, we also investigate associations of employment instability and benefit receipt on five domains of household needs-based economic well-being measures: food consumption, housing needs, medical care, ability to pay bills, and short-term financial capacity.

Data and Methods

Data

Our work relies on microdata from the New York City Longitudinal Survey of Wellbeing (NYC-LSW), also known as the “Poverty Tracker” study. It was designed to document the challenges regarding material well-being and income poverty that city residents face (see Neckerman et al. 2016). Our analyses are based on the first 5 waves of pooled data from the first two cohorts of the NYC-LSW, for which data were collected at 3-month intervals over 12 months. The first cohort was recruited and interviewed between December 2012 and March 2013; the second cohort was recruited and interviewed between April 2015 and December 2015. Approximately 6,000 households were interviewed via both an extensive annual survey and shorter intermediate surveys administered every 3 months for 4 consecutive quarters. Given our focus on employment trajectories, we exclude the post-retirement age population, such that sample is restricted to respondents age 25 to 64 at the time of their baseline interview. This resulted in a potential analytic sample of 4,297 households. We then retained only those respondents and their spouse or partner (if a spouse or partner was present in household) who participated in all five interview waves, leaving a potential sample of 2,378. Finally, we excluded

6 cases with missing values on the covariates, resulting in a final analytic sample of 2,372 households.

Measures

Employment trajectories: At the annual surveys (baseline and 12-month follow-up), respondents are asked how many months they worked in the past year and whether they worked in the last week. They are asked the same about their partner or spouse, if present in the household. In each of the intermediate surveys (3-, 6-, and 9-month follow-up) and the 12-month follow-up survey respondents report whether any of their household members lost a job and/or started a new job during the previous 3 months. We use the reported number of months working over the prior 12 months, combined with work status in the past week as a proxy of labor force participation at baseline such that, to be considered employed at baseline, a respondent or their partner/spouse must be reported to both have worked 3 months or more in the past year and to be working in the past week. Respondents and spouses/partners who were reported to have been working during the prior week at the 12-month follow-up are coded as working at that time point.

We organize households into several mutually exclusive categories. *Working full year* (without any shocks) indicates that the respondent and their spouse/partner, if present, were working at the baseline interview (as defined above), their household experienced no job gains or losses over the course of the year, and the respondent and their spouse/partner, if present, were employed at the 12-month interview and working 9 or more months during the prior 12 months.¹ *Nonworking² full year* (without any shocks) indicates that the respondent and their spouse/partner, if present, were not working at the time of both the baseline and 12-month

¹ This is because the Family and Medical Leave Act allows up to 3 months of leave in any given 12-month period.

² “Non-working” includes both those who are unemployed and those who are out of the labor force.

interviews and reported no job gains or losses in between. Note that, if no partner/spouse of the respondent is present in the household, working full year and nonworking full year is determined only by the respondent. Households in which the respondent's spouse/partner is present but only one member of the couple worked full year are categorized as *one partner working full year*. Respondents reporting any household job gains or losses over the course of the year are categorized as *unstably working*. To further examine differences in the financial consequences of job gains and job losses, we create three sub-groups among the unstably employed group: unstably employed with job gains only, unstably employed with job losses only, and unstably employed with both job gain(s) and job loss(es).

Income: We examine five sequential measures of income in order to differentiate the effects of earnings, specific kinds of social welfare benefits, and non-discretionary expenditures on household income in the context of heterogeneous employment trajectories. First, we examine household market income (earnings and returns on investments/capital income). Second, we add cash transfers received (public cash transfers, such as OASDI, SSI, TANF, UI; private transfers, including child support); third, we add in-kind transfers (SNAP, housing assistance, WIC, school meals); fourth, we subtract tax liabilities and add tax credits; finally, we subtract non-discretionary expenses in the form of out-of-pocket medical, work, and child-care expenses.³ All amounts are adjusted for inflation and converted to 2012 dollars.

Poverty: We use both the official (OPM) and supplemental poverty measures (SPM) to assess income poverty, coding those whose household incomes fall below the relevant poverty threshold as being poor. The OPM includes only pretax cash income and is compared to annual official poverty thresholds calculated by the United States Census Bureau to reflect three times

³ See, Appendix A1 for a detailed description of each measure.

the annual cost of a minimum food basket, adjusted for family size (Semega et al., 2019). The SPM accounts for post-tax, post-transfer income (including in-kind transfers), as well as the non-discretionary expenses listed above. This amount is compared to a threshold that is based on consumer expenditures on a core set of necessary goods and that varies geographically with the cost of housing and according to housing status. See Fox (2019) for more detail on the Supplemental Poverty Measure's construction.

Material Hardship: Our primary analyses include a dichotomous variable indicating that, at the one-year follow-up, the household had experienced one or more of the following five material hardships: food hardship, housing hardship, utility hardship, medical hardship, and lack of short-term financial capacity. Food hardship is defined as “often” running out of food before there is money to get more or worrying that food would run out before there is money to get more. Housing hardship is defined as moving in with others because of lack of money or having to stay in a shelter. Utility hardship is defined as having utilities cut off due to lacking money to pay bills. Medical hardship is defined as lack of ability to see doctors when necessary due to lack of money. Lack of short-term financial capacity is defined as “often” living paycheck to paycheck or running out of money before the end of the month. In supplemental analyses, we examine associations of employment trajectories each of the five types of hardship individually.

Covariates: We control for a range of covariates in order to reduce potential selection bias in our estimates. These include baseline measures of respondent race and ethnicity, sex, level of education (less than high school, high school degree/GED, some post-secondary education, post-secondary degree or greater educational attainment), age category (25-54 and 55-64), the number of people living in the household, whether there are children living in the household, whether the respondent has a spouse or partner present in the household, and whether

the respondent has a health problem or disability that prevents them from working. We also control for sample cohort. Finally, to reduce potential selection bias due to unobserved factors that are stably correlated with both economic hardship and employment trajectories, we control for the lagged (baseline) measure of the relevant outcome.

Analytic Approach

We use ordinary least squares (OLS) regressions to address the extent to which employment instability predicts income, poverty, and material hardships. We first regress each of our five income measures on employment status. We refer to baseline as time 1, the 12-month follow-up as time 5, and the quarters in between as times 2 (3 months), 3 (6 months) and 4 (9 months). The model takes the form:

$$\ln(\text{INC}_{i,t5}) = \alpha + \delta_1 \text{NWFY}_i + \delta_2 \text{OWFY}_i + \delta_3 \text{UW}_i + \beta_1 \mathbf{X}_{i,t1} + \beta_2 Y_{i,t0} + \varepsilon_{it5} \quad (1)$$

where $\text{INC}_{i,t5}$ is the income measure of interest described above for household i ; NWFY_i is a dichotomous variable with a value of 1 indicating that the household is coded “nonworking full year;” OWFY_i is a dichotomous variable with a value of 1 indicating that the household is coded “one partner working full year;” UW_i is a dummy variable with a value of 1 if the household is coded “unstably working;” $\mathbf{X}_{i,t1}$ is a vector of baseline covariates; $Y_{i,t0}$ is a lagged (baseline) measure of the outcome variable; and, ε_{it5} is an error term. We adjust for the baseline measures of the outcomes examined to address potential selection bias due to unobserved factors that have a consistent influence on income, poverty, or hardship at each point in time. The reference group for household work trajectory type is “working full year.”

In a second set of models, we decompose the unstably employed group into three distinct subgroups indicating unstably employed with only job gains, unstably employed with only job

losses, and unstably employed with both job gains and job losses. Our income measures are modeled in natural log form. Because the interpretation of log transformed data can sometimes be challenging, we compute the coefficients into dollar values by exponentiating them.⁴ We estimate robust standard errors to account for possible heteroscedasticity.

We estimate linear probability models taking the same form as the OLS regression in presented equation (1) to examine associations of employment trajectory types with income poverty and material hardship. Specifically, we regress the OPM poverty measure, SPM poverty measure, and material hardship indicator (in separate models) on the employment stability indicators and covariates.

Results

Descriptive Statistics

Table 1 presents weighted baseline sample characteristics by household work trajectory type. Approximately 25% of households were working full year without experiencing any employment gains or losses, 16% were nonworking full year without employment gains or losses, 5% had one partner working full year, and 54% experienced job gains or losses in their household, with 25% experiencing only job gains, 13% experiencing only job losses, and 16% experiencing both job gains and job losses (not shown). The raw data indicate substantial differences in baseline income and economic wellbeing by subsequent work trajectory. Regardless of which income measure is considered, both households working full year and those with one partner working full year had the highest incomes and nonworking full year households had (by far) the lowest incomes; those experiencing work instability fell in the middle. It is

⁴ One may interpret the coefficient estimate from a log-linear model as change in percentage without exponentiating the value. But this approximate interpretation of the coefficient holds only when the coefficient estimate is small enough. See Appendix B for further details.

notable, however, that the magnitude of these group differences is considerably smaller when transfers, taxes, and/or non-discretionary expenses are taken into account. The pattern for economic wellbeing at baseline is relatively consistent with that for income. Households that were working full year and those in which one partner was working full year had the lowest rates of OPM and SPM poverty, as well as material hardship, followed by unstably working households, with nonworking household having, by far, the highest poverty and material hardship rates.

Turning to household characteristics at baseline, we see that nonworking households are smaller and less likely to have both a partner/spouse of the respondent and children present than other household types. They are also more likely to have a disabled respondent, Black or Hispanic respondent, less educated respondent and older (between ages 55 and 64) respondent than other households. One partner working full year households are largest overall and most likely to have children present. Respondents in these households are disproportionately white, highly educated, and younger (between ages 25 and 54). Full year working households are generally similar to one partner working households though they are somewhat smaller, less likely to have children present, and less likely to have a respondent with a disability or health problem; they are even more likely to be represented by a highly educated respondent. Finally, unstably working households are larger in size and more likely to have a partner/spouse and children present than full year working and nonworking households. They are more likely to be represented by a respondent with a disability than full year working households, less likely than nonworking households, and similarly likely as one partner working households. They are disproportionately represented by younger respondents (age 25-54) and have a similar education

distribution as one partner working households. They are less likely to be represented by a Black or Hispanic respondent than nonworking households.

< Tables 1 and 2 about here>

Table 2 presents income and economic wellbeing at one-year follow up by household work trajectory over the year. Consistent with the baseline results, regardless of income measure used household income was highest among full year working households and households with one partner working full year, followed by unstably working households and, finally, nonworking households. Again, the group differences are substantially and incrementally reduced when accounting for cash transfers, in-kind transfers, tax liabilities or refunds, and non-discretionary expenditures. After accounting for these factors, mean incomes were about \$82,000, \$90,000, \$73,000, and \$32,000 for working full year, one partner working full year, unstably working, and nonworking households, respectively. Poverty and material hardship rates followed a consistent pattern. For example, OPM(SPM) rates for working full year, one partner working full year, unstably working, and nonworking households were 7%(10%), 9%(10%), 19%(19%), and 55%(30%), respectively; material hardship rates were 44%, 53%, 62%, and 76%. Notably, the difference between the OPM and SPM poverty rates is particularly large for nonworking households, for which poverty is reduced by 45% under the SPM as compared to the OPM.

Regression Results

In Table 3, we report separate models, estimated with robust standard errors for each of the outcomes. These OLS coefficients in models in which logged income is the outcome variable can be converted to percent increase or decrease in income by exponentiating the coefficient and subtracting one. The estimates from Model 1 indicate that nonworking full year, one partner

working full year, and unstably working households have considerably lower market incomes than working full year households, but that one partner working full year and unstably working households have similar market incomes. In terms of magnitude, on average nonworking full year households ($\beta = -2.85$) report 94% less market income, one partner working full year households report 39% ($\beta = -.49$) less market income, and unstably working households 38% ($\beta = -.49$) less market income than full year working households. The magnitude of difference in income between working full year and nonworking full year households is attenuated considerably (from 94% to 64%) when cash transfers are included in the income measure (Model 2), whereas there is little change in the magnitude of difference in income for one partner working full year and unstably working households when market income alone or market income + cash transfers is used to measure income. Adding in-kind transfers further reduces the magnitude of income difference among all household types. The Model 3 estimates indicate that, when market income, cash transfers, and in-kind transfers are all considered, relative to working full year households, on average, nonworking, one partner working full year, and unstably working households have 51%, 31%, and 25% less income, respectively. These gaps are slightly further attenuated when taxes (Model 4) and nondiscretionary expenses (Model 5) are also considered.

On the whole, then, in terms of disposable income (Model 5)—our preferred income measure and that used in constructing the SPM—we find that, on average, nonworking, one partner working full year, and unstably working households have 45%, 21%, and 24% less disposable income than working full year households. Notably, the magnitudes of these gaps are considerably smaller than those estimated using only market income and cash transfers (Model 2), which are the income components used to calculate the OPM. This primarily reflects the

positive overall effect of in-kind and tax transfers to nonworking households and, to a somewhat lesser extent, to one partner working full year and unstably working households. Consistent with the differences in estimates by income definition, we see much larger differences in OPM poverty (Model 6) than SPM poverty (Model 7) by household work trajectory. Considering OPM and SPM poverty, respectively, we find that, relative to working full year households, nonworking households are 24 percentage points (443%) more likely to be OPM poor and 10 percentage points (200%) more likely to be SPM poor, one partner working full year households are 2 percentage points (29%) more likely to be OPM poor and 2 percentage points (20%) more likely to be SPM poor, and unstably working households are 8 percentage points (114%) more likely to be OPM poor and 7 percentage points (7%) more likely to be SPM poor. Interestingly, we find no difference in material hardship between working full year households, nonworking full year households, and one partner working full year households; however, unstably working households are 5 percentage points (11%) more likely to experience material hardship than working full year households.

<Table 3 about here>

Unstable work over the course of a year may consist of job gains and/or job losses. Thus far, we have not differentiated the association of each with income, poverty, or hardship. Rather, we have focused on whether a household reported one or more job changes of any kind during the course of the year. The results in Table 4 are from regressions equivalent to those for which results were presented in Table 3, with the exception that, instead of as a single indicator, we now model unstably working with three separate indicators for unstably working with only job gain(s), unstably working with only job loss(es), and unstably working with both job gain(s) and loss(es). The accompanying Figure 1 depicts the percent difference in income, relative to

working full year households for each of the other household work trajectory categories, and for each income measure.

As expected, these results reveal large differences in income, poverty, and material hardship by the types of employment transitions a household experienced. Households experiencing only job losses fared worst in terms of income, exhibiting disposable incomes that were 44% lower than those of working full year households and roughly the same as those of nonworking full year households. By comparison, households that experienced only job gains and those that experienced both job gains and job losses exhibited incomes that were relatively similar to one another as well as to the incomes of one partner working full year households, but 15% and 18% lower than those of working full year households. It is also notable that accounting for in-kind benefits and tax transfers reduces the adverse impact of experiencing job losses (without subsequent gains) much more substantially than it does with respect to other patterns of employment instability. Nonetheless, OPM(SPM) poverty rates for households experiencing only job losses are 16(13) percentage points, or 329%(230%), higher than those for working full year households, whereas for households experiencing only job gains and those experiencing both job gains and job losses, they are 4(4) percentage points (57%[40%]) and 6(6) percentage points (86%[60%]) higher than for working full year households.

Finally, we find that employment instability in the form of only job losses and both job gains and losses (but not job gains only) are associated with a 7 percentage point (16%) and 9 percentage point (20%) greater probability of material hardship, respectively, relative to that for working full year households. In supplemental models we examined associations of employment trajectories with each of the separate hardships we estimated a series of separate regressions using the binary indicators of each of the hardships that comprise the overall hardship indicator

(food hardship, housing hardship, utility hardship, medical hardship, lack of short-term financial capacity). These results (see Appendix C) were generally consistent with our primary results for any material hardships. Specifically, unstably working families with only job loss and those with both job gains and losses had higher probabilities of each of the individual hardships than full year working families. In addition, however, nonworking full year families and unstably working families with only job gains also exhibited greater probabilities of food hardship (marginally significant at $p > .10$ for unstably working households with only job gains).

<Table 4 and Figure 1 about here>

An important limitation of our employment instability measures is that they refer to job changes for anyone in the household, whereas our baseline and follow-up employment measures are specific to the respondent and their spouse/partner (if present). Thus, we next examine associations of employment trajectories with income, poverty, and material hardship for households that do not have adults other than the respondent and their spouse/partner present (for which any job changes must have occurred for the respondent or spouse/partner) and those that have other adults present (for which job changes could have occurred for those other adults). For households without other adults present, we look separately at those headed by a single adult and those headed by couple both because employment trajectories may have very different impacts on economic wellbeing in households with only one potential breadwinner compared to those with two, and because the “one partner working full year” employment trajectory category is irrelevant to single-headed households. Table 5 presents results for single-headed households with no other adults present (panel A), couple-headed households with no other adults present (panel B), and households with adults other than the respondent and spouse/partner present.⁵ The

⁵ In some cases, respondents’ own children living in the household were age 18 or older. We do not count them as “other adults” in our primary analyses. However, we have conducted supplemental analyses for single-headed and

general pattern of results by employment trajectories is, for the most part, similar across these household types, though there are noticeable differences in levels of income, poverty, and hardship, such that single-headed households generally fare most poorly despite benefitting most from cash and in-kind benefits and tax transfers.

<Table 5 about here>

Discussion and Conclusion

Employment instability, or job churning, may have distinct consequences for households' economic well-being. Yet, while scholars have increasingly focused on income instability (Dahl et al., 2011; Hardy, 2017; Ziliak et al., 2010), few studies have examined the economic consequences of employment instability despite that—while the two are clearly interrelated—they may have differential implications for family economic well-being, particularly given both inequities across family types and inefficiencies in the contemporary U.S. safety net, which has increasingly prioritized low-income working families over non-working families and emphasized in-kind benefits and tax transfers more so than cash assistance. This paper examines how employment trajectories, including consistent employment, consistent nonemployment, and unstable employment, are associated with income, OPM and SPM poverty, and material hardship. This is especially timely given high levels of employment and earnings instability in the U.S. labor market (LaBriola & Schneider, 2020; Morduch & Schneider, 2017; Schneider & Harknett, 2019), coupled with relatively low levels of employment and earnings protections compared to other wealthy countries (Brady et al., 2013; Gornick et al., 2020), and growing evidence that administrative burdens limit access to public benefits for many eligible families (Herd & Moynihan, 2019). These factors appear to have only increased in the context of the

couple-headed household in which we excluded such household from the sample. This did not change our results (see Appendix D).

ongoing COVID-19 epidemic and its adverse economic consequences, which have been particularly severe for already disadvantaged individuals and families (Despard et al. 2020; Parolin & Wimer, 2020; Rho et al., 2020).

By leveraging an ongoing longitudinal study that captures short-term variation in employment and economic well-being, collected in the aftermath of the Great Recession, we are able to observe detailed patterns of household employment trajectories at three-month intervals and their associations with annual household income levels, poverty, and material hardship. To examine the extent to which social welfare programs may buffer households from precarious employment, we examine multiple conceptualizations of household income, accounting for market income, cash transfers, in-kind transfers, tax payments or refunds, and non-discretionary out-of-pocket expenses to arrive at a measure of disposable income. This strategy allows us to understand differences when particular components of household income packages are included or excluded from consideration. We also examine potential heterogeneity in these associations for single-headed and couple-headed households.

Our results suggest that employment instability is common and has considerable implications for economic wellbeing. Approximately 54% of sample households experienced unstable employment during a one-year time span and 13% reported losing jobs without any job gain. On the whole, consistent nonemployment was most strongly associated with low-income and poverty. However, employment instability—in the form of job loss only as well as both job gain and job loss—was negatively associated with economic well-being, particularly in terms of material hardship. Although, unsurprisingly, nonworking full year households had the lowest market incomes and highest rates of OPM poverty, perhaps our most striking results are that households that experienced only job loss (without subsequent job gain) over the course of the

year had extremely similar levels of disposable income as and a higher rate of SPM poverty than nonworking full year households, despite having higher market incomes. They also had much higher rates of material hardship, as did households that experienced both job gains and job losses. These findings highlight that the safety net appears to be more effective for nonworking households than for unstably employed households.

This study has several limitations worth considering. First, the measure of employment instability assesses whether the respondent or *any member of their household* lost or gained a job in the previous three months; we have no specific information on which specific individual(s) in the household gained or lost jobs. As a robustness test, we estimated our models for single-headed and couple-headed families in which no other adults were present and found a consistent pattern of results.

Second, while we observe job gains and losses at 3-month intervals, we observe household income, poverty status, and material hardship at only annual intervals. This allows only for analysis of associations of short-term employment instability with annual economic well-being and precludes analysis of the immediate influence of employment instability on economic well-being. While this is an unfortunate limitation, it is worth noting that income and poverty are typically assessed in research, official government statistics, and social programs at the annual level. Nonetheless, future research on intra-year associations of employment instability and economic well-being is warranted. Our analyses are also silent on any longer-term impacts on economic well-being that may result from short-term employment instability, for example, by leading to depletion of savings, increased indebtedness, evictions/foreclosures, and other adverse economic events.

Third, given the observational nature of our study, our results cannot be interpreted as causal estimates. Rather they may be biased by unobserved factors that are associated with both short-term employment trajectories and annual income, poverty, and economic hardship. To attempt to reduce such bias, we adjust our estimates for baseline levels of each outcome, which serves to adjust for unobserved factors that have a consistent effect on economic well-being at both time points. However, this does not adjust for such factors that may have a differential impact across time points.

With these limitations in mind, our paper offers several implications for policy and future research. For policy, our results provide strong evidence that governmental transfers play a meaningful role in the reduction of financial consequences that result from consistent unemployment and employment instability, particularly job loss. At the same time, they also highlight that the current social safety net serves the nonworking full year households better than unstably employed households. This may reflect lags between job loss and benefit receipt for the latter or lower levels of benefit eligibility and/or take up. This is an area that is ripe for future research. Our results further underscore both the importance of assessing job gains and losses separately when studying employment (in)stability and the importance of considering multiple components of the household income package in future research. Analyses focused only on indicators of job instability, rather than separately assessing job gains and losses will confound the very different implications of each for income, poverty, and material hardship, potentially resulting in downwardly biased overall estimates. Finally, given increasing reliance of the U.S. safety net on in-kind based benefits and tax transfers, it is crucial to assess their effects on household disposable income to fully understand the redistributive effects of the full range of government transfers.

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Table 1. Baseline characteristics of New Yorker households by employment trajectory over the year

	Full sample	Working full year	Nonworking full year	One partner working full year	Unstably working
<i>Household income at baseline (annual, \$)</i>					
Market income (MI)	80,677 (82,586)	106,420 ^{b,d} (85,328)	18,964 ^{a,c,d} (34,107)	110,228 ^{b,d} (91,551)	84,005 ^{a,b,c} (80,897)
MI + Cash transfers	84,389 (82,281)	107,597 ^{b,d} (85,954)	28,793 ^{a,c,d} (36,294)	114,276 ^{b,d} (92,069)	87,013 ^{a,b,c} (81,499)
MI + Cash transfers + In-kind transfers	87,735 (80,580)	109,547 ^{b,d} (84,754)	34,950 ^{a,c,d} (35,448)	115,965 ^{b,d} (91,253)	90,373 ^{a,b,c} (79,916)
MI + Cash transfers + In-kind transfers +/- tax liabilities/refunds	71,542 (60,020)	84,594 ^{b,d} (62,128)	34,772 ^{a,c,d} (34,346)	98,264 ^{b,d} (68,575)	73,857 ^{a,b,c} (59,412)
MI + Cash transfers + In-kind transfers +/- tax liabilities/refunds – nondisc. expenses	65,710 (56,485)	76,618 ^{b,d} (58,830)	33,490 ^{a,c,d} (33,927)	89,158 ^{b,d} (61,797)	68,047 ^{a,b,c} (56,441)
<i>Economic well-being at baseline</i>					
OPM poverty	0.18	0.07 ^{b,d}	0.48 ^{a,c,d}	0.08 ^{b,d}	0.15 ^{a,b,c}
SPM poverty	0.17	0.08 ^{b,d}	0.35 ^{a,c,d}	0.08 ^{b,d}	0.18 ^{a,b,c}
One or more material hardships	0.59	0.46 ^{b,d}	0.81 ^{a,c,d}	0.51 ^{b,d}	0.60 ^{a,b,c}
Food hardship	0.37	0.21 ^{b,d}	0.67 ^{a,c,d}	0.32 ^{b,d}	0.36 ^{a,b,c}
Inability to pay bill	0.26	0.17 ^{b,d}	0.36 ^{a,c}	0.23 ^{b,d}	0.28 ^{a,c}
Housing insecurity	0.21	0.14 ^{b,d}	0.29 ^{a,c}	0.19 ^{b,d}	0.24 ^{a,c}
Cannot afford to see doctors	0.18	0.12 ^{b,d}	0.26 ^a	0.13 ^d	0.20 ^{a,c}
Lack of short-term financial capacity	0.51	0.37 ^{b,d}	0.73 ^{a,c,d}	0.49 ^{b,d}	0.51 ^{a,b,c}
<i>Household Characteristics at baseline</i>					
Respondent is female	0.55	0.54	0.58	0.50	0.56
Whether there is spouse/partner present	0.37	0.34 ^{b,c,d}	0.08 ^{a,c,d}	1.00 ^{a,b,d}	0.43 ^{a,b,c}
Household size	2.39 (1.56)	2.16 ^{b,c,d} (1.44)	1.77 ^{a,c,d} (1.20)	3.76 ^{a,b,d} (1.49)	2.59 ^{a,b,c} (1.62)
Whether there are children present	0.33	0.29 ^{b,c}	0.20 ^{a,c,d}	0.64 ^{a,b,d}	0.36 ^{b,c}
Disability/health problem	0.22	0.06 ^{b,c,d}	0.70 ^{a,c,d}	0.17 ^{a,b}	0.14 ^{a,b}
Respondent is in the first cohort	0.42	0.42 ^b	0.48 ^{a,d}	0.38	0.41 ^b
<i>Race/ethnicity:</i>					
White (non-Hispanic)	0.41	0.50 ^{b,d}	0.30 ^{a,c,d}	0.52 ^{b,d}	0.38 ^{a,b,c}
Black (non-Hispanic)	0.21	0.22 ^{b,c}	0.28 ^{a,c,d}	0.09 ^{a,b,d}	0.20 ^{b,c}
Asian	0.10	0.10 ^{b,c}	0.02 ^{a,c,d}	0.16 ^{a,b,d}	0.11 ^{b,c}
Other race/ethnicity	0.03	0.02	0.03	0.02	0.03
Hispanic	0.26	0.16 ^{b,d}	0.37 ^{a,c}	0.21 ^b	0.29 ^a
<i>Education:</i>					
Less than high school	0.13	0.07 ^{b,d}	0.30 ^{a,c,d}	0.10 ^b	0.12 ^{a,b}
High school	0.18	0.12 ^{b,c,d}	0.28 ^{a,d}	0.23 ^a	0.18 ^{a,b}
Some postsecondary education	0.24	0.26 ^{b,d}	0.28 ^a	0.22	0.22 ^a
Higher education	0.44	0.55 ^{b,c,d}	0.14 ^{a,c,d}	0.45 ^{a,b}	0.47 ^{a,b}
<i>Age:</i>					
Age: 25-54	0.71	0.72 ^{b,d}	0.44 ^{a,c,d}	0.69 ^{b,d}	0.80 ^{a,b,c}
Age: 55-64	0.29	0.28 ^{b,d}	0.56 ^{a,c,d}	0.31 ^{b,d}	0.20 ^{a,b,c}
Observations	2,372	597	374	121	1,280
Percent of sample		25%	16%	5%	54%

Note: Mean (and standard deviation) or proportion presented. The sample is restricted to those respondents aged between 25 and 64 at the time of initial interviews. Results based on weighted data.

^a Differs from working full year at $p < .05$.

^b Differs from nonworking full year at $p < .05$.

^c Differs from one partner working full year at $p < .05$.

^d Differs from unstably working at $p < .05$.

Table 2. Income, poverty, and material hardship of New Yorker households at 12-month follow-up by employment trajectory over the year

	Full sample	Working full year	Nonworking full year	One partner working full year	Unstably working
<i>Household income at 12-month follow-up (annual, \$)</i>					
Market income (MI)	83,161 (80,516)	109,983 ^{b,d} (80,101)	17,506 ^{a,c,d} (36,334)	105,222 ^{b,d} (79,685)	88,079 ^{a,b,c} (79,675)
MI + Cash transfers	86,413 (79,880)	110,469 ^{b,d} (80,519)	25,482 ^{a,c,d} (36,358)	109,474 ^{b,d} (78,776)	91,182 ^{a,b,c} (80,031)
MI + Cash transfers + In-kind transfers	90,512 (77,814)	112,733 ^{b,d} (79,303)	33,550 ^{a,c,d} (35,308)	112,461 ^{b,d} (77,224)	95,086 ^{a,b,c} (78,271)
MI + Cash transfers + In-kind transfers +/- tax liabilities/refunds	74,178 (58,633)	87,810 ^{b,d} (58,897)	33,434 ^{a,c,d} (33,627)	96,365 ^{b,d} (59,238)	78,061 ^{a,b,c} (58,892)
MI + Cash transfers + In-kind transfers +/- tax liabilities/refunds – nondisc. expenses	69,652 (56,783)	82,239 ^{b,d} (57,486)	31,638 ^{a,c,d} (33,199)	89,950 ^{b,d} (57,774)	73,397 ^{a,b,c} (57,073)
<i>Economic well-being at 12-month follow-up</i>					
OPM poverty	0.21	0.07 ^{b,d}	0.55 ^{a,c,d}	0.09 ^{b,d}	0.19 ^{a,b,c}
SPM poverty	0.18	0.10 ^{b,d}	0.30 ^{a,c,d}	0.10 ^{b,d}	0.19 ^{a,b,c}
One or more material hardships	0.59	0.44 ^{b,d}	0.76 ^{a,c,d}	0.53 ^{b,d}	0.62 ^{a,b,c}
Food hardship	0.38	0.23 ^{b,d}	0.64 ^{a,c,d}	0.31 ^{b,d}	0.39 ^{a,b,c}
Utility hardship	0.24	0.17 ^{b,d}	0.26 ^{a,c}	0.19 ^{b,d}	0.28 ^{a,c}
Housing hardship	0.20	0.13 ^{b,d}	0.23 ^{a,c}	0.14 ^{b,d}	0.24 ^{a,c}
Medical hardship	0.19	0.11 ^{b,d}	0.19 ^{a,d}	0.14 ^d	0.23 ^{a,b,c}
Lack of short-term financial capacity	0.51	0.36 ^{b,d}	0.70 ^{a,c,d}	0.47 ^{b,d}	0.53 ^{a,b,c}
Observations	2,372	597	374	121	1,280
Percent of sample		25%	16%	5%	54%

Note: Mean (and standard deviation) or proportion presented. The sample is restricted to those respondents aged between 25 and 64 at the time of initial interviews. Results based on weighted data.

^a Differs from working full year at $p < .05$.

^b Differs from nonworking full year at $p < .05$.

^c Differs from one partner working full year at $p < .05$.

^d Differs from unstably working at $p < .05$.

Table 3. Regression results: associations of employment trajectory with income levels, economic hardship and poverty at one-year follow-up

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Market income (ln)	MI+Cash (ln)	MI+Cash+In- kind (ln)	Post-tax, post- govt. (ln)	Disposable income (ln)	Income poverty (opm)	Income poverty (spm)	One or more hardships
	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE
<i>Ref. working full year</i>								
Nonworking full year	-2.85(.29)***	-1.02(.17)***	-0.71(.14)***	-0.57(.13)***	-0.60(.15)***	0.24(.03)***	0.10(.03)**	0.01(.03)
One partner working full year	-0.49(.13)***	-0.45(.11)***	-0.38(.11)***	-0.29(.10)**	-0.24(.12)*	0.02(.03)	0.02(.03)	0.01(.04)
Unstably working	-0.49(.08)***	-0.40(.07)***	-0.29(.06)***	-0.24(.05)***	-0.27(.08)***	0.08(.02)***	0.07(.02)***	0.05(.02)*
Black	-0.51(.14)***	-0.37(.10)***	-0.29(.09)***	-0.24(.08)**	-0.27(.10)**	0.06(.02)**	0.03(.02)	0.08(.02)***
Asian	-0.08(.14)	-0.13(.12)	-0.13(.11)	-0.11(.10)	-0.11(.13)	0.01(.03)	-0.01(.03)	0.06(.04)
Others	-0.45(.30)	-0.20(.21)	-0.24(.20)	-0.16(.14)	-0.10(.15)	0.04(.04)	0.06(.05)	0.12(.05)**
Hispanic	-0.30(.14)*	-0.26(.09)**	-0.24(.08)**	-0.18(.07)*	-0.21(.09)*	0.05(.02)**	0.04(.02)†	0.07(.02)**
Less than high school	-0.76(.23)**	-0.66(.15)***	-0.36(.09)***	-0.31(.08)***	-0.23(.10)*	0.14(.03)***	0.11(.04)**	0.11(.03)***
High school	-0.56(.16)***	-0.48(.11)***	-0.38(.09)***	-0.31(.08)***	-0.32(.10)**	0.13(.03)***	0.12(.03)***	0.10(.02)***
Some postsecondary education	-0.40(.13)**	-0.32(.09)***	-0.26(.08)**	-0.20(.08)**	-0.20(.09)*	0.03(.02)†	0.03(.02)	0.10(.02)***
Female	0.20(.10)†	-0.09(.07)	-0.10(.06)†	-0.09(.05)†	-0.10(.07)	0.02(.01)	0.02(.02)	0.03(.02)*
Spouse/partner present	0.60(.11)***	0.52(.09)***	0.43(.08)***	0.39(.07)***	0.40(.09)***	-0.07(.02)***	-0.10(.02)***	-0.05(.02)*
Age: 55-64	-0.03(.13)	-0.08(.08)	-0.10(.07)	-0.09(.07)	-0.18(.09)*	0.01(.02)	-0.01(.02)	-0.01(.02)
Disability/health problem	-0.77(.19)***	-0.00(.12)	0.06(.10)	0.04(.09)	0.03(.11)	0.05(.02)*	0.01(.03)	0.09(.02)***
Household size	0.09(.05)†	0.03(.04)	-0.00(.04)	0.00(.04)	0.03(.04)	0.01(.01)	0.04(.01)***	0.01(.01)*
Children present	0.06(.14)	0.09(.10)	0.16(.09)†	0.20(.08)*	0.07(.10)	0.00(.02)	-0.05(.02)*	0.00(.02)
Cohort indicator	0.00(.12)	0.05(.08)	0.06(.06)	0.07(.06)	0.00(.07)	-0.00(.02)	-0.01(.02)	0.02(.02)
Baseline MI (ln)	0.35(.03)***							
Baseline MI+Cash(ln)		0.31(.05)***						
Baseline MI+Transfers(ln)			0.23(.05)***					
Baseline Post-tax, post-govt.(ln)				0.21(.05)***				
Baseline Disposable income(ln)					0.18(.05)***			
Baseline poverty status (opm)						0.30(.03)***		
Baseline poverty status (spm)							0.17(.03)***	
Baseline hardship indicator								0.55(.02)***
N	2,372	2,372	2,372	2,372	2,372	2,372	2,372	2,372

Note: The sample is restricted to those respondents aged between 25 and 64 at the time of initial interviews. Robust standard errors are presented in parentheses.

*** p< .001, ** p< .01, * p< .05, †p< .10

Table 4. Regression results: associations of employment trajectory, including job gains and losses, with income levels, economic hardship and poverty at one-year follow-up

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Market income (ln)	MI+Cash (ln)	MI+Cash+In-kind (ln)	Post-tax, post-govt. (ln)	Disposable income (ln)	Income poverty (opm)	Income poverty (spm)	One or more hardships
	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE
<i>Ref. working full year</i>								
Nonworking full year	-2.89(.29)***	-1.05(.17)***	-0.73(.14)***	-0.59(.13)***	-0.62(.15)***	0.25(.03)***	0.10(.03)**	0.01(.03)
One partner working full year	-0.50(.13)***	-0.46(.11)***	-0.38(.11)***	-0.29(.10)**	-0.24(.12)*	0.03(.03)	0.02(.03)	0.01(.04)
Unstably working with only job gain	-0.21(.09)*	-0.26(.07)***	-0.20(.06)**	-0.15(.06)**	-0.17(.08)*	0.04(.02)*	0.04(.02)†	0.01(.02)
Unstably working with only job loss	-1.24(.17)***	-0.82(.13)***	-0.56(.10)***	-0.48(.10)***	-0.57(.13)***	0.16(.03)***	0.13(.03)***	0.07(.02)**
Unstably working with both gain & loss	-0.31(.11)**	-0.31(.10)**	-0.23(.08)**	-0.19(.08)*	-0.20(.10)†	0.06(.02)*	0.06(.02)**	0.09(.02)***

Note: The sample (N=2,372) is restricted to those respondents aged between 25 and 64 at the time of initial interviews. All models include a series of same covariates from Table 3. Robust standard errors are presented in parentheses.

*** p< .001, ** p< .01, * p< .05, †p< .10

Table 5. Regression results: associations of employment trajectory with income levels, economic hardship and poverty at one-year follow-up among single-headed families without other adults present

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Market income (ln)	MI+Cash (ln)	MI+Cash+In-kind (ln)	Post-tax, post-govt. (ln)	Disposable income (ln)	Income poverty (opm)	Income poverty (spm)	One or more hardships
	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE
Panel A: Single-headed families without other adults present								
<i>Ref. Working full year</i>								
Nonworking full year	-3.20(.41)***	-1.14(.21)***	-0.82(.19)***	-0.65(.17)***	-0.64(.20)**	0.23(.04)***	0.13(.04)**	0.00(.04)
Unstably working with only job gain	-0.23(.19)	-0.38(.14)**	-0.33(.12)**	-0.24(.10)*	-0.33(.13)*	0.08(.03)*	0.08(.03)*	-0.01(.03)
Unstably working with only job loss	-1.66(.32)***	-0.95(.22)***	-0.52(.16)**	-0.44(.15)**	-0.58(.21)**	0.26(.05)***	0.19(.05)***	0.09(.04)*
Unstably working with both gain & loss	-0.35(.26)	-0.40(.20)*	-0.34(.18)†	-0.29(.18)	-0.31(.20)	0.10(.04)*	0.12(.04)**	0.12(.04)**
Panel B: Couple-headed families without other adults present								
<i>Ref. Working full year</i>								
Nonworking full year	-1.41(.58)*	-0.93(.43)*	-0.63(.41)	-0.41(.29)	-0.50(.32)	0.24(.09)**	0.04(.08)	0.01(.07)
One partner working full year	-0.37(.13)**	-0.41(.12)***	-0.40(.12)***	-0.31(.10)**	-0.28(.14)*	-0.01(.03)	-0.01(.03)	0.01(.05)
Unstably working with only job gain	-0.14(.08)†	-0.19(.07)**	-0.20(.07)**	-0.18(.06)**	-0.18(.12)	-0.00(.02)	-0.02(.03)	0.01(.04)
Unstably working with only job loss	-0.67(.22)**	-0.72(.21)***	-0.71(.21)***	-0.63(.20)**	-0.67(.25)**	0.06(.03)†	0.05(.04)	0.06(.04)

Unstably working with both gain & loss	-0.34(.15)*	-0.32(.13)*	-0.28(.12)*	-0.24(.12)*	-0.24(.17)	0.04(.03)	0.03(.03)	0.06(.05)
Panel C: Families with other adults present								
<i>Ref. Working full year</i>								
Nonworking full year	-2.68(.54)***	-1.00(.38)**	-0.65(.29)*	-0.60(.29)*	-0.70(.36)†	0.28(.07)***	0.15(.07)*	0.05(.05)
One partner working full year	-0.00(.37)	0.06(.30)	0.21(.26)	0.23(.24)	0.28(.33)	-0.02(.10)	-0.09(.10)	-0.11(.09)
Unstably working with only job gain	-0.19(.20)	-0.09(.17)	0.04(.15)	0.04(.15)	0.13(.21)	0.03(.04)	0.02(.05)	0.02(.04)
Unstably working with only job loss	-1.30(.36)***	-0.69(.25)**	-0.34(.18)†	-0.30(.17)+	-0.36(.27)	0.16(.06)**	0.12(.06)†	0.07(.05)
Unstably working with both gain & loss	-0.14(.20)	-0.14(.18)	-0.02(.14)	-0.00(.14)	0.06(.21)	0.02(.05)	0.02(.05)	0.10(.04)*

Note: Panel A sample (N=932) is restricted to those respondents aged between 25 and 64 at the time of initial interviews; it includes single-headed families without other adults. Panel B sample (N=804) is restricted to those respondents aged between 25 and 64 at the time of initial interviews; it includes couple families without adults. Panel C sample (N=636) is restricted to those respondents aged between 25 and 64 at the time of initial interviews; it includes couple families without adults. All models include a series of same covariates from Table 3. Robust standard errors are presented in parentheses. *** p< .001, ** p< .01, * p< .05, †p< .10

Figure 1. Real percentage change of household income

Note: Results are transformed from the coefficients in Table 4

Figure 2. Real percentage change of household income among subgroups

Appendix A

Table A1. Detailed sources constituting five versions of a household’s income package

Market income (MI)	=	Earned income + Capital income	(A)
MI + Cash	=	MI + Social security + Unemployment benefits + Disability income + Private transfers + Public/Cash assistance	(B)
MI + Cash + In-Kind	=	MI + Cash + SNAP + Housing assistance + School lunch + WIC benefits	(C)

Post-tax income =	MI + Cash + In-Kind + Tax benefits – Tax payment	(D)
Disposable income (DI) =	Post-tax income – OOP ¹ expense – Child care expense – NCC ² work expense	(E)

Appendix B

$$\ln(\text{INC}_i) = \alpha + \delta_1 \text{CU}_i + \delta_2 \text{UE}_i$$

In our equation 1, the outcome in each model is logged income. Below we explain how we consider the exact interpretation of coefficient in more detail. We use the “exponentiate” function to covert natural-logged forecasts back to their real units. For instance, if we predict market income effects of unstable employment using the above equation, δ_2 is the size of the coefficient for the unstably-unemployed group estimated in the regression. The parameter value of δ_2 corresponds to a change in percentage of market income, which is $(\exp(\delta_2) - 1) \times 100$.

$$\begin{aligned} Y[\ln(\text{INC}_{\text{mi}}) \mid \text{UE} = 1] &= \alpha + \delta_1 \text{CU}_i + \delta_2 \\ Y[\ln(\text{INC}_{\text{mi}}) \mid \text{UE} = 0] &= \alpha + \delta_1 \text{CU}_i \end{aligned}$$

We can re-write the expressions as follows:

$$Y[\ln(\text{INC}_{\text{mi}}) \mid \text{UE} = 1] - Y[\ln(\text{INC}_{\text{mi}}) \mid \text{UE} = 0] = \alpha + \delta_1 \text{CU}_i + \delta_2 - (\alpha + \delta_1 \text{CU}_i) = \delta_2$$

This is the factor by which market income is expected to differ for cases indicated by UE=1 versus UE=0, holding others constant.

$$\ln \frac{\text{INC}_{\text{UE}=1}}{\text{INC}_{\text{UE}=0}} = \delta_2 \quad \rightarrow \quad \frac{\text{INC}_{\text{UE}=1}}{\text{INC}_{\text{UE}=0}} = e^{\delta_2}$$

Finally we get the percentage by which cases denoted by UE=1 differ on their market income from cases indicated UE=0, holding others constant.

$$\left(\frac{\text{INC}_{\text{UE}=1} - \text{INC}_{\text{UE}=0}}{\text{INC}_{\text{UE}=0}} \right) * 100\% = (e^{\delta_2} - 1) * 100\%$$

¹ OOP = Out-of-Pocket Expenses, including prescription co-pays, emergency visits

² NCC = Non-child-care work related expenses, such as commuting costs

Appendix C

Table C. Regression results: associations of employment trajectory with individual economic hardship indicators at one-year follow-up

	Model 1 Food hardship	Model 2 Utility hardship	Model 3 Housing hardship	Model 4 Medical hardship	Model 5 Lack of short- term financial capacity
	β RSE	β RSE	β RSE	β RSE	β RSE
<i>Ref. Working full year</i>					
Nonworking full year	0.07(.03)**	0.02(.03)	-0.02(.03)	0.01(.03)	0.02(.03)
One partner working full year	0.04(.03)	-0.00(.03)	-0.01(.03)	0.03(.03)	0.00(.04)
Unstably working with only job gain	0.04(.02)†	0.01(.02)	0.02(.02)	0.02(.02)	0.02(.02)
Unstably working with only job loss	0.12(.03)***	0.10(.03)***	0.06(.03)*	0.09(.03)***	0.09(.03)***
Unstably working with both gain & loss	0.11(.03)***	0.09(.03)***	0.06(.02)**	0.13(.03)***	0.10(.03)***

Note: The sample (N=2,372) is restricted to those respondents aged between 25 and 64 at the time of initial interviews. Robust standard errors are presented in parentheses. All models control for household head's education, sex, age, race/ethnicity, disability, household size, whether there is a child present, whether spouse/partner present, cohort indicator, and each outcome of interest at baseline.

*** p< .001, ** p< .01, * p< .05, †p< .10

Appendix D

Table D1. Regression results: associations of employment trajectory with income levels, economic hardship and poverty at one-year follow-up among single-headed families (child age <18) without other adults

	Model 1 Market income (ln)	Model 2 MI+Cash (ln)	Model 3 MI+Cash+In- kind (ln)	Model 4 Post-tax, post- govt. (ln)	Model 5 Disposable income (ln)	Model 6 Income poverty (opm)	Model 7 Income poverty (spm)	Model 8 One or more hardships
	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE	β RSE
<i>Ref. Working full year</i>								
Nonworking full year	-2.91(.47)***	-0.88(.21)***	-0.70(.21)**	-0.51(.19)**	-0.45(.22)*	0.20(.05)***	0.11(.05)*	0.01(.04)
Unstably working with only job gain	-0.09(.21)	-0.33(.15)*	-0.29(.13)*	-0.21(.11)†	-0.29(.14)*	0.07(.03)*	0.05(.03)	-0.01(.04)
Unstably working with only job loss	-1.72(.38)***	-1.03(.27)***	-0.59(.20)**	-0.50(.19)**	-0.69(.26)**	0.25(.05)***	0.19(.05)***	0.10(.05)*
Unstably working with both gain & loss	-0.24(.31)	-0.41(.25)†	-0.41(.24)†	-0.36(.23)	-0.39(.26)	0.11(.05)*	0.09(.05)†	0.14(.05)**

Note: The sample (N=756) is restricted to those respondents aged between 25 and 64 at the time of initial interviews; it includes single-headed families without other adults. All models include a series of same covariates from Table 3. Robust standard errors are presented in parentheses.

*** p< .001, ** p< .01, * p< .05, †p< .10

Table D2. Regression results: associations of employment trajectory with income levels, economic hardship and poverty at one-year follow-up among couple families (child age <18) without other adults

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Market income (ln)	MI+Cash (ln)	MI+Cash+In- kind (ln)	Post-tax, post- govt. (ln)	Disposable income (ln)	Income poverty (opm)	Income poverty (spm)	One or more hardships
	<i>β</i> RSE	<i>β</i> RSE	<i>β</i> RSE	<i>β</i> RSE	<i>β</i> RSE	<i>β</i> RSE	<i>β</i> RSE	<i>β</i> RSE
<i>Ref. Working full year</i>								
Nonworking full year	-1.60(.72)*	-1.10(.53)*	-0.73(.51)	-0.46(.35)	-0.50(.37)	0.20(.09)*	0.06(.09)	-0.05(.08)
One partner working full year	-0.38(.14)**	-0.45(.14)***	-0.44(.13)***	-0.34(.12)**	-0.28(.16)†	0.00(.03)	-0.00(.04)	0.05(.05)
Unstably working with only job gain	-0.13(.08)	-0.20(.07)**	-0.20(.07)**	-0.18(.06)**	-0.17(.13)	-0.01(.02)	-0.02(.03)	0.02(.04)
Unstably working with only job loss	-0.75(.26)**	-0.79(.25)**	-0.77(.25)**	-0.69(.24)**	-0.70(.29)*	0.06(.04)†	0.03(.04)	0.05(.05)
Unstably working with both gain & loss	-0.24(.14)†	-0.22(.09)*	-0.20(.08)*	-0.17(.07)*	-0.18(.16)	0.03(.03)	0.02(.03)	0.08(.05)

Note: The sample (N=667) is restricted to those respondents aged between 25 and 64 at the time of initial interviews; it includes couple families without other adults. All models include a series of same covariates from Table 3. Robust standard errors are presented in parentheses.

*** p< .001, ** p< .01, * p< .05, †p< .10