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Employment and Earnings Trajectories During Two Decades Among Adults in New York City Homeless Shelters

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Introduction

Few portrayals exist of homeless persons as wage earners. Instead, common images of this population manifest stereotypes of "drunk, stoned, crazy and sick" single adults (Snow, Anderson, and Koegel, 1994: 461; Wright, 1989) and of families headed by single parents beset by trauma and lacking human capital (Bassuk, 2007; ICPH, 2013; Rog and Buckner, 2008). Behind these negative portrayals lie more fundamental questions related to the relevance of work in a setting of extreme poverty.

In this study, we take up questions related to the role of employment and earnings in entries into and exits from homelessness, events related to broader dynamics of homelessness. The preponderance of research on homelessness remains focused on associations between individual characteristics and outcomes related to becoming or remaining homeless, although such associations are overstated (Draine et al., 2002) and facilitate the stigma that accompanies homelessness (Phelan et al., 1997). Employment, insofar as it has a bearing on homelessness, is more ephemeral than are the relatively static individual traits. Specifically, the vagaries of losing and gaining employment can lead to becoming homeless and, alternately, offer a means of exiting homelessness.

Such employment dynamics are consistent with a stochastic model of homelessness. A precipitating shock, reflecting a sudden and transitory change in circumstances, is prerequisite to becoming homeless, and the magnitude of the shock needed to induce homelessness is inversely proportional to the degree of vulnerability an individual or family has to homelessness due to household (individual or family) social and economic factors (Goodman, Messeri, and O'Flaherty, 2016; O'Flaherty, 2012, 2009). In other words, adverse life events are instrumental for pushing a household into homelessness (Curtis et al., 2013). Job and earnings loss, as a commonly occurring economic shock (Couch, Daly, and Gardiner, 2011), is the event most often associated with falling into poverty, while regained work and earnings is the most frequent event that again lifts a household out of poverty (Bane and Ellwood, 1986; Cellini, McKernan, and Ratcliffe, 2008; Morduch and Siwicki, 2017). In a similar fashion, we investigate whether change in job status and earnings act as a catalyst for both subsequent homelessness (in the wake of a job-related shock) and for exits from homelessness (following regained work and earnings) in a large population of sheltered adults.

Research on employment and earnings among the homeless population has not attracted attention commensurate to the value that popular and policy discourse gives it (Long, Rio, and Rosen, 2007). One reason for this imbalance is that researchers have had much more difficulty accessing administrative records related to employment than records related to health and disability. Both types of data are considered highly sensitive and have considerable privacy safeguards. However, researchers examining the nature and extent of disability among the homeless routinely access health records, which are appropriately protected by confidentiality restrictions that include provisions of the 1996 Health Insurance Portability and Accessibility Act, or HIPAA (HHS, 2003). Meanwhile, administrative records on employment and income, from such sources as state employment agencies, the Internal Revenue Service, and the Social Security Administration (SSA), have been largely closed to researchers.

In this study, we provide one of the most expansive and systematic views to date of the role of employment and earnings in a large, sheltered homeless population consisting of both individual and family households. Using matched and aggregated administrative data from SSA and the New York City (NYC) Department of Homeless Services (DHS), we juxtapose aggregated earnings and shelter-use data for 160,525 sheltered adults during two decades of followup. If employment represents a shock of sufficient magnitude to precipitate homelessness, then these data should show associations between declines in employment and earnings and onset of shelter use. Furthermore, a correspondence between exits from homelessness and increases in employment levels and earnings would further underscore the ties between employment and homelessness.

We frame this investigation on three research questions. First, and basically, what is the extent of employment and earnings in a homeless population, before, during and after shelter use? Second, are changes in employment and earnings related to entering and exiting shelter? Finally, how do these dynamics between employment and homelessness differ among adults who are homeless as part of family households and those who are homeless as individuals?

Homelessness and Employment—A Review

How prevalent is employment among people who are homeless? Rossi's (1989) monograph, based on results from Rossi, Fisher, and Willis (1986), provided the first comprehensive look at this question. Rossi portrayed homelessness as "the most aggravated state of a more prevalent problem, *extreme poverty*" (Rossi, 1989: 8), with median monthly income for the average Chicago homeless person less than $168 ($378 in 2017 dollars). Thirty-two percent of the survey respondents reported receiving earnings in the month prior to being interviewed. Based on overall income levels, Rossi posited that this employment was typically low paying, intermittent, unsteady, and unskilled.

Findings on earnings and labor force participation from subsequent major surveys of homeless populations have been consistent with Rossi's conclusions (Burt and Cohen, 1989; Zuvekas and Hill, 2000). In the most recent major survey of the national homeless population that assessed income and earnings, the National Survey of Homeless Assistance Providers and Clients undertaken by the U.S. Census Bureau, 44 percent of respondents reported income from work in the 30 days prior to taking the survey. For about one-half of these respondents, these earnings came from temporary positions, day labor, or informal jobs (Burt, 2001; Burt et al., 1999).

This 44 percent employment figure provides the benchmark for our first research question related to the prevalence of employment among the homeless population. This finding, simplified to the assertion that 44 percent of homeless people work, has become the most widely disseminated statistic about homelessness and employment (Jacobson, 2013; Shaheen and Rio, 2007; SAMHSA, 2013). Although this estimate lacks precision and now is dated, it does retain a symbolic balance in which, despite high unemployment rates among the homeless population, homeless persons nonetheless work more than is commonly assumed (Hartwell, 2000). Furthermore, having a substantial proportion of the homeless population in receipt of earnings underscores how the low wages and the sporadic, temporary, and irregular nature of their employment translates into insufficient income for exiting homelessness (Bartley and Roberts, 2006; Bogard et al., 2001; Shier, Jones, and Graham, 2012; Theodore, 2003). In this article, we empirically reassess this figure with a more updated homeless population.

Our second question, whether changes in employment and earnings are related to entering and exiting shelter, has a scant literature. Homeless persons, when asked the reasons for becoming homeless, will frequently invoke job loss as a precipitating event (Burt, 2001; Levin, McKean, and Raphael, 2004; Metraux et al., 2017). Furthermore, being homeless creates substantially increased barriers to locating and maintaining regular wage labor. These barriers include the stigma associated with being homeless, lack of dependable access to secure storage for one's belongings, difficulty maintaining personal hygiene, and reconciling work hours with shelter schedules. These difficulties, in addition to other impediments to employment that homeless persons frequently have, contribute to a trajectory of attenuated attachment to the work force and a process in which informal work (for example, recycling, panhandling, illicit activities, childcare) progressively replaces wage labor as an income source (Gowan, 2010; Liebow, 1993; Snow and Anderson, 1993).

Three studies assessed employment and job loss insofar as they affected homelessness. Two studies followed adults in at-risk families in NYC—one (Smith et al., 2005) found that employment did not act as a protective factor for homelessness, but losing employment increased the risk of entering shelter; the other (Shinn et al., 2013) found that having employment was associated with families avoiding a shelter entry. In the third, Swami (2017), in an exception to this tendency, uses Journeys Home, an Australian study panel dataset of households who were homeless or at risk for homelessness, to examine how homelessness affects employment transitions. This study finds a negative association between homelessness and employment entry but finds that individual traits, instead of homelessness, explain most of this association.

The third question takes into account that key differences exist in the circumstances around employment and wage income, and in responses to job-related shocks, between those who are homeless as individuals (that is, single adults) compared with adults who are homeless as part of families with children. Among the single adult homeless, the overall aging of this group has progressively eroded their workforce attachment since the 1980s (Culhane et al., 2013a, 2013b). Furthermore, high rates of mental disorder, substance abuse, and criminal history hampers steady employment (Shaheen and Rio, 2007; Zlotnick, Robertson, and Tam, 2002; Zuvekas and Hill, 2000). The homeless who stand to be most detached from the workforce are the roughly 20 percent who are deemed chronically homeless, who have been homeless for an extended period of time, and who have a disabling condition (Caton et al., 2005; Caton, Wilkins, and Anderson, 2008). Persons in this subgroup require extensive support for securing and maintaining stable employment but are typically difficult to engage in standard employment support programs (Shaheen and Rio, 2007).

A different set of dynamics prevails among adults who are homeless with families. Adults in families are predominantly in their twenties and female, single-parent providers for one or more preschool-age children (Rog, Holupka, and Patton, 2007; HUD, 2012). Adults in homeless families have lower rates of employment than their single adult counterparts (Burt et al., 1999, Zlotnick, Robertson, and Tam, 2002). However, three independent studies of sheltered families in NYC found that substantial proportions of adults in sheltered families have ties to the work force. A Vera Institute of Justice study found that 79 percent of a sample of sheltered families contained adults who had worked in the 5-year period before they entered shelter, with 69 percent becoming unemployed during the 5-year period before they entered shelter (Smith et al., 2005). Shinn and colleagues (2013) found that 44 percent of families entering shelter after applying for prevention services were working prior to shelter admission. Finally, a survey by the Institute for Children, Poverty, and Homelessness finds that 31 percent of adults in homeless families in NYC shelters were working either part or full time, and another 57 percent of this group was unemployed with previous work history (ICPH, 2013).

The ICPH report also found substantial barriers to employment among these families that included childcare needs, lack of education and work history, and mental health issues related to depression and experiences of trauma. These findings on high unemployment levels and substantial barriers to work among homeless heads of families are consistent with previous research (Brooks and Buckner, 1996; Rog and Buckner, 2008). Two studies compare employment dynamics among sheltered and housed heads of families. Shinn et al. (1998) found that among adults in families receiving Temporary Assistance for Needy Families, or TANF, a lower prevalence of work history occurs for those who were in shelters (38 percent) compared with their housed counterparts (49 percent). Lehmann et al. (2007) found that adults in newly homeless families, again compared with housed counterparts, were more likely to have stopped working in the year prior to interviewing for the study (47 and 11 percent respectively).

In a manner similar to single adult homeless, a minority of homeless families remains homeless for an extended period. However, the chronic single adult homeless also had high rates of disabilities and appear to be less employable, whereas homeless families with long stays are no more likely than other homeless families to be unemployed and may exhibit a resilience that facilitates the ability to endure the long wait that usually precedes obtaining subsidized housing (Culhane et al., 2007; Weinreb, Rog, and Henderson, 2010). For many of these long-term homeless families, the extended period that they spend in shelter occurs in transitional housing arrangements, which often provide structured vocational programming. As such, extended stays provide support for developing vocational skills and locating employment, with the ultimate goal of regained housing self-sufficiency (ICPH, 2013).

Given substantial demographic and contextual differences between homeless adults in individual and family households, we assess them separately and expect to find different work trajectories in each subpopulation. Research on job-related shocks found that in general low-income households are able to recover more quickly from earnings shocks than higher-income households (Guvenen et al., 2015), although they are also more susceptible to lasting economic "scarring" effects if the earnings shock extends into long-term unemployment (Guvenen et al., 2017). Additionally, the magnitude of this recovery varies by age, with workers in their early years much better positioned to recover economically from an earnings shock than their older counterparts (Karahan and Ozkan, 2013). Given younger age and childcare obligations, we expect relatively low workforce participation among the family adult subpopulation prior to their homelessness, but they will be better positioned to make long-term vocational recoveries. In contrast, among the individual adult subpopulation, older age and disability will make vocational recovery more difficult following homelessness.

The results of prior research collectively provide some guideposts to the present study, in which we examine work and earnings for a large group of sheltered adults during an extended period that includes the times before, during, and after homelessness. On a basic level, the previous benchmark of 44 percent employment provides a comparison with the prevalence of employment in this study group, and we add data on earnings to supplement the information provided by employment rates. Although we expect this study to find a temporal association between job loss and onset of homelessness that is consistent with findings from previous studies, the extent to which homeless households recover from the shock of job and earnings loss is, as far as we can tell, an unanswered question. If the dynamics of this recovery process among homeless households are consistent with dynamics among households more generally, than the recovery trajectories for adults in families should differ from single adults.

Additionally, the presence of two factors particular to homelessness—extended shelter stays and exits to stable housing—should also be associated with differential degrees of recovery from employment and earnings shocks. First, the difficulty in maintaining employment while homeless will have longer-term effects for those with extended shelter stays and will correspond with diminished ties between work and shelter exit. Conversely, exits from homelessness to stable housing will be associated with more positive outcomes, as employment will facilitate establishing stable housing, and vice versa. Although these two expected outcomes follow from the known with respect to the relationship between homelessness and employment, we do not have data that are capable of establishing a directional association between changes in employment and movement in and out of homelessness, and either one can conceivably lay the groundwork for the other. Given the paucity of findings on this topic, however, confirming that a relationship exists and providing insight into the nature of these relationships should advance the current understanding of the manner in which employment and homelessness interact.

Methods

The research is a retrospective observational study based on matching two large administrative datasets to assess shelter use and employment during the course of more than 2 decades for 160,525 sheltered adults in New York City.

Sample and Data

Data used in this study were administrative records from two sources—DHS records on shelter use and earnings records from SSA. DHS operates or funds separate shelter networks for unaccompanied (that is, single) adults and families. Combined, these two shelter networks include approximately 85 percent of all general homeless shelter beds in NYC. DHS collected demographic and shelter-use information from these shelters in two administrative databases (one covering family shelters and the other covering single adult shelters) since the late 1980s.

DHS sent records for 175,524 persons, the universe of records for persons who had initial stays in DHS shelters (either family or single adult) between 1990 and 2002, to SSA, where they were matched with earnings records for the 10 years prior to and up to 10 years following onset of DHS shelter use. SSA provided these earnings records through the time period of 1980 through 2007, so a full 10 years of earnings was not available for all persons. SSA maintains comprehensive records of individual earnings for all individuals who receive wages that are subject to payroll tax deductions and who are, thereby, accruing eligibility for future SSA retirement benefits. Identifiers from DHS records (name, social security number, date of birth, and sex) were first verified through SSA records, using probabilistic and deterministic matching methods, and then matched with individual SSA records. Due to strict confidentiality policies surrounding individual SSA records, SSA personnel performed the data match.

The resulting dataset, which was aggregated and deidentified, became the basis for this study. SSA was able to unduplicate and validate 160,525 (91 percent) of these records.[1] These records were then aggregated so that the matched records were grouped in a deidentified, aggregated (frequency table) format, consisting of finely grained cells containing all available combinations of nine criteria. The nine criteria that formed the basis for subdividing the aggregated earnings information (annual earnings, number of persons receiving SSA wage income) into smaller cells included—

- **Year of earnings.** Divided into each of the 28 years for which earnings were examined for this study (1980–2007).
- **Shelter status.** Two categories, whether or not a person had a record of shelter use in each given year.

[1] See Metraux et al. (2011) for more details.

- **Year of first shelter use.** Divided into 13 cohorts, based on year of first recorded shelter use, 1990–2002.
- **Shelter type.** Two categories, based on whether the adult in question stayed in shelters primarily as an individual (that is, single adult) or as part of a family.
- **Pattern of shelter use.** Every adult was assigned one of three categories according to their pattern of shelter use in the 2-year period following their initial entry into shelter. These patterns of shelter use were assigned through cluster analysis methods and were based on configurations of total discrete stays and total days spent in shelter. The "transitional" designation signifies a pattern of a small number of days (typically less than 90) spent in shelter during a small number of stays (typically one or two). "Episodic" and "long-term" shelter use designations typically involved substantially longer stays consumed during the course of either few stays (chronic) or numerous stays (episodic). Detailed information on this cluster typology is available for singles (Kuhn and Culhane, 1998) and families (Culhane et al., 2007).
- **Exit from shelter.** Two types of housing associated with last shelter exit, permanent or nonpermanent (A small number of persons did not have exit outcomes, because they did not exit by the end of the study period.). This information was abstracted from numerous disposition categories noted on the person's latest shelter record. Any records not indicating an exit to permanent-housing placement we considered as nonpermanent exits.
- **Age.** Calculated at point of initial homelessness and grouped into eight categories. The first group included those ages 18 to 25; we classified persons ages 25 to 55 into six groups by 5-year increments; and the final category included persons older than 55. Also, we included a category for missing age.
- **Race or ethnicity.** Five categories—White, Black, Hispanic, other, and unknown.
- **Sex.** Three categories—male, female, and unknown.

Due to confidentiality safeguards, data on earnings (and thus, employment) were only provided if the number of persons in a particular cell who received any earnings was five or more, thus cells with fewer than five persons remained empty in the dataset generated for this study. Each of the cells contained data on total income amount (sum for all cases in the cell), the standard deviation of the mean income per person, the number of individuals earning income, and the total number of individuals in the cell. Earnings for all years were indexed for inflation to 2008 U.S. dollars (U.S. Bureau of Labor Statistics, 2012). From these data, this study uses three earnings-related outcomes—employment rate (number of income earners divided by the total number of individuals in the cell), annual average income for income earners only (total income for the cell divided by the number of income earners in the cell), and annual average income for the cell (total income for the cell divided by number of individuals in the cell). For illustrative purposes, data from several sample aggregated cells are presented in appendix exhibit A-1.

The aggregated dataset returned from SSA consisted of 67,409 different cells representing 3,049,708 persons-years of observation. However, we removed cells from the data for the following reasons: (1) Data went beyond 10 years before or after the first year of homelessness (4,477 cells);

(2) Fewer than five people had earnings (10,324 cells); (3) Average earnings were improbably high (annual income exceeding, on average, $70,000 for earners only or $40,000 for all cases, as these 17 cells were likely data anomalies). As a result, the final dataset consisted of 52,591 data cells representing 2,859,576 person years—1,098,258 (38 percent) from adults in families and 1,761,318 (62 percent) from single adults. Although the discarded 10,324 underpopulated cells represented 15 percent of the total cells, they contained only 6 percent of the total person years.

Aggregating these data limits possible analyses; our strategy to mitigate this limitation was to create aggregate cells that were specific as possible, given the available data. Using the nine criteria to create these granular cells led to 1,822,500 possible aggregate cell combinations (multiplying all combinations of the nine categories and taking into account time constraints), and the available 52,591 cells represented 3 percent of the possible cells. Appendix exhibit A-2 provides a further breakdown of this cell distribution. Many cells were unpopulated, for which no data were returned. As an example of this difference between limited population of possible cells, in the criterion "sex," the possible cell combinations in the unknown category overwhelm the small number of unknown values. Furthermore, men in the family shelter data and women in the single shelter data are relatively sparse, leading to more unpopulated cells.

Because of the omission of some of the data cells, the number of persons represented in the data varied from year to year. "Year 0," the year in which persons experienced their first shelter episode, contained data from 152,323 people—63,289 (42 percent) adults in families and 89,034 (58 percent) single adults.

Statistical Analysis

We conducted all analyses separately for adults who sought shelter as part of a family (that is, adults with families) and for adults who were homeless as individuals (that is, single adults). We first analyzed data descriptively, creating summaries of demographic, homelessness, and economic variables.

The three earnings outcomes (employment, overall earnings, earnings among wage earners) were then modeled longitudinally as dependent variables using weighted linear mixed-effects regression models. We modeled employment as the percent of individuals employed during a given year for each aggregated group in our sample. Earnings data were modeled as mean U.S. dollars during a given year per aggregated group. The multivariate analyses used logarithmic transformations of the earnings data. Performing this transformation helped to normalize the distribution of earnings. A preliminary visual inspection of the economic outcomes over time indicated a sharp change in trend for each of the dependent variables at the point of first occurrence of homelessness for nearly all subpopulations (decreasing trend rapidly changed into an increasing trend). Therefore, a piecewise (that is, segmented or spline) statistical modeling strategy was employed whereby two slopes or segments for time were specified (that is, a single knot at the time of the initial incidence of homelessness) (Draper and Smith, 1998). The change was so sharp that a global quadratic effect for time would not accurately model the observed effect. The first segment contained data for the 10-year period preceding the first recorded shelter stay, and the second segment spanned the

10-year period following this onset of first shelter use. The visual inspection also suggested a high degree of nonlinearity in the observed economic outcomes over time. Given the expected nonlinearity, we tested polynomial (or power) transformations for segments one and two in our models to improve fit (quadratic and cubic).

We selected mixed-effects models, because three levels of analysis (or clusters) were possible due to the aggregated and nested nature of the data: (1) Up to 20 repeated measurements over time of economic outcomes nested within aggregated groups (falling between 1980 and 2007); (2) Based on demographic and homelessness characteristics, 954 aggregated groups nested within year of first shelter-use cohorts; (3) Thirteen years of first shelter-use cohorts (years 1990–2002). Mixed-effects models allow for such clustering and correctly estimate the standard errors of model parameters, thus relaxing assumptions of independence of observations. In these models, allowing slopes for time (and their polynomial transformations) and intercepts to vary randomly at the aggregated group and cohort-levels can account for such clustering. The mixed-effects regression models included the following independent variables from the available data as fixed effects—sex, race or ethnicity, age group (treated as an ordinal variable), shelter status, exit housing type, and shelter-use pattern. Additionally, interactions between sex and time segments were included in all mixed-effects models to capture potential differences between men and women in all outcomes over time. Therefore, the mixed-effects models had the following form (random effects in italics)—

% employed or ln(earnings) ~ [level 1: repeated measures over time: *year before 1st shelter use* + (*year before 1st shelter use*)^2 + *year after 1st shelter use* + (*year after 1st shelter use*)^2] + shelter status + pattern of shelter use + exit housing type + age + race/ethnicity + sex + sex*[each of the following: *year before 1st shelter use* + (*year before 1st shelter use*)^2 + *year after 1st shelter use* + (*year after 1st shelter use*)^2] + [level 2: *demographic and homelessness cluster id*] + [level 3: *year of 1st shelter use cohort*]. (1)

To model the obtained frequency table data, all analyses were weighted by cell frequency (Venables and Ripley, 2002). We conducted all analyses using the R environment for statistical computing (R Development Core Team, 2016), with the *lme4* package for mixed-effects models (Bates, Maechler, and Bolker, 2010) and the *lattice* package for trellis graphics (Sarkar, 2008).

These regression models will be limited in their interpretability due to uncertainties in temporal sequencing among the covariates of interest. Specifically, precise times for such events as commencement of employment, shelter exits, and housing acquisition are unknown, and the associations in many of these relationships are potentially bidirectional. For example, exiting a shelter to housing can facilitate gaining employment as readily as gaining employment could facilitate a shelter exit. Such simultaneity bias precludes making inferences beyond the existence of an association. As no previous research has been conducted on whether or not associations between the covariates of interest exist, we feel the value is in assessing these associations despite the substantial circumscriptions around interpretation.

Results

Exhibit 1 summarizes the demographic and shelter-use characteristics for the adults in the family and single adult groups. The majority of the sample was single adults (62 percent) who were overwhelmingly male (80 percent). In contrast, the adults who were homeless as part of families (38 percent) were nearly exclusively female (93 percent). The former group was also substantially older when compared with the adults in the family households. Among the racial and ethnic group categories, a majority of both household types were of Black (non-Hispanic) race. About three-fourths of the single adults had short-term transitional shelter-use patterns, although only about one-half of the adults in families had such shelter-use patterns. A majority (63 percent) of the adults in families exited shelter to stable living situations, although only 20 percent of single adults were recorded as doing so.

Exhibit 1

Demographic Characteristics for Adults With Initial Shelter Use in New York City Between 1990 and 2002, Stratified by Family and Single Household Types

	Family	Single
Persons	63,289	89,034
Sex (%)		
Female	93	20
Male	7	80
Age at time of first shelter stay (%)		
18–24	49	15
25–29	18	15
30–34	13	18
35–39	8	16
40–44	4	11
45–49	1	7
50 or more	0	7
Missing	7	11
Race or ethnicity (%)		
Black (non-Hispanic)	55	56
Hispanic (any race)	30	24
White (non-Hispanic)	1	13
Other or missing	14	7
Year of initial shelter entry (%)		
1990	10	11
1991–1993	26	26
1994–1996	22	23
1997–1999	16	21
2000–2002	25	18
Shelter-use pattern (%)		
Transitional	51	77
Episodic	2	11
Long term	47	12
Exit to a stable living situation (%)	63	20

Exhibit 2 presents employment rates and mean earnings for the time periods before, during, and after shelter use. Results are reported separately for adults in family and single households and are further stratified by homelessness type and housing type on shelter exit. The proportions in exhibit 2 for employment reflect the weighted average annual rate for those receiving SSA-recorded earnings. For example, the participation rate for the entire sample (not shown on table) prior to the first instance of shelter use was 49 percent. This percentage means that, in an average year prior to the onset of shelter use, nearly one-half of the entire sample had earnings. The earnings similarly reflect average annual SSA earnings amounts (in 2008 dollars) during the course of each of the three periods. To illustrate this observation, we can again consider the entire sample (results not shown on table), where the weighted average annual earnings in the period before shelter use was $5,697, when both earners and nonearners are included, and $11,612 per year when only earners were included.

Employment rates and earnings showed different trajectories among adults in families and single adults. For example, adults in families had an average annual employment rate of 43 percent prior to the onset of shelter use that fell to 38 percent during the years of shelter use and then increased to 58 percent in the postshelter years. Looking at the subgroups defined by shelter-use measures, the 2 percent of adults in families who showed episodic patterns of shelter use (from exhibit 1) had worse outcomes, and virtually no differences in employment appeared between temporary and long-term subgroups or among those exiting to permanent-housing arrangements and those with exits to other arrangements. Average annual earnings also increased substantially after shelter exit, both for the total group and for the working subgroup. Average annual earnings among workers dropped from $8,483 (preshelter) to $7,342 (shelter onset) and then rose to $13,531 after shelter exit. Overall, this finding represents a net 60 percent increase during the total course of the study period, despite the presumed setback of shelter use. This combined increase in both employment and in the amount of earnings means that, for the overall group (including nonworkers), the average annual amount of earnings more than doubled from the preshelter to the postshelter period (from $3,677 to $7,783). However, even when only considering the 58 percent of adults in families who had earnings, the average annual earnings amount ($13,531) still was less than the poverty guidelines for a family of two ($14,000 in 2008).

For single adults, a more mixed trend emerged. An average overall employment rate of 52 percent in the years preceding initial shelter use dropped to 45 percent during years with shelter use and dropped further to 42 percent in the years following shelter use. This decline was not uniform, however. For instance, those with long-term shelter-use patterns and those exiting shelter to permanent-housing arrangements had rates that rebounded slightly after exiting shelter. Despite the overall decline in employment among sheltered single adults over time, overall annual average earnings rebounded after shelter exit. When looking at the average annual earnings for workers, the 38-percent decrease in earnings (from $12,965 to $8,029) associated with the onset of shelter use was followed by annual postshelter earnings that averaged $15,291, amounting to an 18-percent increase in average annual earnings during the entire study period. Furthermore, 42 percent of single adults who were in the workforce during the postshelter period earned enough, on average, to exceed the poverty guideline for a one-person household ($10,400 in 2008). Again, persons with long-term shelter stay patterns and persons exiting to permanent housing had higher

Exhibit 2

Average Annual Employment Rates and Earned Income Amounts for Adults With Records of Shelter Use in New York City Between 1990 and 2002, Stratified by Family and Single Household Types and Shelter Stay Characteristics

			Adults in Families			Single Adults		
Time Period	Variable	Level	Employment (%)	Earnings (Workers Only) ($)	Earnings (All) ($)	Employment (%)	Earnings (Workers Only) ($)	Earnings (All) ($)
Prior to initial shelter stay	Total		43	8,483	3,677	52	12,965	6,746
	Homeless type	Long term	43	9,207	3,925	56	16,327	9,104
		Episodic	45	4,291	1,915	56	11,647	6,565
		Transitional	44	7,856	3,459	51	12,718	6,496
	Exit type	Permanent	43	8,792	3,811	58	14,844	8,603
		Other	43	7,900	3,422	51	12,533	6,372
During initial shelter stay	Total		38	7,342	2,767	45	8,029	3,585
	Homeless type	Long term	37	7,947	2,965	50	9,204	4,590
		Episodic	26	4,115	1,054	44	7,053	3,082
		Transitional	39	6,711	2,606	44	8,063	3,555
	Exit type	Permanent	37	7,423	2,729	54	8,686	4,709
		Other	40	7,178	2,850	43	7,893	3,401
After exit from shelter	Total		58	13,531	7,783	42	15,291	6,487
	Homeless type	Long term	59	13,709	8,056	51	19,058	9,775
		Episodic	52	9,660	4,999	40	13,264	5,312
		Transitional	57	13,466	7,630	42	15,152	6,376
	Exit type	Permanent	59	13,840	8,114	55	17,505	9,590
		Other	56	12,965	7,209	40	14,750	5,931

average annual earnings when compared with the other subgroups. The annual earnings averages for all single adults dropped from $6,746 to $3,585 (a 47-percent decline) with the onset of shelter use and increased again to $6,487 in the years following shelter use to roughly regain the lost earnings. This relative parity reflects the offsetting trends of declining participation rate and rebounding earnings amounts.

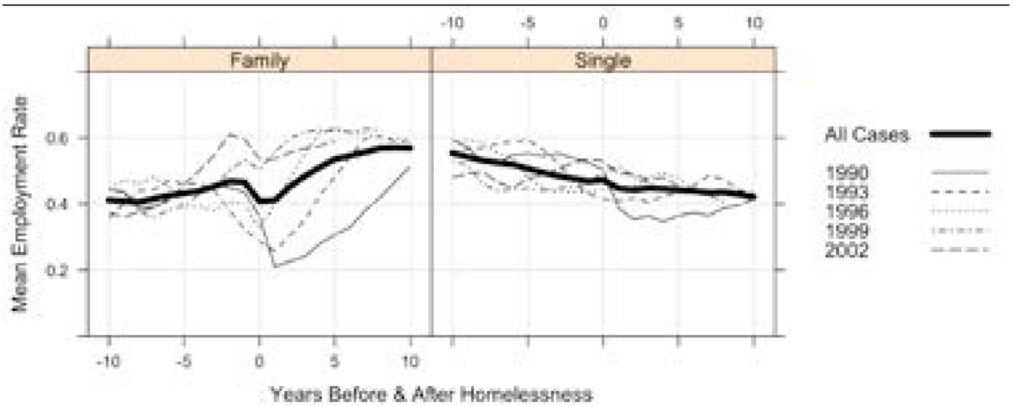
Exhibits 3 and 4 illustrate, by year and household type, the annual proportions of employment, and exhibits 5 and 6 illustrate average earnings amounts during a 2-decade period. For each of the two pairs of exhibits, exhibits 3 and 4 show results for the whole of the single adults and adults in families groups, and exhibits 5 and 6 compare each of these groups by sex. The exhibits provide a more temporal context for the overall annual trends for adults in families and single adults summarized in exhibit 2.

For adults in families, both employment and earnings dropped in conjunction with the onset of shelter use and subsequently recovered to levels higher than those preceding year 0 (exhibits 3 and 5). These trajectories differed among men and women heads of household. Employment (exhibit 4) among men recovered to about the rate prior to homelessness (roughly 60 percent). Women, who had a substantially lower participation rate in the preshelter period (40 to 45 percent), increased in the postshelter period to rates comparable with those of men (roughly 60 percent). For earnings (exhibit 6), male workers had, on average, more income than their female counterparts, but female workers made larger gains in earnings income from the preshelter to the postshelter time periods.

Among the single adults, although trends for the individual cohorts varied somewhat, the aggregated trend for employment showed a steady decline that did not appear affected by the onset of shelter use (exhibit 3). The decline was more pronounced over time for the men compared with women in the single adults group (exhibit 4). Looking at earnings (exhibit 5), workers realized a sharp drop in the years immediately preceding the onset of shelter use, and average annual earnings bottomed out in year 0 before regaining levels realized in the years preceding shelter use.

Exhibit 3

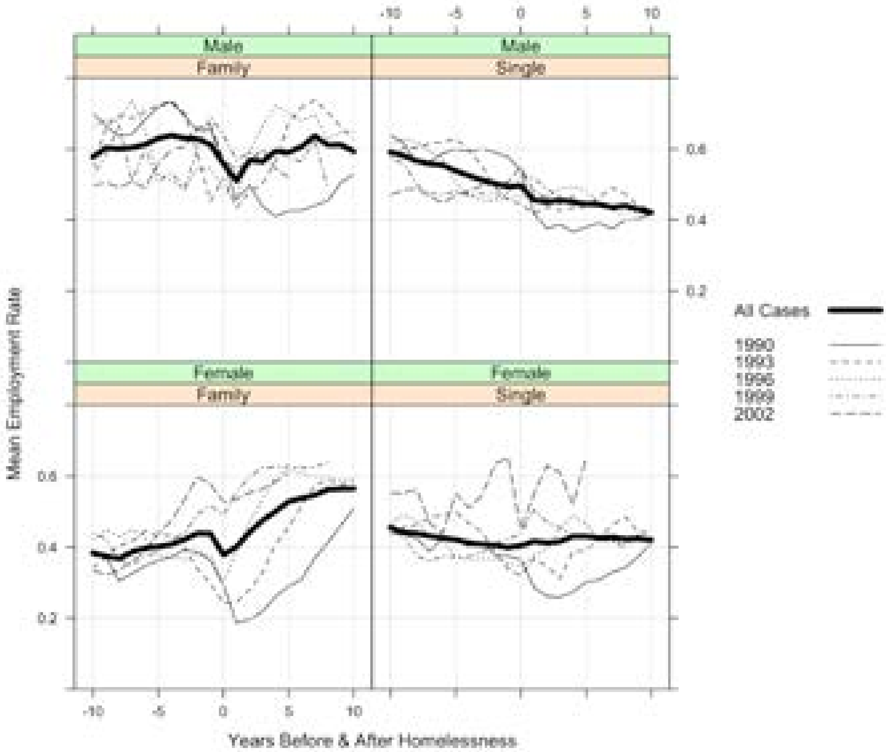
Employment Before and After First Instance of Homelessness for Families and Singles



Notes: Thick lines represent the trend for all 13 cohorts collapsed, and data from individual cohorts selected at 3-year intervals are presented for clarity. Year 0 indicates year of initial shelter entry.

Exhibit 4

Employment Before and After First Instance of Homelessness for Male and Female Single and Family Households



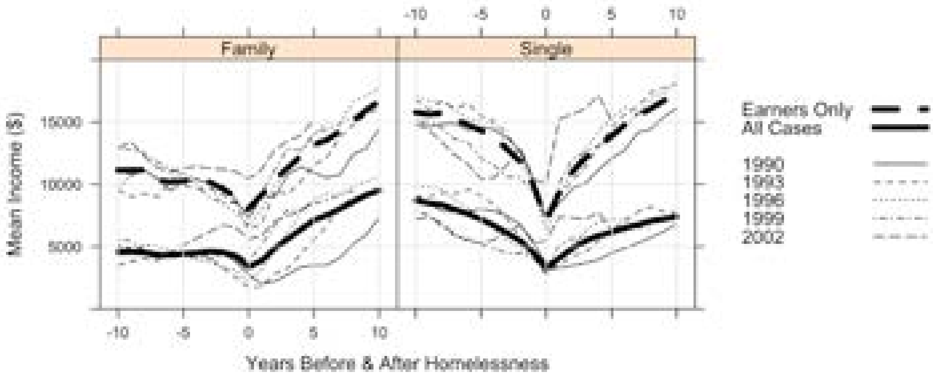
Notes: Thick lines represent the trend for all 13 cohorts collapsed, and data from individual cohorts selected at 3-year intervals are presented for clarity. Year 0 indicates year of shelter entry.

The earnings for all persons, reflecting the combined participation and worker-earnings trends, show an overall drop coinciding with the onset of shelter use and a much more modest recovery in the subsequent years. Although men on average received higher levels of earnings income than women, the earnings trends over time are similar for men and women (exhibit 6).

The regression results for employment and earnings for adults in families (exhibit 7) and for single adults (exhibit 8) were largely consistent with the descriptive results. Random effects are not presented, as fixed effects are of the most interest. Due to the large sample size, nearly all effects were statistically significant, so the focus in reporting the results will be on direction of the coefficient (that is, positive or negative association) and the corresponding magnitude of the effect of the estimators. Although the results for the interaction terms are reported in the tables, they were used as control measures (primarily to account for sex differences) and do not assist with interpreting the results.

Exhibit 5

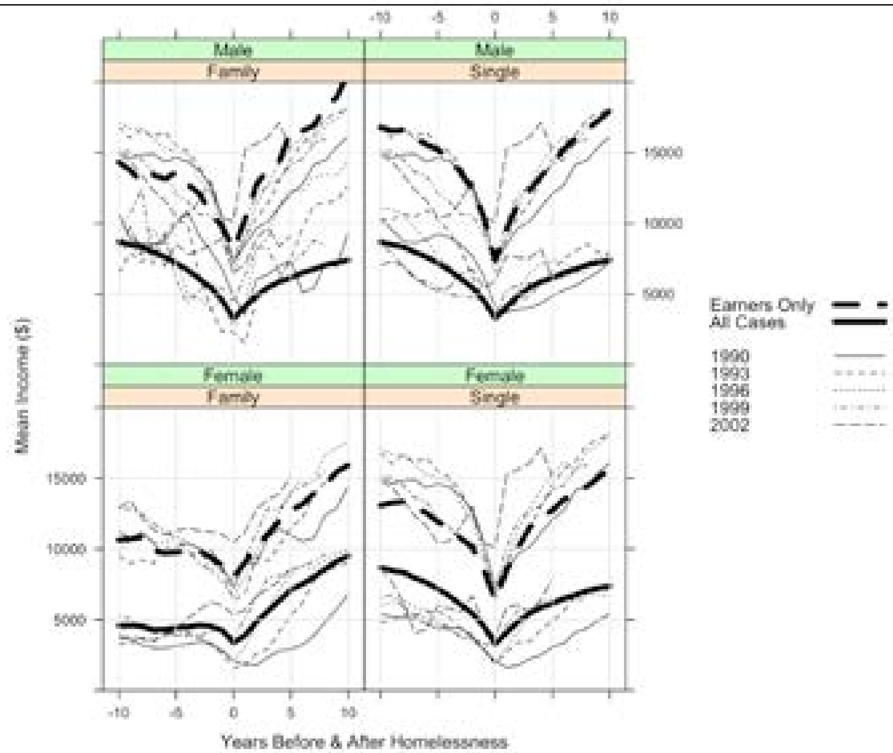
Earned Income Before and After First Instance of Homelessness for Families and Singles



Notes: Thick lines represent the trend for all 13 cohorts collapsed, and data from individual cohorts selected at 3-year intervals are presented for clarity. Year 0 indicates year of shelter entry.

Exhibit 6

Earned Income Before and After First Instance of Homelessness for Male and Female Single and Family Households



Notes: Two sets of results are presented in each part of the exhibit, for earners only and for all cases. Thick lines represent the trend for all 13 cohorts collapsed, and data from individual cohorts selected at 3-year intervals are presented for clarity. Year 0 indicates year of shelter entry.

Exhibit 7

Adults in Families—Results of Mixed-Effects Regression Models for Employment and Earned Income Over Time for Men and Women Who Had Records of Shelter Use in New York City Between 1990 and 2002

Independent Variables	Employment			Earnings (Earners Only)			Earnings (All)		
	b	*SE*	*t*	*b*	*SE*	*t*	*b*	*SE*	*t*
Intercept	46.02	0.45	101.79	846.11	1.11	765.80	758.10	1.93	393.20
Year (segment 1, 10 years preceding shelter)	– 3.19	0.19	– 16.75	– 7.51	0.46	– 16.20	– 8.48	0.74	– 11.50
Year (segment 2, 10 years following shelter)	2.06	0.19	10.62	14.14	0.30	47.90	19.78	0.36	54.00
Not in shelter	4.11	0.07	57.57	17.60	0.44	39.80	34.55	0.38	92.00
Episodic shelter use (versus long term)	– 7.71	0.14	– 53.43	– 48.02	0.87	– 55.40	– 62.48	0.77	– 80.80
Transitional shelter use (versus long term)	3.64	0.06	58.45	2.93	0.37	7.90	11.81	0.31	38.00
Exit to stable housing	3.77	0.06	62.14	5.06	0.37	13.80	12.64	0.30	41.50
Age	– 4.10	0.02	– 216.93	10.68	0.11	94.60	2.86	0.10	29.30
Male	13.78	0.15	92.54	10.29	0.70	14.70	48.55	0.74	66.20
White (versus Black)	– 4.60	0.28	– 16.40	– 38.93	1.42	– 27.30	– 37.41	1.39	– 26.90
Hispanic (versus Black)	– 9.32	0.07	– 141.37	– 9.69	0.45	– 21.60	– 31.40	0.34	– 92.30
Other (versus Black)	– 0.60	0.10	– 6.32	2.43	0.45	5.40	– 7.22	0.45	– 16.10
Year (segment 1, 10 years preceding shelter) squared	– 0.75	0.02	– 36.83	– 1.00	0.04	– 25.70	– 1.26	0.06	– 21.60
Year (segment 2, 10 years following shelter) squared	– 0.05	0.00	– 82.30	—	—	—	—	—	—
Male x year (segment 1)	– 0.02	0.02	– 1.42	– 0.68	0.02	– 30.10	– 0.95	0.04	– 27.20
Male x year (segment 2)	– 0.99	0.08	– 12.35	—	—	—	—	—	—
Male x year (segment 1) squared	– 3.14	0.10	– 30.56	0.72	0.30	2.40	– 6.56	0.37	– 17.60
Male x year (segment 2) squared	– 0.04	0.01	– 4.76	—	—	—	—	—	—
Male x year (segment 1) cubed	0.19	0.01	18.19	0.02	0.03	0.60	0.39	0.04	11.10

b = coefficient value. SE = standard error. t = t-value.

Notes: Employment rates are in percent units (for example, 45 percent), and coefficients can be interpreted in terms of the percent change in employment per a one-unit increase in each predictor, adjusted for other effects in the model (for example, employment drops 4.1 percent per increase in age interval). Earnings are in dollar units with a natural logarithmic transformation and, therefore, can also be interpreted in terms of the percent change in earnings per a one-unit increase in the value of each predictor, adjusted for other effects in the model (for example, for each increase in the age interval, earnings—among earners only—increases 10.68 percent).

Exhibit 8

Single Adults—Results of Mixed-Effects Regression Models for Employment and Earned Income Over Time for Men and Women Who Had Records of Shelter Use in New York City Between 1990 and 2002

	Dependent Variables								
	Employment			Earnings (Earners Only)			Earnings (All)		
Independent Variables	*b*	*SE*	*t*	*b*	*SE*	*t*	*b*	*SE*	*t*
Intercept	57.67	0.23	253.30	833.45	0.85	985.10	778.61	1.00	776.20
Year (segment 1, 10 years preceding shelter)	– 1.28	0.05	– 27.60	– 9.67	0.43	– 22.70	– 15.22	0.51	– 30.10
Year (segment 2, 10 years following shelter)	– 0.03	0.11	– 0.30	13.86	0.28	50.30	15.52	0.44	35.40
Not in shelter	– 0.04	0.08	– 0.50	36.35	0.38	96.90	34.35	0.42	82.40
Episodic shelter use (versus long term)	– 4.39	0.13	– 34.90	– 23.30	0.58	– 40.60	– 28.14	0.64	– 44.20
Transitional shelter use (versus long term)	– 1.36	0.10	– 14.10	– 2.22	0.44	– 5.00	– 12.21	0.48	– 25.20
Exit to stable housing	9.02	0.08	113.00	13.91	0.36	38.80	36.59	0.40	91.90
Age	– 5.87	0.02	– 340.80	6.37	0.08	75.10	– 5.99	0.09	– 65.80
Male	13.22	0.10	135.20	22.01	0.51	43.10	49.44	0.51	97.10
White (versus Black)	– 3.15	0.11	– 29.30	– 4.85	0.51	– 9.50	– 5.65	0.55	– 10.20
Hispanic (versus Black)	– 5.88	0.10	– 61.80	– 3.05	0.43	– 7.10	– 15.55	0.48	– 32.10
Other (versus Black)	– 0.26	0.12	– 2.10	– 0.88	0.55	– 1.60	– 1.17	0.60	– 2.00
Year (segment 1) squared	– 0.04	0.01	– 3.30	– 0.84	0.03	– 24.30	– 1.04	0.04	– 23.70
Year (segment 2) squared	—	—	—	– 0.83	0.03	– 31.70	– 0.95	0.04	– 22.20
Male x year (segment 1)	– 0.13	0.02	– 6.00	– 1.14	0.23	– 4.90	0.74	0.23	3.30
Male x year (segment 2)	– 1.89	0.05	– 36.40	– 1.08	0.21	– 5.20	– 6.50	0.24	– 27.50
Male x year (segment 1) squared	—	—	—	0.05	0.02	2.60	0.15	0.02	9.80
Male x year (segment 1) squared	0.11	0.01	24.10	0.05	0.02	2.80	0.33	0.02	15.90

b = coefficient value. SE = standard error. t = t-value.

Notes: Employment rates are in percent units (for example, 45 percent), and coefficients can be interpreted in terms of the percent change in employment per a one-unit increase in each predictor, adjusted for other effects in the model (for example, employment drops 5.87 percent per increase in age interval). Earnings are in dollar units with a natural logarithmic transformation and, therefore, can also be interpreted in terms of the percent change in earnings per a one-unit increase in the value of each predictor, adjusted for other effects in the model (for example, for each increase in the age interval, earnings—among earners only—increases 6.37 percent).

The results presented in exhibit 7 show how, for adults in families, the time around the onset of shelter use reflects an economic bottoming out. Across all three models, the contrasting effects for the 2-year variables indicate a progressive decline in employment and earnings in the decade leading up to shelter onset, followed by a reversal in coefficient value for the decade following shelter onset indicating a recovery from the losses of the prior decade. The positive coefficient values associated with the variable "year" in the time segment following initial shelter use were in addition to the strongly positive coefficient values associated with not being in shelter. Additionally, adults in families with episodic stay patterns had worse employment and earnings outcomes, and adults in families with temporary stay patterns had only modestly better, albeit significant, outcomes in these areas when compared with those with long-term shelter stay patterns. Exit to stable housing was associated with better outcomes in all three models for families. Finally, looking at the demographic covariates, increasing age was associated with declines in employment and with increases in earnings, with the earnings coefficient remaining positive in the earnings model for the complete group. Male heads of households in families clearly did better than women, especially with respect to employment. All racial and ethnic groups had worse outcomes in comparison with those of Black race.

Based on the results for the single adults in exhibit 8, a steady decline in employment was associated with the "year" covariate for the time period preceding the onset of shelter use and then a nonsignificant association in the subsequent period. Juxtaposing these findings means that single adults who did work, earnings also declined with time in the preshelter period but rebounded in the 10-year period following the initial shelter episode. This earnings rebound was strong enough so that it maintained its overall positive association with earnings in the years following shelter onset in the third model, which included all persons. Not being in shelter also had no effect on employment but had a strong, positive association with earnings. Compared with those in the long-term cluster, those single adults with both episodic and temporary stay patterns fared worse across all models, the former substantially so and the latter to a more modest degree. Stable exit was also associated with more positive participation and earnings outcomes for single adults. Among the demographic variables for single adults, increased age was associated with decreased participation and increased earnings, men had higher rates of participation and amounts of earnings compared with women, and the White and Hispanic groups had worse outcomes compared with the Black reference group.

Discussion

At the most basic level, the results of this study are consistent with the literature on employment among homeless adults—even when sheltered, 38 percent of adults in families and 45 percent of single adults received wage income. Beyond that, wage income bottomed out, and employment rates declined for both groups in the period only prior to the onset of homelessness. This finding supports an association between job-related shocks and homelessness that are frequently overlooked in research on homelessness, with its predominant focus on more static behavioral and physical health-related determinants.

Following the onset of homelessness, the vocational fortunes of adults in families and single adults diverge after job loss and homelessness. In what Ellwood (1982) described as the difference between "blemishes" and "scars" (Ruhm, 1991), adults in families, as a group, were more blemished in that, following their homelessness, posthomeless levels of employment and earnings recovered and exceeded prehomeless levels. For single adults, however, the job-related shock and homelessness were more scarring; although wages recovered, employment continued a steady decline. The divergences in these trends among the two subpopulations likely have bases in gender and age differences among the two sheltered subpopulations, shown in exhibit 1, and the differences in disability, employability, and family composition that stem from these demographic differences. Separate and more detailed explanations for these trends adults in families and single adults will be forthcoming shortly.

The aggregate levels of wages and employment prior to homelessness challenge stereotypes of homeless adults as unemployable and extremely low-income people. Among single adults, in an average year prior to becoming homeless, slightly more than one-half worked. Among those who did work, average earnings of nearly $13,000 suggest that income could be on either side of the poverty income guidelines, depending on household size. For adults in families, average employment (43 percent) and average annual earnings of workers ($8,483) were lower but still substantial considering that many of the adults in this group were single mothers with preschool-age children. As only aggregated data were available for this study, we are unable to lay out the individual dynamics between work, earnings, and homelessness. However, these findings support conclusions that, in the aggregate, the onset of homelessness is sensitive to loss of employment, regardless of whether this sequence is direct or mediated by factors such as physical or mental health crises that, sui generis, may also contribute to becoming homeless.

This conclusion applies to those adults in the study group who are homeless both as individuals and with their families. After the onset of homelessness, however, the employment trajectories for each of these subgroups diverge.

Families

The effect of homelessness on employment for adults in families more resembles a time-limited setback than a protracted decline. Many homeless adults in families started, resumed, or continued employment following shelter entry, as employment among this group dropped from 43 percent in the overall preshelter period to 38 percent during the time they were sheltered but then rebounded to 58 percent during the overall postshelter period. Among wage earners, average annual income from wages increased following shelter use to nearly $16,000. This amount, depending on household size, hovers around poverty income guidelines.

Various factors may have contributed to this recovery. Disproportionately, families in shelters are homeless when their children are of preschool age (Culhane and Metraux, 1999). As the children age, options for childcare (including school enrollment) increase, and logistical barriers to working ease. Employment and earnings were also higher for adults in families who were sheltered later in the study period, a trend that likely reflects greater economic prosperity and increased job opportunities in the late 1990s and early 2000s but may also have been facilitated by the greater emphasis on work for welfare recipients that was part of the Personal Responsibility and Work Opportunity Reconciliation Act (NASW, 1996), colloquially known as “welfare reform” that was enacted in 1996.

Also, homeless-specific factors were associated with employment and earnings. Longer shelter stays did not facilitate increased employment or earnings, which supports Culhane et al.’s (2007) skepticism about the benefit that homeless families receive from extended stays in shelter-based transitional housing programs. In contrast, exiting from shelter to stable housing was associated with higher employment and earnings. It is unclear from these data whether work facilitated housing stability or vice versa, or whether the relationships were bidirectional and mutually reinforcing (Swami, 2017). In addition, the qualities that enhanced the ability of persons to secure and maintain work may also have facilitated their making stable living arrangements on leaving shelter. Although more research is needed to understand the nature of this relationship, on a practical level, measures to increase opportunities for one domain (employment or housing) stand to facilitate improved outcomes in the other.

Single Adults

Like adults in families, those single adults who did work after their initial bout of shelter use realized aggregate earnings levels that exceeded preshelter earnings levels within a decade. Unlike adults in families, the levels of employment continued to decline (at a reduced level) after shelter use. This latter trend is consistent with the literature reviewed previously, in which homelessness typically occurred after a process of progressive detachment from the labor force. This fits the previously described narrative in which common barriers such as disability, substance abuse, criminal justice involvement, and lack of job skills all become more acute with increasing age.

Despite this trend, roughly 40 percent of the single adults did maintain at least some attachment to the work force. Judging by the average annual earnings (and assuming these earnings were sustained to some degree), this work generated enough income to facilitate lasting exits from homelessness for a substantial proportion of these wage earners. The positive association found between exits to stable housing and both higher earnings and employment supports this outcome. However, we also found an association between higher employment and earnings and long-term shelter stay patterns in both the descriptive and multivariate results, and both prior to and following onset of shelter. This finding is counterintuitive, as long-term, “chronic” stay patterns are typically associated with age and disability (Kuhn and Culhane, 1998; HUD, 2007) and should be tied to worse employment outcomes. The findings in this article suggest that a substantial constituency exists among single adults with long-term shelter-use patterns that would benefit from employment and vocational assistance (Gale and Rio, 2006). This association would indicate the need for a policy shift to counterbalance the disproportionate focus on sustained disability-related needs among this group.

Demographic Factors

Among demographic factors, the difference in participation rates, and in earnings, between men and women is the most prominent finding. This gender disparity mirrors that which is found in the general workforce. In this context, it disproportionately affects sheltered families, who are overwhelmingly headed by single women, and affects the wellbeing of sheltered children and their prospects of regaining housing. Among the other demographic characteristics, increasing age, as expected, was associated with declining employment but also to higher earnings for those remaining in the workforce. Black race was associated with better participation and earnings outcomes when compared with the other racial and ethnic categories in this study, perhaps because more persons of Black race were homeless primarily for economic reasons (that is, with less disability and other vocational impairments) and were thus at an advantage, among the homeless milieu, in the labor market.

Limitations

Finally, we need to point out limitations to this study. This study, with its focus on Social Security Administration earnings, underreported total income received by homeless households in two ways. First, any under-the-table work (that is, work not reported to SSA) and income received from working in the informal economy were not represented in these data. An undetermined but substantial amount of income that extremely low-income people receive comes from such informal labor (Edin and Lein, 1997), which includes (but is not limited to) illicit activities, odd jobs, panhandling, and scavenging. Such labor is often more tenuous and less amenable to supporting efforts to gain and maintain stable housing (Gowan, 2010; Snow and Anderson, 1993).

A second way that these earnings data underreported total income was in their failure to include any income assistance received from benefit programs. This omission includes income from benefits for families, such as TANF, and for people with disabilities, such as the SSA's Supplemental Security Income. Although these income assistance programs and others like them often do not move a household above the poverty guidelines, they can represent a steady income source and, when coupled with other benefits such as Supplemental Nutrition Assistance Program, or SNAP (that is, food stamps), and subsidized housing, can lead to sustained exits from homelessness. Furthermore, many recipients of benefits from programs such as TANF and Supplemental Security Income are out of the workforce in that they are not actively searching for work and do not consider them employable. Thus, the employment rate reported in this article is lower than if one were only to consider those who are engaged in working or seeking work.

This study examined homelessness insofar as persons using shelter in Department of Homeless Service's administrative records appear. Thus, we did not include the undetermined number of persons not making use of shelter services. The size of this homeless subgroup is notoriously difficult to assess, but a general agreement is that in services-rich areas, such as New York City, the large majority of homeless persons come into at least some contact with the shelter system. In NYC, DHS administers or supports most shelters, approximately 85 percent, and they report into the DHS database.

This study examined a sheltered homeless population in an atypical U.S. city. Evidence suggests that, other than the scale of homelessness in NYC, the characteristics of its population are not that different than that of other U.S. cities (Metraux et al., 2001). However, we in no way maintain that the population examined was representative of other homeless populations. Nonetheless, the range of this study, with 160,525 sheltered persons and 2.9 million person years, renders this study group an important part of the homeless population to study in its own right.

The data for this study were only available in aggregated form, and although this aggregating ensured the confidentiality of personal data on employment and earnings, it created limitations on drawing conclusions. Population-level participation rates and earnings amounts could be tracked over time, but individual earnings could not be. Thus, no way of discerning individual employment trajectories was available that could be used to gain insights on key topics such as stability of earnings among individuals over time. Moreover, beyond information on shelter-use dynamics and basic demographics, no collateral information on individual or contextual factors exist that could also affect employment and earnings. This deficiency limits the parameters of this study to reporting basic employment trends among sheltered adults and leaves many unanswered questions for further research.

Finally, although we document trajectories and identify associations between such dynamics as employment and regained housing stability, or chronic homelessness and workforce participation, we reiterate that the data do not support making inferences about the directions of these associations, nor do these findings have any predictive value. Nonetheless, only identifying these associations provides clear directions for future research and policy initiatives.

Conclusion

This study represents, to our knowledge, the first to make use of administrative data on employment and earnings to systematically track a large homeless population during an extended period of time. A set of insights on employment among homeless adults emerges that is consistent with findings of previous research, and it also shows employment to play a larger role with descending into and recovering from a sheltered homeless episode than previously documented. This conclusion has implications not only for this population but also for those in the more general population of working low-income people. As a significant proportion of this population has a work history, similarly the precarious nature of low-wage employment leaves a broader segment of the working low-income people facing the very real risk of homelessness.

The levels of employment and wage earnings suggest that the homeless, as a population, struggle in the labor market. At the same time, the associations between employment and housing and the progressive gains adults in families made in the labor market following shelter stays show the promise of targeting employment as a means to prevent and ameliorate homelessness. Enhancing opportunities for and rewards from employment for the homeless population enjoys nearly universal support as a policy goal. In contrast, employment among the homeless population has been a lightly tread on area of research and hopefully additional research in this area, and more generally on the economic correlates of homelessness, will follow.

Appendix

The exhibits on the following two pages present further detail on the data cited in this article.

Exhibit A-1

Aggregated Dataset Observations—Eight Sample Cells

Cell	Earnings Year	Number With Earnings	Number With No Earnings	Total N	Earnings (Sum) ($)	Earnings (SD) ($)	First Year in Shelter	Shelter Type	Sex	Age	Race or Ethnicity	Exit Type	Shelter Stay Pattern
1	1980	15	3	18	263,409.21	9,793.89	1990	Single	M	35–40	White	Nonpermanent	Episodic
2	1987	7	10	17	92,159.48	16,968.66	1994	Single	F	35–40	Black	Permanent	Chronic
3	1986	14	11	25	92,901.24	6,406.28	1990	Single	M	18–25	Hispanic	Nonpermanent	Episodic
4	1997	8	9	17	136,229.14	11,180.92	1990	Single	M	25–30	Other	Nonpermanent	Temporary
5	1981	5	15	20	47,061.78	4,769.60	1990	Family	F	45–50	Hispanic	Permanent	Temporary
6	1994	6	7	13	123,301.79	14,517.00	1998	Family	M	30–35	Black	Permanent	Chronic
7	2001	9	3	12	59,132.08	5,862.01	1998	Family	F	18–25	White	Nonpermanent	Temporary
8	1999	7	15	22	111,394.35	10,159.53	1990	Family	F	45–50	Black	Permanent	Chronic

F = female. M = male. SD = standard deviation.

Notes: To limit table size, table does not show data for time period of data, that is, whether the data for the aggregated cluster were before, during, or after the first shelter stay. However, such data can be inferred by comparing the data included in the Earnings Year with that in the first Year of Homelessness columns.

Exhibit A-2

Distributions of Aggregate Cells by Component Criteria (1 of 2)

Criteria and Categories	Number of Cells	Possible Cells	Percent of Total	Percent of Possible
Total cells	**52,591**	**1,822,500**	**100.0**	**2.9**
Age				
18–24	6,475	202,500	12.3	3.2
25–29	6,852	202,500	13.0	3.4
30–34	7,339	202,500	14.0	3.6
35–39	6,885	202,500	13.1	3.4
40–44	5,234	202,500	10.0	2.6
45–49	3,433	202,500	6.5	1.7
50–54	1,718	202,500	3.3	0.8
55 or more	1,394	202,500	2.7	0.7
Unknown	13,261	202,500	25.2	6.5
Sex				
Male	28,167	607,500	44.7	3.9
Female	23,490	607,500	53.6	4.6
Unknown	934	607,500	1.8	0.2
Race or ethnicity				
Black	24,430	364,500	46.5	6.7
Hispanic	14,611	364,500	27.8	4.0
White	6,657	364,500	12.7	1.8
Other	4,523	364,500	8.6	1.2
Unknown	2,370	364,500	4.5	0.7
Shelter type				
Single	17,818	911,250	33.9	2.0
Family	34,773	911,250	66.1	3.8
First year of shelter stay				
1990	4,354	145,800	8.3	3.0
1991	4,336	145,800	8.2	3.0
1992	4,254	145,800	8.1	2.9
1993	4,126	145,800	7.8	2.8
1994	4,311	145,800	8.2	3.0
1995	4,376	145,800	8.3	3.0
1996	4,325	145,800	8.2	3.0
1997	4,302	145,800	8.2	3.0
1998	4,249	145,800	8.1	2.9
1999	3,821	138,510	7.3	2.8
2000	3,880	131,220	7.4	3.0
2001	4,129	123,930	7.9	3.3
2002	2,128	116,640	4.0	1.8
Shelter use pattern				
Chronic	16,330	607,500	31.1	2.7
Episodic	7,302	607,500	13.9	1.2
Transitional	28,959	607,500	55.1	4.8
Exit type				
To permanent housing	22,910	607,500	43.6	3.8
To nonpermanent housing	29,272	607,500	55.7	4.8
Unknown	409	607,500	0.8	0.1

Exhibit A-2

Distributions of Aggregate Cells by Component Criteria (2 of 2)

Criteria and Categories	Number of Cells	Possible Cells	Percent of Total	Percent of Possible
Timing of earnings year				
Before shelter	24,699	663,390	47.0	3.7
During shelter	10,313	568,620	19.6	1.8
After shelter	17,579	537,030	33.4	3.3
Earnings year				
1980	183	2,430	0.3	7.5
1981	363	4,860	0.7	7.5
1982	517	7,290	1.0	7.1
1983	701	9,720	1.3	7.2
1984	905	12,150	1.7	7.4
1985	1,125	14,580	2.1	7.7
1986	1,344	17,010	2.6	7.9
1987	1,557	19,440	3.0	8.0
1988	1,790	21,870	3.4	8.2
1989	1,984	24,300	3.8	8.2
1990	2,158	53,460	4.1	4.0
1991	2,278	87,480	4.3	2.6
1992	2,359	94,770	4.5	2.5
1993	2,413	94,770	4.6	2.5
1994	2,494	94,770	4.7	2.6
1995	2,546	94,770	4.8	2.7
1996	2,659	94,770	5.1	2.8
1997	2,744	94,770	5.2	2.9
1998	2,848	94,770	5.4	3.0
1999	2,964	94,770	5.6	3.1
2000	3,051	94,770	5.8	3.2
2001	2,795	87,480	5.3	3.2
2002	2,520	53,460	4.8	4.7
2003	2,234	48,600	4.2	4.6
2004	1,978	43,740	3.8	4.5
2005	1,677	38,880	3.2	4.3
2006	1,315	34,020	2.5	3.9
2007	1,089	29,160	2.1	3.7

Note: The 1,822,500 total cells represent the maximum combinations of cells for all criteria except for "Earnings Year" and "Timing," which have lower numbers of maximum combinations (1,462,860 and 1,769,040 respectively) due to logistical impossibilities related to some of the combinations (for example, not all earnings years can be timed as "after" onset of shelter use, as earnings years are tracked starting in 1980, and the earliest onset of shelter use was 1990).

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