Risk and Recovery

Understanding the Changing Risks to Family Incomes

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Low-Income Working Families
Paper 14

October 2009

The Urban Institute
2100 M Street, NW
Washington, DC 20037

This report is part of the Urban Institute's Low-Income Working Families project, a multiyear effort that focuses on the private- and public-sector contexts for families' success or failure. Both contexts offer opportunities for better helping families meet their needs.

The Low-Income Working Families project is currently supported by The Annie E. Casey Foundation, The John D. and Catherine T. MacArthur Foundation, and the Charles Stewart Mott Foundation.

This paper was funded by grants from The Annie E. Casey Foundation and The John D. and Katherine T. MacArthur Foundation to the Urban Institute's Low-Income Working Families project. The authors thank Richard Johnson, Signe-Mary McKernan, Margaret Simms, and Sheila Zedlewski for their helpful comments and James Kaminski, Justin Resnick, and Seth Zimmerman for their assistance with the data analysis and production of this paper.

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RISK AND RECOVERY: UNDERSTANDING THE CHANGING RISKS TO FAMILY INCOMES

Policymakers and the public are increasingly sensing that families are on their own, at the mercy of such uncontrollable events as illness or downsizing and at ever-increasing risk for suffering financial losses and declines in their material well-being as a result of these events. A spate of recent research has begun to assess whether this perception is borne out by data on income and earnings. Most of this work has focused on the volatility of earnings and income—for example, how much a family's income moves up or down from year to year—while some homes in on substantial declines in income. The data and research generally support the popular perception that income has grown more volatile over time, although the magnitude and timing of changes are sensitive to the data and measure of income used, the time span and population studied, and the analytic approach taken.

A focus on volatility captures the uncertainty families face in knowing what their income will be from one year to the next; however, more volatile incomes do not necessarily mean families or individuals are worse off. An increase in the variance of income over time also indicates that the income distribution is becoming less rigid over time and that families at the bottom at any given time are more likely to move up. Indeed, increased mobility is the flip side of increasing volatility.

In contrast, a focus on substantial income losses captures the downside of volatility. It is important to consider short-term losses as well as longer-term losses. Even short-term losses can disrupt family routines, elevate stress, and impede the ability to plan in addition to reducing total family resources, all of which may have lasting consequences for adults and children even if the loss of income is short-lived.

This paper examines the likelihood that nonelderly individuals in families with children experience a substantial drop in family income as well as the likelihood that their income returns to pre-decline levels. We use data from the 1996, 2001, and 2004 panels of the Survey of Income and Program Participation (SIPP) to examine the characteristics and circumstances of families that are most likely to see their incomes fall markedly as well as the factors associated with more speedy recoveries. Unlike studies that rely on annual data, we assess income changes (drops and recoveries) over a shorter time horizon of four-month periods.

Steep income drops are common, with 13.6 percent of families seeing their incomes fall by half at some point over the course of a year. The likelihood of income drops across the income distribution is U-shaped, with the lowest and highest income families the most likely to experience substantial income losses. In addition, women, those with disabilities, and those for whom earnings represents a relatively lower share of family income are more likely to experience substantial income drops than other individuals. Further, those whose incomes suddenly spike, who experience a job loss, who have an adult leave the family, or who become disabled are more likely to experience a substantial income drop than others.

Less than two in five individuals recover to at least 100 percent of their pre-drop income in the year after the drop. Women, older individuals, those without college degrees, and those whose income doubled in the months before a substantial income drop are less likely to return their pre-drop income levels than other individuals. In addition, those whose incomes were relatively low before a substantial income drop are more likely to recover and recover more quickly than higher-income individuals. Further, losing a job and having an adult leave a family at the time of a substantial income drop are associated with longer recovery times.

Below, we discuss prior research on income and earnings volatility. Next, we describe the data and methods we use to study income drops and recovery. We then present our findings and conclude with a discussion of their implications as well as directions for future research.

Background

Much of the recent work on volatility is rooted in the work of Gottschalk and Moffitt (1994), an analysis they extended and refined in several subsequent papers (1995, 2002, and 2006). Using data from the Panel Study of Income Dynamics (PSID), Gottschalk and Moffitt find a sharp rise in the transitory variance of men's earnings from the 1970s forward, although the timing of the increase varies somewhat with their analytic approach and there is some cyclical variation in the trend. Haider (2001) also uses the PSID to assess trends in male earnings volatility, and his findings are consistent with those of Gottschalk and Moffitt. In contrast, a recent study by the Congressional Budget Office (CBO 2007) uses administrative data from the Social Security Administration—the Continuous Work History Sample (CWHS)—and reports no change in men's earnings volatility. The CBO study focuses only on those whose earnings fall below the Social Security maximum, as the data are top coded; it also excludes self-employment income.

Studies that focus on family income rather than individual earnings tend to note increases in volatility.[1] Within families, many factors such as transfer income and the earnings of spouses and other household members may mitigate volatility in individual earnings. Nichols and Zimmerman (2008) carefully examine family income versus individual earnings volatility as well as how variations in the populations are considered, the way in which volatility is measured, and the treatment of extreme data points can influ-

ence the level, trend, and timing of changes in volatility. They conclude that family income has in fact grown more volatile over time, in no small part because of the increasing correlation between husbands' and wives' incomes.

A handful of studies explicitly examines large drops in income and earnings. Burkhauser and Duncan (1989) use data from the 1974 through 1983 waves of the PSID to assess the likelihood that individuals experience a 50 percent drop in their annual family income (adjusted for family size). They find that over the 10-year period examined, about one-quarter of 26- to 45-year-olds experienced a substantial income loss. In addition, Burkhauser and Duncan find that divorce is a particularly important event for triggering income loss for women.

Gosselin and Zimmerman (2007) report that the annual probability a 35- to 55-year-old experiences a 50 percent drop in income rises from an average of about 4 percent between 1974 and 1983 to an average of over 7 percent between 1994 and 2003. The chances of a drop in income adjusted for needs rise from 3 to 7 percent over the same periods.[2] They also consider how life events contribute to income losses. Their key finding is that while the likelihood of risky events such as divorce or major job loss has not changed over the past 30 years, the chances that an individual experiencing such events will see his or her income drop substantially has increased.

The Congressional Budget Office (2007) focuses on earnings losses using administrative data (the CWHS) and supplements its findings with data from the 2001 SIPP. Using CWHS data from 1980 to 2003, CBO reports that about one in seven workers age 22 to 59 experience a 50 percent decline in annual earnings, but the chance of an earnings drop does not increase over time. Focusing on drops between 2001 and 2002 using the SIPP, CBO finds that about 11 percent of workers experience a substantial earnings drop. Lower earners and those with less education are more vulnerable to such drops than other workers.

Like these three studies, our study focuses on substantial income drops, but our work differs in several important ways. First, rather than assessing changes in income from year to year (or over a two-year period), we examine dramatic drops in monthly income, as even short-term dislocations may have adverse effects. Second, we supplement our research on income declines by assessing the factors associated with income recoveries. Third, we compare income drops and recoveries across cohorts from the mid-1990s and the early 2000s using data from the 1996, 2001, and 2004 panels of the SIPP. And fourth, we focus on individuals residing in families with children, as income dislocations may have particularly strong implications for them.

Data and Methods

We use data from the 1996, 2001, and 2004 Survey of Income and Program Participation panels for our analyses. The SIPP collects data on the income, employment, program participation, demographics, and well-being of U.S. households. Each panel starts with a fresh sample of households and interviews each household once every four months over a period of 36 to 48 months, depending on the panel. At each four-month interview, known as a wave, respondents are asked core questions focusing on income, program participation, and employment. In addition, each wave gathers some specific information (e.g., work history, welfare history, asset holdings) through special sets of questions known as topical modules. When weighted, the SIPP provides nationally representative estimates of the U.S. population. We use the SIPP core files to construct our main analysis file and merge on topical modules as appropriate.

Our sample consists of individuals between the ages of 25 and 61 living in families with children.[3] We restrict the sample to include only those adults who are household heads and their spouses or unmarried partners. We further restrict our sample by excluding adults whose baseline family income is zero or negative, for whom information is available in less than three months of any given interview wave, and whose income is entirely imputed.[4] Weights are drawn from wave 1 and are adjusted for sample selection but not subsequent attrition.[5] All tabulations, graphs, and regressions use these weights designed to make the sample representative of parents (or adults in a parental role) in families that include household heads, representing roughly 60 million adults.[6]

Our unit of analysis is the individual, but we focus on changes in the individual's social family income (standard errors are cluster-robust to account for correlated outcomes). Our definition of social family is the SIPP household reference person (or household head) and all individuals in the household related to that person as well as the reference person's unmarried partner and all persons in the household related to that unmarried partner. Finally, we include foster children of the reference person in the social family. Our definition of a social family is narrower than the SIPP household definition (which is essentially all persons who share food or a kitchen and can include individuals that are neither related to nor romantically linked to the family head) but more inclusive than the SIPP/Census family, which excludes cohabiting partners.[7] Implicitly, we assume that all of a family's resources are available to family members. A social family's income consists of all earnings (including self-employment income), interest, capital gains, and public and private transfers that the family members receive.

To measure an income drop, we compare current income with past income at some time interval, and our measurements are sensitive to these choices. We are interested in short-term changes that may not be captured by annual income measures, so we exploit the fact that SIPP data are collected in waves, once every four months. We focus on substantial income drops of 50 percent or more.

Although the SIPP gathers information on income in each month in a wave, most changes in income are observed in the first month in a wave, across the boundary between subsequent waves. Tabulations not shown here demonstrate that the likelihood of a 50 percent (or greater) drop in monthly family income is approximately five times higher between months adjoining a wave boundary (e.g., comparing months 8 and 9, in waves 2 and 3, respectively, to months 7 and 8, both of which are in wave 2 of the survey). This is partly due to "seam bias" in reporting (see, for example, Burkhead and Coder 1985; Hill 1987; and Moore and Kasprzyk 1984), in which transitions that occur at some time during the prior four months are more likely to be incorrectly assigned to the first month than other months by survey respondents. In addition, some sources of income are measured only at the wave time interval, and the income is divided across months in the wave during data processing, which artificially increases transition rates across seams. For these reasons, we focus on wave-to-wave changes in income rather than month-to-month changes.[8]

In our descriptive analyses, the first wave in the sample where a person is "at risk" of an income drop is the second wave of the survey; if income in wave 2 is substantially lower than income in wave 1, we consider that individual to have experienced an income drop. We continue to compare income from a given wave (t) to income in preceding wave ($t-1$) until we find a substantial drop in income or until we run out of data on that individual. In our multivariate analyses, however, the period at risk begins in wave 3; this allows us to distinguish between income drops that directly follow "spikes" in income from those that represent a large, rapid drop from a more long-standing income level.

We deem an individual to have fully recovered from an income drop when that individual's social family income returns to or exceeds its pre-decline level. Once individuals experience a substantial income drop (e.g., at least a 50 percent drop in income), they are not at risk for experiencing subsequent drops until they first experience a recovery.

In this paper, we focus on only the first observed income drop, if any, and define recovery for those who experience a substantial income drop using the maximum income attained in the waves following the drop. For the purposes of observing recovery, we have at most nine observations on each individual (at most seven in the 2001 SIPP), and substantially less for most individuals.

We assess the likelihood of substantial income drops and recoveries for individuals at different points in the income distribution to see if the poor or the rich are more vulnerable to losses and whether the chances for recovery depend on the level of baseline income. In addition, we estimate logit models assessing the factors that are associated with a 50 percent or greater drop in income as well as those associated with a full recovery from such a drop. The factors included in the regressions for income drops and recoveries are sex, age, race/ethnicity, education, marital status, number of adults present in the social family, disability status,[9] the share of social family income from earnings, baseline income quintile (in the first wave of the panel), whether income more than doubled between the two previous waves, and variables indicating the SIPP panel from which the individual observation is drawn.

The logit models focus on income drops within a year and recoveries within a year following a substantial income drop, but this approach does not allow us to link life-course events such as a change in job status with income drops or recoveries, nor does it allow us to assess the speed of recoveries. To address these questions, we also estimate discrete time hazard models.

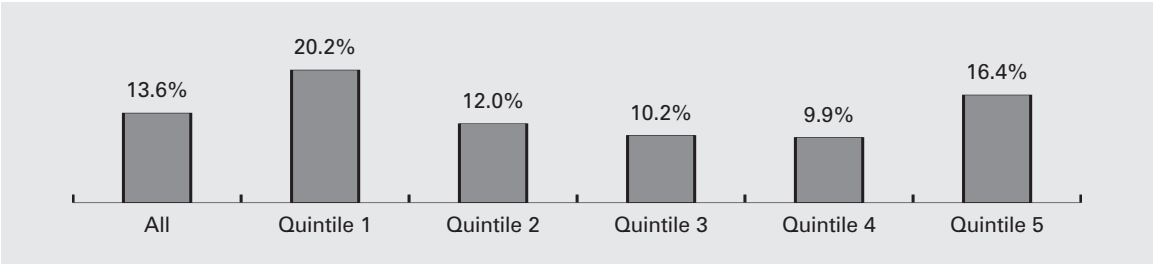
The discrete time hazard models are estimated using logistic regression, where each individual contributes observations to the model at each point in time until an event is observed.[10] The events here are a 50 percent or greater drop in income and, conditional on a substantial income drop, a full recovery. The factors included in the regressions for income drops and recoveries are sex, age, race/ethnicity, education, marital status, number of adults present in the social family, disability status, change in family composition and work/disability, the share of social family income from earnings at baseline, baseline income quintile, whether income more than doubled between the two previous waves, and variables indicating the SIPP panel from which the individual observation is drawn. For recovery models, the factors are measured as of the wave of the drop and as of the current wave (e.g., marital status is measured in the wave an income drop occurred, carrying forward that value to all future waves, and in each wave). All tabulations and regressions are weighted and show *t*-statistics clustering by primary sampling unit.[11]

Results

Substantial Drops in Income

Substantial declines in income are common over the course of a year. Figure 1 shows the general share of adults in social families that experience income drops of at least 50 percent as well as the share by initial income quintile.[12] More than one in eight adults in families with children experience a 50 percent or greater drop in family income in a year.[13] The proportion of individuals in families with children experiencing a drop in income is U-shaped across the income distribution. Individuals in the lowest and the highest income quintiles are substantially more likely to experience income drops than individuals in

FIGURE 1. Probability of Experiencing a Substantial Income Drop by Income Quintile



Source: Authors' tabulations from the 1996, 2001, and 2004 panels of the SIPP.

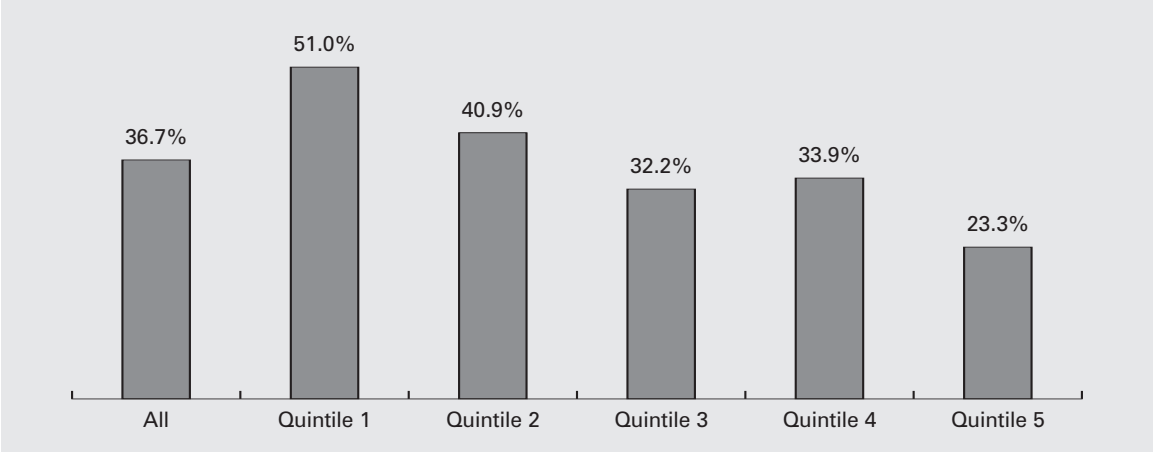
Note: A substantial drop in income is a 50 percent decline in family income between consecutive four-month periods.

the middle quintiles. Over 20 percent of individuals in the lowest income quintile lose at least half their income at some point during the course of a year. The portion declines to 12.0 percent for the second quintile and falls to about 10 percent for quintiles three and four. The proportion of individuals with a substantial drop then rises to 16.4 percent for the highest income quintile.

Recovery from Income Drops

Although large income drops are fairly common, their ultimate impact on well-being is at least in part related to the permanence of the decline. If individuals in families with children quickly recover their lost income, then the consequences for well-being of a short-term drop in income may be modest. Figure 2 shows that 36.7 percent of individuals whose monthly family income drops by 50 percent or more make a full recovery within a year.[14] The likelihood of total recovery is higher for those in the lowest income quintiles than in the highest quintile. Over half of those experiencing a 50 percent decline in income in the bottom income quintile fully recover within a year. In contrast, less than a quarter of those in the highest income quintile recover fully.

FIGURE 2. Probability of Full Recovery from a Substantial Income Drop by Income Quintile



Source: Authors' tabulations from the 1996, 2001, and 2004 panels of the SIPP.

Notes: A substantial drop in income is a 50 percent decline in family income between consecutive four-month periods. A full recovery is defined as income returning to or exceeding its pre-drop level. This figure considers recoveries that occur within one year of a drop.

Another way to appreciate the duration of income drops is to consider the share of individuals whose monthly family income drops by at least 50 percent and remains below 50 percent for at least a year, referred to here as "no recovery." For 23.4 percent of families experiencing large income drops, there is no recovery (figure 3). Their incomes remain low (less than half its prior level) for at least a year. Those in the highest income quintile are the most likely to experience no recovery (34.9 percent) while those in the lowest quintile are the least likely (16.1 percent).

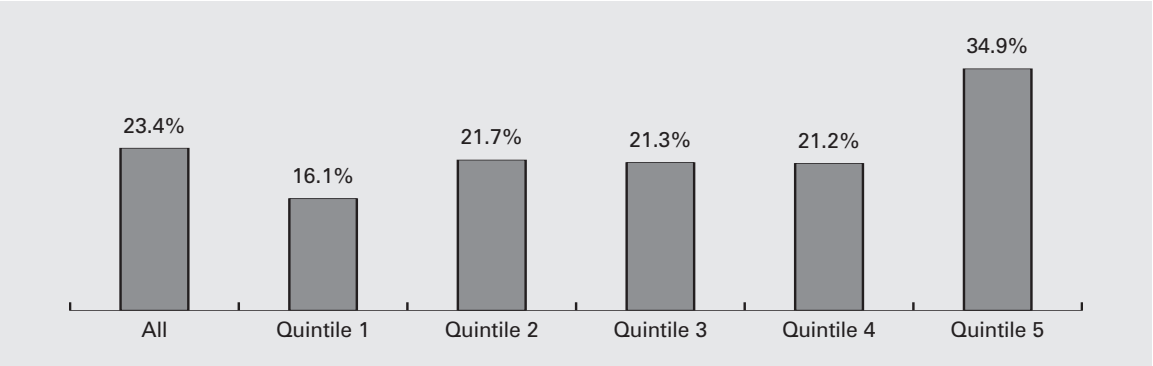
Changes in Income before a Substantial Drop

In addition to the duration of a decline in income, another issue for interpreting the impact of income drops on well-being is the possibility that pre-drop income was unusually high. In other words, if a substantial drop in a family's income follows a temporary spike in income, an observed "drop" may simply be a return to their more typical level of income. To understand how common this is in our sample, we examine income drops and recoveries for those cases in which we can observe multiple waves of pre-drop income. Note that 39.5 percent of all first observed income drops occur between waves 1 and 2 in our data; as such, we do not know whether the drop in income was preceded by an unusually large increase in income. We exclude these observations from the rest of the analyses.

We find that 26.1 percent of our substantial income drops follow spikes in income. In these situations, income in the wave before the drop was more than twice as high as income in the preceding wave. Thus, the drop for these families may represent a return to normal income levels following a short-term windfall. However, it is important to note that among these individuals, 13.1 percent experienced such large declines in income that post-drop income was 50 percent or more below their pre-spike incomes (income two waves before the drop). For these individuals, even if their income had not risen markedly before the income drop, they still experienced a substantial drop in income. In addition, among all individuals experiencing substantial income drops, 57.5 percent had stable or even declining incomes in the two periods before we observe the substantial income drop.[15] For another 16.4 percent, income in the two waves before an observed drop increased modestly.[16]

We also consider how recovery rates vary based on whether an income drop necessitating a recovery was preceded by an income spike. We find that among those whose incomes did not rise substantially before

FIGURE 3. Probability of Experiencing a Substantial Income Drop That Lasts at Least a Year by Income Quintile



Source: Authors' tabulations from the 1996, 2001, and 2004 panels of the SIPP.

Notes: A substantial drop in income is defined as a 50 percent decline in family income between consecutive four-month periods. A drop lasts a year if income remains below 50 percent of its pre-drop level for three consecutive four-month periods following the drop.

an income drop, 43.7 percent recovered their lost income within a year. In contrast, only 18.5 percent of individuals whose income drop followed an income spike fully recovered.

Factors Associated with Income Drops

To understand the characteristics and circumstances of families that are most likely to see their incomes fall markedly, we estimate two models. The first relates static characteristics at a point in time to the likelihood of experiencing a substantial drop in income over the course of a year. To better understand how life-course events influence income drops, we estimate a second model that assesses the factors associated with the likelihood of a substantial income drop at a point in time (wave) given that a person has not yet experienced such a drop. This allows us to see how factors such as changes in employment status, family structure, health status, and other personal and family circumstances affect the probability of a large decline in income.

Logit model—ever income drop in one year. Results from the first model, a logit estimating of the probability of experiencing a 50 percent drop in income over the course of a year, are shown in table 1. Not surprisingly, the variable indicating an income spike is a significant predictor of a substantial income drop: over the course of a year, those individuals whose family income in a given four-month period (wave) is more than double what it had been in the preceding wave are 24.1 percentage points more likely to experience a substantial drop in income within the next one or two waves.[17] As noted above, for some, a substantial drop in income may simply be a return to their customary standard of living. On the other hand, this also indicates that families have wildly varying incomes even within a given year.

We also find that some demographic groups are more likely to experience substantial income drops. Men are less likely to experience large income drops than women, all else equal, although the difference is small, about 0.7 percentage points. There are no clear patterns in the likelihood of income drops across age groups. Hispanics are more likely than white non-Hispanics to experience a 50 percent drop in income, with a difference of 2.2 percentage points. There is no significant difference between blacks and whites.

Education is not significantly correlated with substantial income drops. Divorced and never-married individuals are 2.1 and 3.5 percentage points, respectively, more likely to experience a substantial income drop than those who are married, but those in one-adult families are 2.3 percentage points less likely to have a large income drop than those living in two-adult cohabiting families. Taken together, these suggest that cohabitors face an elevated risk of substantial income loss, but that married couples are not afforded more protection against income losses than single individuals in families with children. Those who are disabled are 2 percentage points more likely to have a large income drop than those without a disability, but the severity of the disability is not significantly correlated with the chances of a drop.

Income composition accounts for some variation in the chance that an individual experiences a substantial drop in income. Those individuals whose family income is composed mostly of earnings are substantially less likely to experience a halving of income in one year. Individuals with earnings that represent less than a quarter of the family's income are 4.0 percentage points more likely to experience substantial income drops than those whose earnings constitute at least 75 percent of family income. This suggests that individuals living in families that rely heavily on transfer income as well as families that rely heavily on unearned sources of income like interest, dividends, rent, and capital gains are the most susceptible to income drops.[18]

TABLE 1. Logit of Income Drop in One Year, Pooled 1996, 2001, and 2004 SIPP Panels

	Coefficients	*T*-stats	Marginal effects of individual Xs[a]	*T*-stats
Income ever doubled before drop	1.562***	(26.56)	0.241***	(15.06)
Male	–0.0673***	(–4.05)	–0.00705***	(–4.10)
25–34 years old	–0.0714	(–1.49)	–0.00530	(–1.09)
45–54 years old	–0.124*	(–2.09)	–0.0103	(–1.76)
55–60 years old	0.0378	(0.21)	0.00909	(0.46)
Black	0.0713	(0.93)	0.00319	(0.40)
Hispanic	0.219**	(3.10)	0.0224**	(2.77)
Other nonwhite	0.126	(1.32)	0.00908	(0.87)
Less than high school education	0.0833	(1.03)	0.00941	(1.24)
High school education	0.0501	(0.82)	0.00598	(1.15)
Some college, nongraduate	–0.0560	(–1.04)	–0.00835	(–1.96)
Divorced or separated	0.214*	(2.38)	0.0212*	(2.08)
Never married	0.328**	(3.26)	0.0348**	(2.88)
One adult in social family	–0.221*	(–2.41)	–0.0226**	(–2.62)
Three or more adults in social family	0.0481	(0.67)	0.00793	(1.01)
Any disability (limits work)	0.178*	(2.01)	0.0196	(1.90)
Severe disability (prevents work)	–0.0998	(–0.79)	0.00683	(0.62)
Earnings ≤ 25% of income	0.344***	(3.72)	0.0398***	(3.38)
Earnings 25–50% of income	0.158	(1.47)	0.0173	(1.40)
Earnings 50–75% of income	0.0906	(1.15)	0.00973	(1.12)
Lowest income quintile	0.217*	(2.51)	0.0228*	(2.38)
Second-lowest income quintile	0.0442	(0.58)	0.00439	(0.57)
Second-highest income quintile	–0.0360	(–0.45)	–0.00348	(–0.45)
Highest income quintile	0.288***	(3.54)	0.0310**	(3.15)
1996 panel	–0.104	(–1.89)	–0.0165***	(–3.43)
2001 panel	0.192***	(3.31)	0.0248***	(3.99)
Constant	–2.391***	(–30.17)		
Unweighted sample count[b]	35,500			
Mean	0.131			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; t statistics in parentheses.

a. Change in predicted probability computed by generating the predicted probability of a change for each individual in the sample using all his or her actual characteristics except for the variable of interest. The predicted probabilities are then averaged and compared with the actual probability in the sample.

b. Regression uses sample weights.

As in our descriptive results, we find that the likelihood of experiencing an income drop varies with one's initial position in the income distribution. Individuals in the lowest or highest income quintiles at baseline are 2.3 and 3.1 percentage points, respectively, more likely to experience income drops than those in the middle income quintile, a U-shaped pattern consistent with our univariate results. Finally, we find that after controlling for these other characteristics, individuals are more likely to experience income drops in 2001 than 2004 but less likely to experience drops in 1996 than in 2004. The higher likelihood of income drops in 2001 may reflect the effects of the 2001 recession.

Hazard model of income drops. Our second model estimates how static characteristics and changes in life-course events influence the likelihood of experiencing substantial income drops using discrete time hazard models. Because we want to control for large changes in income before any observed drop, we only consider drops that occur in the third wave or later of our SIPP panels (with a total of

12 waves in 1996, 9 in 2001, and 12 in 2004). Thus, we have 7 to 10 observations of time at risk of an income drop.

Table 2 shows the results of our hazard model for income drops. The likelihood of experiencing such a drop in any given wave is about 4 percent. As well as the variables included in the "ever drop" logits above, we add variables capturing changes in employment status, family composition, and disability status to see if these changes in circumstances are associated with income drops. As is standard with hazard models, we also include a measure of time observed to be at risk of an income drop (log of number of time periods at risk). We discuss the estimated effects of these new variables first; then we discuss the other variables common across the logit and hazard models.

We find that *changes* in employment, family, and health circumstances are all significantly associated with experiencing a 50 percent drop in income in the next four months. Individuals living in families that experienced a job loss are 3.3 percentage points more likely to experience a substantial income drop than those in other families. If the job loss is involuntary, the chance of an income drop climbs by 7.5 percentage points.

The effects of changes in family composition depend, in part, upon family composition before any change. First consider the impact of adding an adult to the family. For individuals in families adding adults to families with one adult or three or more adults, the effect is captured by the variable "adult added to family," and it is not statistically significant. For individuals in two-adult families that have just become three-adult families, the estimated impact is captured by summing the coefficients on the "three or more adults in social family" and "adult added to family" variables; the net effect at the mean is a 2.1 percentage point decrease in the likelihood of an income drop at the time of this change in family composition. At the sample mean, losing an adult family member increases the likelihood of a substantial income drop by 5.8 percentage points for individuals in families of four or more adults, by 7.0 percent for those moving from three- to two-adult families, and by 7.9 percentage points for those moving from two- to one-adult families. Adding a child to the family increases the likelihood of an income drop by 1.4 percentage points (perhaps owing to decreases in parental labor supply), while having a child leave the family has no effect on the risk of an income drop.

Individuals living in families in which a potential worker becomes disabled are 1.4 percentage points more likely to experience a substantial income drop than others. If the individual is disabled, the likelihood increases by 0.5 percentage points.

Table 2 also shows that the longer an individual goes without experiencing a substantial income loss, the less likely he or she is to incur such a loss. As expected, having an income spike in the preceding wave strongly predicts income drops in the current wave.

In addition to changes in circumstances, individual and family characteristics influence the chances of an income drop in any particular wave. The findings are broadly similar to those associated with ever having an income drop over the course of a year, with a few exceptions. Men are less likely to experience an income drop than women, and age is uncorrelated with income drops. Hispanics are more likely than whites to experience income drops, but there is no significant difference between blacks and whites. Those with less than high school educations are more likely to experience income drops than those with college degrees or more, but there are no significant differences between those with other levels of education.

TABLE 2. Hazard of Income Drop, Pooled 1996, 2001, and 2004 SIPP Panels

	Coefficients	*T*-stats	Marginal effects of individual Xs[a]	*T*-stats
Changes in circumstances				
Employment				
Family lost a job	0.743***	(14.32)	0.0334***	(9.84)
Family lost a job involuntarily	0.604***	(7.35)	0.0749***	(10.55)
Family composition				
One adult in social family	0.556***	(9.06)	0.0267***	(7.67)
Three or more adults in social family	–0.286***	(–6.01)	–0.0111***	(–7.66)
Adult added to family	–0.249	(–1.78)	–0.0079	(–1.96)
Adult left family	1.514***	(16.94)	0.0997***	(9.64)
Child added to family	0.356***	(3.81)	0.0144**	(3.28)
Child left family	0.0287	(0.31)	0.00102	(0.31)
Health status				
Potential worker in family became disabled	0.349***	(3.86)	0.0141***	(3.34)
Log elapsed time	–0.160***	(–7.18)	–0.00607***	(–7.31)
Income doubled last wave	2.317***	(48.62)	0.204***	(17.36)
Characteristics				
Male	–0.0277*	(–2.49)	–0.000975*	(–2.52)
25–34 years old	–0.023	(–0.69)	–0.0008	(–0.74)
45–54 years old	–0.0046	(–0.13)	0.0000171	(0.01)
55–60 years old	0.0775	(0.85)	0.00311	(0.92)
Black	–0.0268	(–0.53)	–0.0019	(–1.13)
Hispanic	0.179***	(3.86)	0.00669***	(3.68)
Other nonwhite	0.0288	(0.44)	0.00018	(0.08)
Less than high school education	0.150**	(2.7)	0.00520**	(2.84)
High school education	0.0465	(1.14)	0.00112	(0.98)
Some college, nongraduate	–0.012	(–0.33)	–0.0015	(–1.58)
Divorced or separated	–0.0328	(–0.56)	–0.0013	(–0.65)
Never married	0.0477	(0.69)	0.00189	(0.79)
Any disability (limits work)	0.137*	(2.06)	0.00505	(1.95)
Severe disability (prevents work)	0.149	(1.75)	0.0108***	(3.84)
Earnings ≤ 25% of income	0.287***	(4.82)	0.0112***	(4.31)
Earnings 25–50% of income	0.212**	(3.07)	0.00809**	(2.82)
Earnings 50–75% of income	0.107*	(2.03)	0.0039	(1.95)
Lowest income quintile	0.181**	(3.17)	0.00602**	(2.98)
Second-lowest income quintile	0.133**	(2.6)	0.00435*	(2.47)
Second-highest income quintile	0.0597	(1.09)	0.00188	(1.05)
Highest income quintile	0.423***	(7.71)	0.0156***	(6.11)
1996 panel	–0.108**	(–2.94)	–0.00507***	(–4.68)
2001 panel	0.142***	(3.58)	0.00678***	(4.71)
Constant	–3.677***	(–61.21)		
Unweighted sample count[b]	226,282			
Mean	0.0395			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; t statistics in parentheses.

a. Change in predicted probability computed by generating the predicted probability of a change for each individual in the sample using all his or her actual characteristics except the variable of interest. The predicted probabilities are then averaged and compared to the actual probability in the sample.

b. Regression uses sample weights.

Although marital status is associated with likelihood of an income drop in the logit model, there are no significant correlations with marital status and income drops in the hazard models, perhaps because of the inclusion of measures capturing changes in family composition. The inclusion of these change variables likely also accounts for differences in the effects of family composition on income drops between the logit and hazard models. In the logits, individuals in one-adult families at the start of the observation year are less likely to experience an income drop than other individuals, while in the hazards, those in one-adult families are more likely to experience a drop. This change in the direction of the estimated impact may reflect the fact that those in one-adult families at the start of the observation period are far less likely to lose and more likely to gain an adult family member over the course of the year than those in multiple-adult families, and both these changes are associated with a decreased chance of an income drop. Once these changes are captured in the hazard model, we find that individuals in one-adult families are at greater risk of a substantial income drop than individuals in families with multiple adults.

As in the logit model, disability is associated with a heightened risk of an income drop. Income composition shows a stronger and more stable pattern of effects in these hazard models than in the logit models. The higher the proportion of an individual's family income coming from earnings, the lower the probability of an income drop in a given wave. For example, those with less than 25 percent of income from earnings are 1.1 percentage points more likely, those with 25 to 50 percent of income from earnings are 0.8 percentage points more likely, and those with 50 to 75 percent of income from earnings are 0.4 percentage points more likely to experience a drop in income than those with at least 75 percent of income from earnings.

We find the same previously reported U-shape pattern for initial income position and income drops. Those in the lowest and highest income quintiles are more likely to experience an income drop in a given wave than those in the middle income quintile. We also again find that the chances of an income drop are greater in the 2001 panel than in the 1996 and 2004 panels.

Factors Associated with Income Recovery

In addition to factors related to income drops, we assess the factors that improve an individual's chances of regaining lost income. As a first step, we estimate a regression that examines characteristics associated with recovery of income within a year to the pre-drop level for those who experienced a 50 percent drop in income. We call this a "full recovery." We then present results from a discrete time hazard model that assesses how changes in life events influence the probability of a full recovery from a substantial income drop.

Logit model—income recovery within a year of drop. Table 3 shows results from a logistic regression that pools data from the 1996, 2001, and 2004 SIPP panels.[19] The covariates are the same as those used to predict a drop in income except the variable indicating a spike in income only takes on a value of 1 if there is an observed doubling of income right before a substantial income drop.

As expected, those whose income dropped following a spike are far less likely to fully recover their income (that is, return to that same higher level) within a year than other individuals. The difference is 26.2 percentage points (about 15 percent of those whose income doubled before the drop get back to the pre-drop level in a year, while about 40 percent of income-doublers do not recover).

Several factors are statistically significant in predicting who will experience full recoveries among those with a 50 percent drop in income. Men are 2.7 percentage points more likely than women to fully recover

TABLE 3. Recovery from Income Drop in One Year, Pooled 1996, 2001, and 2004 SIPP Panels

	Coefficients	*T*-stats	Marginal effects of individual Xs[a]	*T*-stats
Income ever doubled before drop	–1.275***	(–10.95)	–0.262***	(–11.91)
Male	0.126***	(3.47)	0.0267***	(3.39)
25–34 years old	–0.0829	(–0.82)	–0.0190	(–0.92)
45–54 years old	0.113	(0.89)	0.0329	(1.23)
55–60 years old	–0.976*	(–2.26)	–0.178**	(–2.72)
Black	–0.357*	(–2.00)	–0.0683*	(–1.99)
Hispanic	–0.0435	(–0.30)	0.00166	(0.06)
Other nonwhite	–0.278	(–1.42)	–0.0491	(–1.26)
Less than high school education	–0.442**	(–2.62)	–0.0497	(–1.76)
High school education	–0.405**	(–3.10)	–0.0513*	(–2.50)
Some college, nongraduate	–0.315**	(–2.66)	–0.0304	(–1.58)
Divorced or separated	0.103	(0.57)	0.0239	(0.64)
Never married	–0.103	(–0.50)	–0.0242	(–0.60)
One adult in social family	0.248	(1.35)	0.0660	(1.62)
Three or more adults in social family	–0.356*	(–2.19)	–0.0802*	(–2.49)
Any disability (limits work)	–0.0360	(–0.22)	–0.00761	(–0.22)
Severe disability (prevents work)	–0.105	(–0.41)	–0.0288	(–0.66)
Earnings ≤ 25% of income	–0.0608	(–0.34)	–0.0128	(–0.34)
Earnings 25–50% of income	0.0369	(0.17)	0.00785	(0.17)
Earnings 50–75% of income	–0.485**	(–2.64)	–0.0983**	(–2.78)
Lowest income quintile	0.750***	(4.33)	0.163***	(4.34)
Second-lowest income quintile	0.186	(1.10)	0.0391	(1.08)
Second-highest income quintile	–0.0888	(–0.49)	–0.0181	(–0.50)
Highest income quintile	–0.480**	(–2.63)	–0.0923**	(–2.92)
1996 panel	0.207	(1.72)	0.0303	(1.30)
2001 panel	0.194	(1.55)	0.0273	(1.13)
Constant	–0.00984	(–0.06)		
Unweighted sample count[b]	3,727			
Mean	0.378			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; t statistics in parentheses.

a. Change in predicted probability computed by generating the predicted probability of a change for each individual in the sample using all his or her actual characteristics except for the variable of interest. The predicted probabilities are then averaged and compared to the actual probability in the sample.

b. Regression uses sample weights.

from a substantial income drop, while older workers (age 55–60) are 17.8 percentage points less likely to recover than prime-age workers (age 35–44). Whites are 6.8 percentage points more likely to recover than blacks, but there is no significant difference between whites and Hispanics. Education also matters; college graduates are more likely to recover than those with less schooling.

Marital status is uncorrelated with income recoveries, but individuals in families with three or more adults are less likely to recover from a substantial income drop than those in other families. We also find no significant correlation between disability status and the probability that an individual fully recovers from a substantial income loss within one year.

There is no clear pattern in the relationship between income composition and recovery, although those whose income comes primarily through earnings (more than 75 percent) are more likely to recover than

those for whom earnings represents 50 to 75 percent of their family income. Initial position in the income distribution is associated with the likelihood of recovery from substantial income drops. Individuals whose family incomes place them in the bottom income quintile are 16.3 percentages points more likely to recover from income losses than middle-income families (those in the third quintile). Those in the highest income quintile, however, are 9.2 percentage points less likely to recover from income drops than those in the third quintile. Finally, we find no significant difference in recovery rates between the three SIPP panels.

Hazard model—income recovery. We also estimate a hazard model to assess how changes in life events influence the probability of a full recovery from a substantial income drop. These models allow us to consider both changes in circumstances at the time of an income drop as well as changes in circumstances after the drop while an individual tries to recover. Our results appear in table 4. We begin by discussing how changes in employment, family composition, and disability status at the time of an income drop influence the chances of recovery. We next assess how changes in these factors that occur after the drop affect recoveries. Finally, we consider how an individual's demographic characteristics, income composition, and income position are related to income recoveries.

Changes in circumstances that occur *at the time of a substantial income drop* affect the likelihood of recovery—that is, the potential reason for an income drop influences the chances of recovery. Individuals in families that suffered a job loss at the time of the income drop are 2.3 percentage points less likely to fully recover in any given wave than those who did not lose a job at the time their income dropped by 50 percent. If an adult left the family at the time of an income drop, the chance of a recovery falls by 6.8 percentage points, but an adult joining the family at the time of the drop has no significant effect on recovery. Other changes at the time of an income drop that are not statistically significantly associated with recoveries include changes in the number of children and the onset of a disability of an adult family member.

Changes in family composition and in disability status *while income remains below its pre-drop levels* also influence recovery. Assessing the net effect of various changes requires considering multiple coefficients simultaneously. Consider, for example, how moving from a one-adult family at the time of an income drop to a two-adult family in the current period influences the chances for a recovery in that period and all subsequent periods. The net effect is computed by summing the coefficient for "one adult family at time of income drop" (0.934) with the coefficient for "adult added to family in current period" (0.300) and using the sum to calculate the expected change in the probability of a recovery at the sample mean; the net effect of moving from a one- to a two-adult family increases the chance of a recovery at the time the transition happens by 13.8 percentage points. If this individual does not recover at the time the second adult is added to the family, his or her chances of recovery in all subsequent waves (assuming no other changes) is 10.5 percentage points higher than it would have been had he or she remained in a single-adult family. Similarly, moving from a two-adult family to a three- or more-adult family increases the immediate probability of an income recovery by 10.5 percentage points and the longer-term chances of recovery (given one does not occur immediately) by 7.2 percentage points. Losing adults while trying to recover from an income loss reduces the chances of recovery roughly in proportion to the increase in recovery probabilities associated with adding adults. Changes in marital status have no measured effects on recovery beyond any associated changes in family composition.

One can use a similar approach to consider changes in disability status that occur while trying to recover from an income loss. Overall, changes in the presence of a severe disability influence recoveries, while

TABLE 4. Recovery from Income Drop, Hazard Model, Pooled 1996, 2001, and 2004 SIPP Panels

	Coefficients	*T*-stats	Marginal effects of individual Xs[a]	*T*-stats
Changes at income drop				
Employment				
Family lost a job	–0.227*	(–2.30)	–0.0229*	(–2.44)
Family lost a job involuntarily	0.0767	(0.55)	–0.011	(–1.03)
Family composition				
Adult added to family	0.343	(1.36)	0.0405	(1.22)
Adult left family	–0.848***	(–4.60)	–0.0683***	(–5.81)
Child added to family	0.114	(0.71)	0.0125	(0.69)
Child left family	–0.023	(–0.15)	–0.0024	(–0.15)
Health status				
Adult in family became disabled	–0.149	(–1.00)	–0.015	(–1.04)
Income				
Income doubled wave before drop	–1.208***	(–14.51)	–0.104***	(–11.32)
Changes in current circumstances				
Family composition				
One adult currently in family	–1.056***	(–7.78)	–0.0921***	(–8.50)
One adult in family at time of income drop	0.934***	(6.8)	0.104***	(4.9)
Three or more adults currently in family	0.640***	(5.14)	0.103***	(5.24)
Three or more adults in family at time of income drop	–0.537***	(–3.99)	–0.0361**	(–2.81)
Adult added to family in current period	0.300	(1.46)	0.0349	(1.33)
Adult left family in current period	0.133	(0.500)	0.0147	(0.48)
Child added to family in current period	0.103	(0.56)	0.0112	(0.54)
Child left family in current period	–0.419*	(–2.31)	–0.0387**	(–2.63)
Health status				
Any disability currently	–0.0807	(–0.59)	–0.0083	(–0.61)
Any disability at time of income drop	0.0207	(0.17)	0.0022	(0.17)
Severe disability currently	–0.493**	(–2.75)	–0.0501***	(–4.08)
Severe disability at time of income drop	0.455**	(2.65)	0.0575**	(2.6)
Adult in family became disabled in current period	0.130	(0.74)	0.0143	(0.7)
Log elapsed time	–0.552***	(–11.48)	–0.0631***	(–9.94)
Characteristics				
Male	0.0529*	(2.43)	0.00561*	(2.33)
25–34 years old	0.028	(0.43)	0.00425	(0.62)
45–54 years old	–0.0082	(–0.12)	–0.0006	(–0.09)
55–60 years old	–0.406*	(–2.32)	–0.0381**	(–2.74)
Black	–0.166	(–1.62)	–0.015	(–1.53)
Hispanic	–0.0638	(–0.75)	–0.0042	(–0.49)
Other nonwhite	–0.129	(–1.06)	–0.0104	(–0.87)
Less than high school education	–0.305**	(–3.01)	–0.0207*	(–2.52)
High school education	–0.200**	(–2.59)	–0.012	(–1.94)
Some college, nongraduate	–0.146*	(–2.14)	–0.0052	(–0.92)
Earnings ≤ 25% of income	–0.104	(–1.10)	–0.0107	(–1.13)
Earnings 25–50% of income	–0.139	(–1.06)	–0.0141	(–1.11)
Earnings 50–75% of income	–0.153	(–1.50)	–0.0155	(–1.57)

(continued)

TABLE 4. (continued)

	Coefficients	*T*-stats	Marginal effects of individual Xs[a]	*T*-stats
Divorced or separated currently	–0.318	(–1.53)	–0.0269	(–1.43)
Divorced or separated at time of income drop	0.216	(1.02)	0.0198	(0.84)
Never married currently	–0.554	(–1.64)	–0.0464	(–1.77)
Never married at time of income drop	0.524	(1.56)	0.0599	(1.33)
Lowest income quintile	0.564***	(5.93)	0.0670***	(5.05)
Second-lowest income quintile	0.106	(1.07)	0.0108	(1.03)
Second-highest income quintile	–0.0822	(–0.76)	–0.0079	(–0.78)
Highest income quintile	–0.248*	(–2.27)	–0.0224*	(–2.50)
1996 panel	0.121	(1.74)	0.0123	(1.8)
2001 panel	0.0192	(0.24)	–0.0031	(–0.43)
Constant	–1.235***	(–11.20)		
Unweighted sample count[b]	21,709			
Mean	0.128			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; t statistics in parentheses.

a. Change in predicted probability computed by generating the predicted probability of a change for each individual in the sample using all his or her actual characteristics except for the variable of interest. The predicted probabilities are then averaged and compared to the actual probability in the sample.

b. Regression uses sample weights.

changes in the presence of a standard work-limiting disability do not. Recovering from a severe disability is captured by taking the inverse of the coefficient measuring severe disability at time of income drop. The net effect is that those who fully recover from a severe disability are 5.8 percentage points more likely to recover from an income loss than those who continue to have a severe disability. The onset of a severe disability decreases the probability of recovery by 5.0 percentage points when computed at the sample mean.

Finally, changes in the number of children in the family are largely uncorrelated with recoveries from income drops with one exception: individuals in families that lost a child are 3.9 percentage points less likely to recover from an income loss in the wave that the child exited the family than are individuals in families that experienced no change in the number of children present.[20]

Hazard models also allow us to consider how time at risk for recovery influences the chance of recovery. We find that the longer it has been since a 50 percent drop in income, the less likely it is for that individual to fully recover.

The balance of the factors in the hazard model follows the pattern of findings in the logit model examining the probability of recovery within a year of the drop. Individuals whose drops follow large income spikes are much less likely to recover than those not experiencing income spikes, possibly reflecting that pre-drop income was unusually high.

There are few significant correlations between the chance of recovery and demographic factors such as sex, age, and race. As in the logit models, men are more likely to recover from substantial income losses than women, and older workers (age 55–60) are less likely to recover than those between the ages of 35 and 44. In the hazard model, we find no significant correlations by race.

As in the logits, the hazard model results indicate that those with less education are less likely to recover than those with more education. Those with less than high school educations are 2.1 percentage points less likely, high school graduates are 1.2 percentage points less likely, and those with some college are 0.5 percentage points less likely to recover than those with college educations. Earnings as a share of income at the time of the income drop is not significantly related to the chance of recovery. As in the logits, income position is associated with recoveries. Individuals in the lowest income quintile before sustaining a drop are more likely to recover than those in higher quintiles, and those starting in the highest quintile are the least likely to recover. Finally, there are no differences in likelihood of recovery across the three SIPP panels.

Caveats and Limitations

In using survey data, we must acknowledge that some observed changes in income are the result of errors in reporting income over time. Although we smooth out one-month income drops to limit this problem, some of the remaining income changes we observe in the data are still likely the result of reporting errors. One source of such errors may be a change in the survey respondent or the use of a proxy respondent across waves (e.g., a husband responds in wave 1, the wife in wave 2, and the husband again in wave 3). To assess the potential extent of this problem, we repeated our analyses splitting the sample between individuals who reported their own income and those whose incomes were reported by a proxy respondent. We find very little difference in the incidence of reported income drops across these two groups. In fact, data collected from proxy respondents show slightly fewer substantial income drops than data collected directly. Similarly, recoveries occur at about the same rate regardless of respondent.

Another source of reporting error is misreporting of income. The relatively short recall window in the SIPP (four months) is intended to reduce errors in reporting of income. However, it is still possible that individuals do not accurately recall income, and this could lead to erroneous measures of income drops and recovery, if, for example, a respondent fails to report one source of income in a wave but correctly reports it in the surrounding waves. The possibility of greater reporting error for specific types of income (for example, for transfers versus earnings) could have implications for the measured prevalence of income drops across income quintiles. However, we do not have a priori expectations for differential reporting error by income source.

Another issue related to the use of SIPP data is attrition bias. To observe income drops and recoveries over the following year, we need at least 16 months (four waves) of data on individuals in our sample. Every wave, however, some respondents drop out of the SIPP panel. Those experiencing income drops and the associated dislocations that cause or come along with these drops may be disproportionately likely to leave the SIPP panel. As such, we may understate the incidence of income drops and overstate recoveries.

Finally, our analysis focuses on family income regardless of needs. Changes in family structure likely have a larger impact on income than income adjusted for family size. For example, when a couple divorces, the wife's family income may fall by 60 percent (as her husband's income is no longer available to her) but her income adjusted for needs may fall by only 45 percent because there is one less adult in the family. As such we may overstate the practical severity of income drops.

Discussion

Our analysis demonstrates that adults living in families with children are susceptible to substantial declines in their monthly incomes. Over 13 percent experience a drop in income of 50 percent or more over the

course of a year. For some, this loss of income is short-lived, but for three in five families with these losses, income fails to recover to its prior level within a year. More than one in five families experiencing a substantial loss continue to have incomes that fall below half their previous levels for over a year.

The incidence of income losses throughout the income distribution is U-shaped, with the poorest and richest families more likely to experience losses than middle-income families. In contrast, recoveries from substantial losses are more common among lower-income than higher-income families. These results hold after taking into account other individual and family characteristics in a discrete time hazard estimation framework, even after controlling for spikes in income (doubling of income in the prior period). As expected, substantial income drops are much more likely and full recovery from those drops are much less likely for those who experienced income spikes before the drop, perhaps signaling that the income spike was an aberration and post-drop income is a return to the norm.

We find some evidence to suggest that large declines in income were more common in 2001 than in 1996 and 2004. However, we find little difference in the subsequent chance of recovery after a large income drop for these different years.

One goal of our analysis is to identify life events that are associated with large income drops and to see how hard it is to recover from such events. Table 5 synthesizes our findings from our hazard models on income drops and recoveries, focusing on life changes that precede drops. A job loss, particularly an involuntary job loss, significantly increases the chance of an income drop, and given that a job loss preceded an income drop, the chance of fully recovering from the drop is also significantly diminished. Similarly, individuals in two-adult families that become one-adult families are significantly more likely to sustain an income drop than other individuals, and the duration of that drop will be longer than drops that are not associated with this type of family transition. Finally, the onset of a disability increases the chances of a substantial income drop. If that disability is severe and sustained, it reduces the chances of recovery; however, if the disability is resolved, the fact that disability onset occurred at the time of the income drop has no bearing on recovery. tab 5

Changes that occur following an income drop also influence recoveries. For example, adding adults to a one- or two-adult family increases the likelihood of recovery, as does recovering from a work-preventing disability.

TABLE 5. Synthesis of Findings on Life Events Preceding Income Drops

Changes at time of potential income drop	Effect on probability of income drop	Effect on recovery, given drop occurred
Job loss	+	—
Involuntary job loss	+	•
An adult leaves a two-adult family	+	—
Onset of a disability	+	•
(disability *remains* severe)	NA	—

Source: Summary of key findings from hazard models (tables 2 and 4).

+ significant positive correlation

— significant negative correlation

• no significant correlation

NA not applicable

In addition to life events, we consider individual characteristics associated with substantial income drops as well as recoveries from such drops. Some groups of individuals are more likely to experience large drops in income. These include women, Hispanics, and those with less than high school educations. Women and those with less than high school educations are also substantially less likely to recover from a substantial income drop.

A next step to this work documenting the frequency of income drops and recoveries and the factors that influence them is assessing what such income drops imply for the well-being of families with children.[21] If families can draw on savings or credit to maintain their consumption levels in the short term, then an income loss that is recovered quickly may be of little consequence. On the other hand, if families do not have this ability to smooth consumption and the loss is a substantial part of annual earnings, even short-term substantial income losses can have an impact on well-being. In addition, if short-term losses are associated with elevated stress, reduce the ability to plan ahead, and create disruptions in family routines, in addition to the loss of resources, then even quick recoveries will not offset the damage caused by sudden, substantial declines in income.

TABLE A1. Sample Characteristics (Wave 1, percent)

	1996	2001	2004
Age			
25–34 years old	37.43	32.87	33.39
35–44 years old	46.48	46.90	45.03
45–54 years old	15.18	18.99	20.07
55–60 years old	0.91	1.24	1.52
Race/Ethnicity			
White	72.96	70.01	66.49
Black	10.44	10.56	10.38
Hispanic	11.94	13.91	16.82
Education			
Less than high school education	12.45	11.81	12.37
High school education	30.73	28.36	22.54
Some college, nongraduate	31.63	30.43	36.53
College plus	25.20	29.40	28.57
Family structure			
Married	83.53	82.78	82.16
Divorced or separated	11.34	10.81	10.75
Never married	5.13	6.41	7.08
One adult in social family	9.76	10.03	9.58
Two adults in social family	74.04	72.15	72.56
Three or more adults in social family	16.07	17.70	17.73
Health			
No private health insurance	20.53	19.43	22.93
Disabled at baseline	7.40	6.81	6.49
Not disabled	92.60	93.19	93.51
No earnings	5.76	4.38	5.33
Earnings			
Family earnings 0–50% of family income at baseline	6.70	6.29	6.51
Family earnings 50–75% of family income at baseline	8.52	9.27	9.06
Family earnings 75–100% of family income at baseline	78.92	79.95	78.98

Note: Data are weighted.

NOTES

1. See, for example, Bania and Leete (2007); Batchelder (2003); Dynan, Elmendorf, and Sichel (2008); Gosselin (2008); Gosselin and Zimmerman (2007); and Hacker (2006).
2. The work of Burkhauser and Duncan (1989) and Gosselin and Zimmerman (2007) are not strictly comparable because, simplifying, the unit of analysis for Burkhauser and Duncan is the person over a decade while for Gosselin and Zimmerman, it is a person-year. As such, Gosselin and Zimmerman's reports of income drops in any given year are lower than Burkhauser and Duncan's reports of drops over a 10-year period.
3. More specifically, we include individuals at least 25 years old and less than 58 years old in wave 1, month 1, of the panel, so the sample is age 25–61 in the 1996 and 2004 SIPP panels and 25–60 in the 2001 panel (which ran for 36 months).
4. In sensitivity analyses, we include all cases regardless of income imputation and find substantially higher incidences of income drops when income is entirely imputed. As such, we cannot be certain if we observe an actual drop or if the drop is merely the result of imputation. When we compare the incidence of income drops in samples with stricter imputation restrictions (no more than 95 percent imputed versus no more than 50 percent imputed, and so on), we find that that incidence of drops declines as imputation declines along a gentle gradient. Imposing the requirement that no income be imputed, however, causes substantial loss of sample and likely leads to a biased sample, as cases that fully report their income are likely to have more stable incomes than cases that require some imputation. As such, we choose to trim the data by eliminating cases with full income imputation rather than eliminate all cases with any imputed income data.
5. Weights are adjusted for the sample restrictions using a logistic model similar to that customarily used to model nonresponse; probabilities of inclusion p conditional on all covariates in wave 1 are predicted using a logit model, and those who are to be included in subsequent analysis have weights inflated by $1/(1 - p)$.
6. Our sample is representative of roughly 90 percent of adults in a parental role (living with one's own children, or with the children of someone with whom one is romantically involved), excluding grandparents caring for grandchildren without the middle generation in the household and those families living in households where they are unrelated to the household head (so relationships become hard to determine).

7. The unmarried partners of adults who are not household reference persons are not included in the social family. For most individuals, our definition of social family income and SIPP family income are identical, and the correlation of the two variables is high (over 97 percent).
8. An additional advantage of using wavely income is that the intra-month timing of income is less likely to be a major source of variation. Given that many households receive a large proportion of their income in the form of biweekly disbursements from an employer, a household will frequently receive three paychecks one month and two the next, which greatly increases the likelihood of an apparent one-month drop in income—for example, the incidence of one-month 25 percent income drops in February is 30 percent higher than in March. For households with self-employed or contingent workers, the timing of income is likely to be an even larger issue. A four-month period represents a happy medium balancing competing objectives of smoothing income data somewhat and measuring subannual income changes.
9. Disability is defined here as a self-report that the individual has a emotional, physical, or mental impairment or condition that limits his or her ability to work. We also control for "severe disability," which is a subset of disability that indicates those who report their impairment or condition prevents them from working.
10. We parameterize the baseline hazard by including the log of waves elapsed since wave 2. Models including wave indicators (time dummies), or models using complementary log-log regression, produce very similar results.
11. The discrete time hazard model allows individuals who exit the data before experiencing a "transition" (an income drop or a recovery, depending on the model) to contribute to the likelihood up the point when they are last observed. Since all that is known about these individuals is that they have not experienced a transition by the time they are last observed, they are said to be "right censored" (duration to transition is at least as great as observed duration). Since individuals who leave the panel early are not observed as long, they are merely censored at higher rates than other individuals, and attrition from the panel is less likely to be an issue in a discrete time hazard model than in any other type of regression. For this reason, no adjustment to weights is made for early attrition from the panel.
12. Data for the 1996, 2001, and 2004 SIPP panels are pooled here. For a breakdown by panel, see Acs, Nichols, and Loprest (2009).
13. The frequency of total losses (100 percent income drop, not shown) is very low; only about 1 percent experience a drop to zero income.
14. Some individuals achieve a partial recovery, with incomes well above their post-drop levels but still below their pre-drop levels. Overall, 59.0 percent of individuals return to at least 70 percent of their pre-drop income within a year (Acs et al. 2009).
15. Specifically, income two waves before the drop is at least 70 percent of income immediately before the drop.
16. Specifically, income two waves before the drop is between 50 and 70 percent of income immediately before the drop. For a more detailed analysis of income spikes before drops, see Acs and colleagues (2009).
17. We translate logit coefficients to percentage point magnitudes by generating the predicted probability of an income drop for each individual in the sample using all his or her actual characteristics except the variable of interest (and any logically connected variables). The predicted probabilities given two levels of the variable of interest are differenced and then averaged across the sample to estimate the mean effect of the variable on the probability scale. This same procedure is used to interpret individual variable estimates in the hazard model for income drops and for the models considering recoveries. In the hazard models, certain effects can only be ascertained by combining multiple variables. When discussing effects that involve multiple variables, we evaluate the effect at the sample means using the formula:

    $\Delta P = \Sigma b_i \Delta X i * P(1 - P)$, where i indicates all the variables required to assess a particular effect.
18. Alternatively, this could signal greater volatility of other income sources or greater misreporting for those with less income from earnings.
19. The results from the single-year regressions are not statistically significantly different from those in the pooled model.
20. This may not be a problem if income dropped because adult household member reduced their work effort in anticipation of not having to pay for the child's expenses going forward. Alternatively, the prospects of a long and sustained diminution of family income may lead the family to send children to live elsewhere.
21. Research on how parental job loss and attendant income losses influence children suggests that father's job loss is associated with poorer academic and behavioral outcomes for children (Kalil and Ziol-Guest 2008), for example, which may have long-term consequences (Oreopolous, Page, and Stevens 2005).

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