



Has There Been a Great Risk Shift?

Trends in Economic Instability among Working-Age Adults

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Chapter 1 **Introduction**

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Increasingly, economic insecurity is a major concern of Americans once thought to be beyond its cold reach: middle-class professionals who have gone to college, or even beyond, but who suddenly find that their education and skills are no longer a guaranteed safety net.

– Jacob S. Hacker, "The Rise of the Office-Park Populist"¹

By framing what usually are treated as distinct issues – pensions, health care, jobs and so forth – within a unified thesis, Mr. Hacker tells a coherent story about economic insecurity. And, by and large, the thesis is compelling. – Roger Lowenstein, "The Economic Miracle as an Economic Mirage"²

When all is said and done, the recession that began in late 2007 will almost surely be regarded as the worst since the Great Depression. In March of 2009, unemployment rose to 8.5 percent, a level not seen in over two decades. The net worth of Americans declined by 18 percent in 2008 alone. The last years of the 21st century's first decade have understandably featured a vigorous debate about economic security, risk, and the American social contract.

Even before the financial crisis began, the "jobless recovery" wedged between the bursting of the tech-stock bubble and the housing bubble had inspired a wave of commentary arguing that the economy had become fundamentally more risky for American families. In some ways, this sense of alarm was an extension of earlier waves of insecurity inspired by stagflation in the 1970s, deindustrialization and Japanese competition in the 1980s, and the "white-collar recession" and downsizing of the early 1990s. But the "new economic insecurity" was typically said to be, in a word, new.³

As depicted by such writers and researchers as Jacob Hacker, Elizabeth Warren, Peter Gosselin, and others, the United States has recently entered a period characterized by rising economic risk, increased economic volatility, cost-shifting from employers and government to individuals and families, and inescapable pressures to spend time at work rather than with family, to live in the best neighborhoods with the best schools.

Among these social critics, none is more closely identified with the claim of a fundamentally riskier economy than Hacker, and Hacker's primary evidence for this claim has been his own finding that income volatility has risen dramatically since the early 1990s. This thesis examines that claim and the broader question of how economic instability and volatility have evolved since the late 1960s. Mine is not the first attempt to do so, but it improves upon the extensive previous literature by comprehensively assessing a range of measures and paying meticulous attention to a number of key data and measurement issues.

Ultimately, concern about economic instability is bound up in anxiety about economic risk. Before delving into the details of economic instability measurement, it is useful to first discuss the various sources of economic risk and the available ways in which individuals insure themselves against risk. The extent and effectiveness of insurance is one consideration in interpreting levels of and trends in economic instability. Others include the extent to which income movements are anticipated or come as a surprise, the importance of levels of economic well-being rather than departures from these levels, and the trade-off between insuring risk and creating moral hazard.

Sources of Economic Instability and Risk⁴

While it is natural to think of features of labor markets as the primary force behind economic instability, the qualities that individuals carry with them upon entering the labor force may be equally or even more important. Indeed, in many respects, they are opposite sides of the same coin. If labor markets change in such a way that less-educated workers experience an increase in volatility, should we attribute the increase to market institutions or to inadequate educational attainment? People who emphasize personal responsibility and individualism will tend to fix blame on workers and their choices. Those who regard laissez-faire arguments suspiciously will point to labor markets, employers, and lax regulation. Regardless, in a society as individualistic as the United States, disadvantageous family background, genetic endowments, and pre-labor-market personal qualities are undoubtedly important sources of economic risk.

Once in the labor force, risk from labor and consumer markets is a fact of life. At the interpersonal level, risk is inherent in the dependence of most workers on their coworkers and managers or on cooperation from customers. Some labor and consumer market risk resides at the occupational or firm level, affecting workers with similar roles in the economy regardless of employer or all employees within a firm regardless of their position. Other risk may be located at the level of industry or within specific geographic areas defined by political boundaries (cities) or ecological features (areas with cold winters). And some economic risk originates in and affects the entire global economy.

Similarly, economic risk also inheres in financial and real estate markets, as the current crisis has clearly illustrated. Investors and lenders confront risk directly in the form of delinquency and default, fluctuating asset prices, and the costs of decisions made

or not made. With high home ownership and the explosion of defined contribution retirement accounts, more and more people are directly involved in capital markets. Many others are exposed to risk indirectly via the ability or inability of capital markets to promote access to credit, liquidity, and economic growth.

The possibility of health problems is another source of economic risk. Indeed, serious illness or injury may inhibit work, thereby reducing income, even as it increases medical costs. Health problems may also force workers to retire earlier than planned even as they increase the likelihood that those same workers will have inadequate resources to cover their expenses in retirement. On the other hand, the absence of health problems upon retiring presents the risk that retirees will outlive their private savings and be forced to downgrade living standards.

Finally, changes in family composition also present economic risks. Forming a household independent of parents exposes young adults to new economic risks by narrowing the extent of income pooling and removing economies of scale. Divorce (or dissolution of other romantic relationships) has similar effects. Adding children or elderly parents to a household will tend to raise expenses more than it increases income.

Insurance against Economic Risk

The importance of economic risk as a policy issue depends on a number of considerations. One of the most central is the question of how much insurance there is against risk. First and foremost, individuals insure against risk in the choices they make that affect how they fare in the labor market. These choices include those related to their educational attainment and human capital investment; selection of occupation, industry,

and firm; how many hours to devote to working; how much effort to put into work; and the amount of residential mobility and flexibility to accept.

Of course, what one person sees as individual "choice" looks to another like the inescapable product of opportunities or a lack thereof. Parents, for example, certainly insure against economic risks their children will face by investing time and money in their children's development. Similarly, transfers within one's family also provide insurance against risk, whether they take the form of financial help in rough times or the provision of free housing to post-collegiate children.

Markets also offer a number of ways to insure against economic risk. Private insurance exists to mitigate the effects of disability, death of a family member, catastrophic health problems or injuries, and loss of property, to name just a few examples. Financial and capital markets provide access to unsecured and secured credit and create opportunities for precautionary saving and wealth-building. Individual choices, including the extent of portfolio diversification and how aggressively to seek returns, interact with the opportunities that markets provide.

Other sources of insurance are matters of political economy—of the institutions, policies, and laws that societies establish to mediate when economic risks are realized. These include regulation of labor markets and private insurance and other financial and capital markets, provision of public insurance programs such as unemployment insurance, public investments in workers and children, progressive taxation, and bankruptcy, debtor, and family law.

A final important way that people can insure themselves against economic risk is to pool resources with a spouse or romantic partner. Such an arrangement can reduce risk

in two ways. First, if two or more people can achieve an adequate standard of living without all of them fully employed, then there is reserve labor that can fill in should one person run into problems. Second, when all potential workers are fully employed, in so far as their risks of economic difficulty are not perfectly correlated, then on average they will be less likely to face difficulties than if they were not pooling resources.

Anticipated versus Unanticipated Instability

Not all economic volatility is unanticipated. Younger adults may leave the workforce to return to school, relying on grants, loans, and savings to keep them afloat. Older adults may cease working and enter into retirement or scale back to part-time employment as they transition to retirement. Other workers may reduce their consumption and increase their savings in anticipation of leaving their job (or their spouse) or having a child. Gains in discretionary income can also be anticipated, as when a person enters or re-enters the workforce, moves in with a romantic partner, or sends an adult child out into the world.

Indeed, one can anticipate some degree of volatility far into the future in thinking about the trade-offs involved in human capital decisions. Flavio Cunha, James Heckman, and Salvador Navarro, for instance, have estimated that 60 percent of the lifetime variability in the returns to a college degree is forecastable from the information individuals have at the time they decide whether to attend or not.⁵ Kjetil Storesletten, Chris I. Telmer, and Amir Yaron found that idiosyncratic labor income risk is strongly countercyclical, which adds empirical support to the intuition that people can observe cyclical changes in economic risk and take action to insure themselves.⁶

Level of Economic Well-Being versus Economic Instability

Consider facing one of two situations. In either situation you will make \$40,000 this year but only \$30,000 next year. In the first scenario, you are partnered with someone who cannot work in either year, perhaps due to child care responsibilities, so the two of you experience a drop in income of 25 percent and end up with \$30,000. In the second scenario, your partner earns \$100,000 this year but only \$50,000 next year. The drop in this scenario is \$60,000 – six times that in the first scenario—and the percent change is nearly 45 percent instead of 25 percent. Yet you are left with \$80,000. Which scenario would you prefer—less of a drop in percentage terms but lower income, or a larger drop and higher income?

The choice depends heavily on two considerations. The first relates to economists' idea of "utility"—how much worse off would one feel without that \$60,000 versus the \$10,000 one would lose in the first scenario? On the one hand, the difference between \$140,000 and \$80,000 may be less painful than the difference between \$40,000 and \$30,000—perhaps because \$80,000 is adequate for basic needs while \$30,000 is not.

On the other hand, if people generally assume that they need not worry about an income drop, then they may make financial commitments that are difficult to extricate themselves from. With \$140,000 in income, a couple might have a correspondingly larger mortgage payment or may pay for private school for their children. While \$80,000 is a substantial amount of money compared with \$30,000, it may not be enough for the couple to continue their lives without considerable disruption.

This is bound up in a second consideration—the extent and liquidity of saving that people engage in. On the one hand, with \$140,000 rather than \$40,000, a couple might be able to increase their saving rate, since basic needs are likely to be met with room to spare. In that case, they might be able to fully insure against a \$60,000 drop more easily than they would a \$10,000-loss from a base of \$40,000. On the other hand, if their savings rate would be similar in either scenario, then they may be equally unprepared in both.

The point is that there may be contexts in which levels of economic well being are more important than economic stability. In that case, individuals will be willing to trade off higher instability for higher incomes.

Moral Hazard

In a market economy, the financial fortunes of workers and families will tend to rise and fall for reasons partly—even largely—out of their control. Even sources of risk that are ostensibly matters of personal responsibility—educational attainment, say, or decisions around family formation—are often the result of cumulative youthful choices the short-sightedness of which is evident only in retrospect.

Increasingly, liberal observers have connected the idea of opportunity to security against economic risk. If people have little in the way of a safety net in the event of failure, it is said, they will be unwilling to take risks that might improve their own economic standing and those of others.⁷ But protecting citizens from market risk creates other societal risks. In work with Christopher Jencks, I found that the federal and state welfare reforms of the 1990s—combined with other social policy reforms that promoted

work—were largely responsible for the gains single mothers made during the economic expansion later in the decade.⁸ Prior to welfare reform, Aid to Dependent Families with Children (AFDC) had sheltered single mothers and their children against market risk during recessions more effectively than it does today. But during expansions, it acted as a poverty trap by discouraging many recipients from taking advantage of tight labor markets.

In general, state-sponsored protection from market risk will often entail some degree of moral hazard. Shielding individuals fully from the consequences of their actions will encourage them to take action without regard to those consequences. Sometimes that will yield benefits. For instance Daron Acemoglu and Robert Shimer found that unemployment insurance increases unemployment but also increases productivity by encouraging workers to seek high-productivity jobs and encouraging employers to provide them.⁹ But public risk protection can also do more harm than good. Indeed, it might be the case that poorly-designed safety nets can encourage behavior that may be economically benign for most individuals but that might have negative effects in the aggregate by redirecting effort and investment in inefficient ways. Alternatively, public efforts to mitigate risk can simply not work, as would be the case if public insurance simply crowds out private insurance.

The discussion to this point shows that some kinds of economic instability are worse than others. Indeed, in some cases economic instability may have benefits—or economic stability may have costs—that make it undesirable to reduce levels of risk.¹⁰ Correctly measuring levels of and trends in economic instability does not tell us everything we need to know about whether risk levels are too high or too low. But as

will be seen, correctly measuring economic instability is anything but straightforward in real-world data sets.

Measuring Economic Instability

At a basic level, this thesis is concerned with trends in income movements. Changes in income can produce steady or discrete movement in one direction, up or down, or it can involve a path that bounces around in both directions. These distinct concepts can be thought of as "mobility" and "volatility", respectively. A worker whose income bounced around randomly from year to year would experience significant volatility, but comparing two years might not reveal much mobility. On the other hand, most workers might be progressing upward or downward along steady trajectories, in which case there would be little volatility but significant mobility.¹¹

Nearly all measures of income change examined to date can be grouped into those looking at (1) how often people experience sudden sizable shifts in where they stand relative to others, (2) how often workers experience sudden large income gains or losses, (3) the extent to which income differences at one point in time are associated with differences at a later point in time, (4) the full distribution of sudden gains and losses, (5) the distribution of the typical individual's income within a short window of time, and (6) the range of income shocks across individuals.

The first three of these types of measures have been most common in mobility research. There is a vast and long-standing research literature on economic mobility, most of it focused on intergenerational mobility, but some of it examining mobility within individuals' lifetimes. The research on intra-generational mobility includes studies

looking at mobility over periods of ten years or more as well as work focused on shorter time spans. The wider the time interval within which mobility is examined, the more mobility studies reflect career and aging dynamics rather than short-term income fluctuations.

This thesis examines mobility over time spans of no more than five years, which I refer to as "short-term mobility". Research on short-term mobility can be divided into studies examining relative mobility (movements in the position, or rank, occupied in the income distribution relative to others), those examining absolute mobility (income movements up or down without reference to relative positions), and those examining mobility as time independence (lack of association of incomes over time).¹²

Measures of absolute mobility do not consider individuals' positions in the earnings distribution; they consider any decline or increase in earnings as a change in mobility, regardless of how others are doing. Relative mobility can remain stable while absolute mobility increases or decreases if everyone experiences the same change in earnings.

Measures of mobility summarize either directional or nondirectional movement. That is, they can summarize the amount of either downward or upward mobility, or they can summarize the amount of mobility regardless of direction. A primary strength of directional measures of relative and absolute mobility lies precisely in their ability to distinguish between upward and downward movements. Measures of nondirectional mobility and most measures of volatility do not convey clear information about whether income declines outnumber or dominate income increases. This shortcoming makes it is

difficult to interpret trends in such measures, since increases may reflect a general rise in living standards or growing inequality rather than increased risk.

A priori, one might expect directional relative and absolute mobility trends to follow similar but not identical paths. During recessionary periods, a relatively large number of people will tend to experience downward movement in income measured in absolute terms, and upward movement will be more common during expansionary periods. However, relative mobility should tend to be less cyclical, since ranks need not change much when many people are moving up or down. For example, the fraction of the population changing income quintiles between two years should be less sensitive to business cycles than the fraction with a change in income of 25 percent or more.

Nondirectional measures of relative and absolute mobility may show even less cyclicity than directional measures of relative mobility. That would be the case if total mobility—upward or downward—remained roughly constant over the business cycle according to some measure, with increases in downward mobility during recessions completely balanced out by increases in upward mobility during expansions.

The same would be true for measures of intertemporal income association, which are also nondirectional mobility measures. While many researchers classify all of these measures of association, such as regression coefficients using logged earnings and autocorrelations, as indicators of relative mobility, this is not strictly true. A Pearson correlation coefficient, for instance, can be less than 1.0 even if no one's ranking changes, and it can change over time without ranks changing. Absolute mobility is necessary for the correlation coefficient to indicate mobility, but it is not sufficient. Relative mobility is sufficient for the correlation coefficient to indicate mobility, but it is not necessary.¹³

Absolute mobility measures that examine the likelihood of experiencing a change in income of a given size look at only part of the distribution of income changes. A fourth line of research on economic instability involves summarizing the dispersion of the entire distribution of income changes. Greater dispersion of changes, in this approach, constitutes greater mobility, since it implies that relatively large income changes are becoming more common and relatively small income changes less common. If one measures absolute mobility as the mean across individuals of the squared change in income between two years, there is a clear link to the variance of income changes, which is the mean across individuals of the squared change in income after centering (or de-meaning) incomes.

A downside of this approach is that the dispersion of income changes can grow simply if income gains become bigger or more common or if inequality is increasing. Not only that, but it fails to differentiate between a scenario in which the typical person is facing bigger income changes over time and one in which the typical income change stays the same over time but changes increase for those who experience the largest changes.

The fifth type of income-change measure most closely corresponds with the idea of volatility. It measures within-person income dispersion over several years. Such measures have the benefit of showing greater volatility when individuals' incomes fluctuate over several years, rather than when individuals simply experience a single large decline or increase. On the other hand, within-person income dispersion will also increase if incomes are moving steadily in one direction or another rather than bouncing around. If one measures within-person dispersion as the variance of a person's income

over two years, the mean dispersion across individuals equals one-fourth the mean squared income change across individuals. Using a larger number of years to measure within-person dispersion adds information about income volatility, since there is likely to be more fluctuation across several years than across two.

The final type of measure comes from a distinct line of research modeling earnings dynamics formally and produces parametric estimates of the dispersion of income shocks. In these studies, earnings are separated into permanent and transitory components, sometimes defined conditional on observable demographic characteristics. Shocks to earnings operate either through the transitory component (in which case they are generally modeled as white noise, sometimes persisting to affect subsequent years) or, less often, the permanent component (in which case they are modeled as depending on past permanent shocks). Volatility is equated with the dispersion of these shocks. Typically, a model is specified that implies restrictions on earnings variances and within-person covariances (or the variances and covariances of earnings *changes*). Minimum-distance methods are then used to choose the model parameter values that produce an earnings covariance matrix that most closely resembles the actual covariance matrix.

By distinguishing permanent and transitory components, these studies do a better job analytically of addressing the difference between mobility and volatility than other measures. But of course, all models are simplifications, and if they do not describe reality well enough, then the estimates of volatility they produce may be biased.

In fact, the simplest models used effectively rule out enduring mobility, modeling earnings as consisting of a never-changing permanent component and a sequence of discrete random shocks, the effects of which disappear with the next shock. Most models

impose the same baseline income profile on all individuals within particular demographic groups, ruling out any initial income variation based on ability, preferences for leisure, or time horizons that are not absorbed in observable covariates. Only a few allow parameters to interact with age, so that the level and dispersion of shocks can change over the life course. None allow the distribution of shocks to vary with the business cycle or include aggregate shocks corresponding with cyclical macroeconomic patterns or industry-specific trends.

Developing models of earnings and income dynamics is an important and necessary endeavor for answering many micro- and macroeconomic questions. Ultimately, they are probably indispensable for interpreting what to make of trends in income movements. However, for purposes of describing such trends, estimates based on these models abstract from the income changes that real individuals experience. Relying on them for description is akin to describing trends in income using income predicted from a regression model rather than self-reported income.

In the chapters to follow, I compute trend estimates using each of these six conceptualizations of economic instability, but I focus on two measures in particular. First, I emphasize the risk of experiencing an absolute drop in income (of 25 percent), or downward absolute mobility. The research on economic instability has tended to obscure the fact that what constitutes a risk to individuals is not volatility per se, but downward income movements. Indeed, for a given level of downward mobility, volatility is beneficial—it implies recovery from income drops. I focus on absolute mobility rather than relative mobility because what is disruptive to people in the short-run is not how one's rank changes, but how one's level of resources changes. Over longer periods, or

across generations, there may be contexts in which relative mobility is as important as absolute mobility or more so.

The second measure I emphasize is a new indicator I call "pivot volatility". This measure is similar to conventional measures of within-person dispersion in beginning with income movements within a short-term window experienced by individuals. The experience of the typical person is then summarized. Where it differs from measures of within-person dispersion is that it explicitly determines the frequency and magnitude of income *reversals* within a person's window. Volatility occurs when reversals involve large movements (up and then down, or vice versa) and when there are multiple reversals. Pivot volatility addresses the shortcoming shared by the volatility measures used to date: their failure to distinguish between income growth and inequality on the one hand and true volatility or instability on the other.

Organization of the Thesis

In Chapter Two I examine trends in individual earnings instability. There is a vast literature related to this topic, some of it in the tradition of mobility research, some conducted by labor economists primarily interested in modeling earnings dynamics, and some of it pursued in the course of developing macroeconomic models of the U.S. economy. I bring these literatures together for the first time and attempt to synthesize the existing research, considering trends for men and women separately. I then produce my own estimates that try to improve on earlier research through more careful methodological decisions and summarize how trends using different measures compare with each other.

Chapter Three pursues an analogous aim, this time focusing on trends in household income instability. This literature is smaller and dominated by a few recent studies that have gained prominent attention. I compare my estimates to previous research on earnings and income instability and to analogous trends in earnings instability.

In Chapter Four I restrict the analyses to downward absolute mobility and examine trends by demographic group. Specifically, I consider how levels and trends differ depending on family composition changes, age, educational attainment, and race.

Finally, the concluding chapter presents trends in other indicators of economic risk and insecurity, discusses the politics of economic instability and insecurity, and provides policy options for addressing economic risk. I propose a menu of "citizen benefits" to supplement and replace the current system that delivers benefits via employers. The proposal is voluntary, relatively low-cost, and designed to address a number of problems related to economic instability in a politically effective manner. It is offered as an alternative to more ambitious agendas that in my view mis-read the evidence on both economic instability trends and public opinion related to economic insecurity.

Above all, my citizen benefits agenda is offered in the belief that one can believe a problem merits public attention and a commitment of public resources without having to believe it is getting worse, and that national problems can be addressed in ways that take serious the complexity of public opinion and the virtues of markets. Above all, my analyses and my proposal try to respect the most important principle of social scientific practice: that facts matter for successfully remedying social problems.

Bibliography

- Acemoglu, Daron and Robert Shimer. 2000. "Productivity Gains from Unemployment Insurance." *European Economic Review* 44(7).
- Brown, Clair, John Haltiwanger, and Julia Lane. 2006. *Economic Turbulence: Is a Volatile Economy Good for America?* (Chicago: University of Chicago Press).
- Cunha, Flavio, James Heckman, and Salvador Navarro. 2005. "Separating Uncertainty from Heterogeneity in Life Cycle Earnings." *Oxford Economic Papers* 57.
- Fields, Gary S. 2004. "Economic and Social Mobility Really Are Multifaceted." Unpublished paper.
- Fields, Gary S., Jesse B. Leary, and Efe A. Ok. 2000. "Dollars and Deciles: Changing Earnings Mobility in the United States, 1970-1995." Unpublished paper.
- Fields, Gary S. and Efe A. Ok. 1999. "The Measurement of Income Mobility." In J. Silber, ed., *Handbook of Income Distribution Measurement* (Boston: Kluwer).
- Gosselin, Peter. 2008. *High Wire: The Precarious Financial Lives of American Families* (New York: Basic Books).
- Hacker, Jacob S. 2008. *The Great Risk Shift, Revised and Expanded Edition* (New York: Oxford University Press).
- _____. 2006. "The Rise of the Office-Park Populist." *New York Times Magazine*, December 24, 2006, p. 24.
- Hacker, Jacob S. and Ruy Teixeira. 2006. "It Wasn't Just Iraq." *The American Prospect*. December. 17(12). Available at http://www.prospect.org/cs/articles?article=it_wasnt_just_iraq.
- Heathcote, Jonathan, Kjetil Storesletten, and Gianluca L. Violante. 2008. "Quantitative Macroeconomics with Heterogeneous Households." Working Paper. Available at http://www.econ.nyu.edu/user/violante/Workingpapers/AR_sept8_final.pdf.
- Lowenstein, Roger. 2006. "The Economic Miracle as an Economic Mirage." *New York Times*, October 22, 2006, Section 3, p. 5.
- Nichols, Austin. 2008. "Intertemporal Variability Decompositions: Inequality, Mobility and Volatility Trends." Unpublished paper.
- Nichols, Austin and Seth Zimmerman. 2008. "Measuring Trends in Income Variability." Washington, D.C.: Urban Institute. Available at http://www.urban.org/UploadedPDF/411688_income_variability.pdf.

- Sawhill, Isabel and John E. Morton. 2007. *Economic Mobility: Is the American Dream Alive and Well?* Washington, D.C.: Economic Mobility Project, An Initiative of the Pew Charitable Trusts. Available at http://www.economicmobility.org/assets/pdfs/EMP_American_Dream.pdf.
- Storesletten, Kjetil, Chris I. Telmer, and Amir Yaron. 2004. "Cyclical Dynamics in Idiosyncratic Labor Market Risk." *Journal of Political Economy* 112(3).
- Warren, Elizabeth. 2006. "The Middle Class on the Precipice: Rising Financial Risks for American Families." *Harvard Magazine* 108(3). Available at <http://harvardmagazine.com/2006/01/the-middle-class-on-the.html>.
- Wheary, Jennifer, Thomas M. Shapiro, and Tamara Draut. 2007. "By a Thread: The New Experience of America's Middle Class". Washington, D.C.: Demos. Available at <http://www.demos.org/pubs/BaT112807.pdf>.
- Winship, Scott and Christopher Jencks. 2004a. "Understanding Welfare Reform." *Harvard Magazine* 107(2). Available at <http://harvardmagazine.com/2004/11/understanding-welfare-re.html>.
- Winship, Scott and Christopher Jencks. 2004b. "How Did the Social Policy Changes of the 1990s Affect Material Hardship among Single Mothers? Evidence from the CPS Food Security Supplement" Faculty Research Working Paper Number RWP04-027. Available at [http://ksgnotes1.harvard.edu/research/wpaper.nsf/rwp/RWP04-027/\\$File/rwp04_027_Winship_Jencks.pdf](http://ksgnotes1.harvard.edu/research/wpaper.nsf/rwp/RWP04-027/$File/rwp04_027_Winship_Jencks.pdf).

Notes

¹ Hacker (2006).

² Lowenstein (2006).

³ See Hacker (2008) ("*The Great Risk Shift: The New Economic Insecurity and the Decline of the American Dream*"), Wheary et al. (2007) ("*By a Thread: The New Experience of America's Middle Class*"), Warren (2006) ("The security of middle-class life has disappeared. The new reality is millions of families whose grip on the good life can be shaken loose in an instant."). See also Gosselin (2008).

⁴ The following two sections draw from Heathcote, Storesletten, and Violante (2008).

⁵ Cunha, Heckman, and Navarro (2005).

⁶ Storesletten, Telmer, and Yaron (2004).

⁷ Hacker and Teixeira (2006).

⁸ Winship and Jencks (2004a, 2004b).

⁹ Acemoglu and Shimer (2000).

¹⁰ See also Brown, Haltiwanger, and Lane (2006), who find that economic volatility has the effect of replacing jobs in low-productivity firms with jobs in higher-productivity ones, leading to growth in employee compensation and economic growth.

¹¹ Nichols (2008) and Nichols and Zimmerman (2008) make a similar distinction.

¹² This classification differs somewhat from that of Fields and colleagues (who distinguish between two types of relative mobility and two types of absolute mobility) and those of researchers who distinguish only between absolute and relative mobility (generally treating Fields's time-independence as relative mobility). For Fields's classification, see Fields and Ok (1999), Fields, Leary, and Ok (2000), and Fields (2004). For a more general discussion of relative and absolute mobility, see Sawhill and Morton (2007). I thank Fields for providing me with copies of his papers.

¹³ On the other hand the Spearman rank correlation coefficient or the centile correlation coefficient cannot change without rank mobility changing, so they are properly viewed as measures of relative mobility.