

From income to consumption: Understanding the transmission of inequality

Richard Blundell

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“There is a surprising difference between the trends in the dispersion of holdings of claims to goods and services (income and wealth) and trends in the dispersion of actual consumption, which is, of course, the ultimate determinant of material or economic well-being.”

Alan Greenspan, 1996¹

Economic inequality has many measures, including wages, earnings, disposable income, and consumption. Instead of entering the debate about the best way to measure inequality, I try to determine how all of the different measures might be used together to better understand the evolution of inequality within and across countries. In this article, I focus primarily on the United States and the United Kingdom.

The link between the various types of inequality dimensions is mediated by multiple “insurance” mechanisms. In this case, “insurance” refers to how families deal with unexpected earnings or income fluctuations. These mechanisms could include adjusting assets, changing family labor supply, altering taxes and transfers, changing nondurable consumption, delaying replacement of durable goods, and securing informal contracts and gifts.

In this article, I delve behind the inequality figures and address three questions: (1) How well do families insure

themselves against adverse economic shocks? (2) What mechanisms are used? and (3) How do these mechanisms vary across the life cycle, the business cycle, and the wealth distribution?² I use an economics framework for considering these questions. I find that in both the United States and the United Kingdom over the past 40 years, income and consumption inequality have diverged, and argue that a key factor in this divergence is the nature and durability of shocks to labor market earnings. I also find that during recession periods the variance of permanent income shocks increases dramatically, and both consumption inequality and income inequality grow.

Insurance mechanisms

There are a number of insurance mechanisms between wages received in the labor market and consumption, and these may temper the effects of an adverse economic shock on consumption. Figure 1 shows the steps between wages and consumption, with the intervening insurance mechanisms.

- *Hours*: The hourly wage received is linked to earnings by the number of hours worked; one mechanism people could use to increase their income is to increase the number of hours worked.
- *Family labor supply*: If there is more than one potential earner in a family, joint decisions can be made about who and how many of the earners work.
- *Taxes and transfers*: The key mechanism between earnings and spendable income is taxes and transfers.
- *Links between disposable family income and consumption*: There are a number of different mechanisms that link income to consumption, including the ability to borrow and save (self-insurance) and decisions about when to replace durable goods.

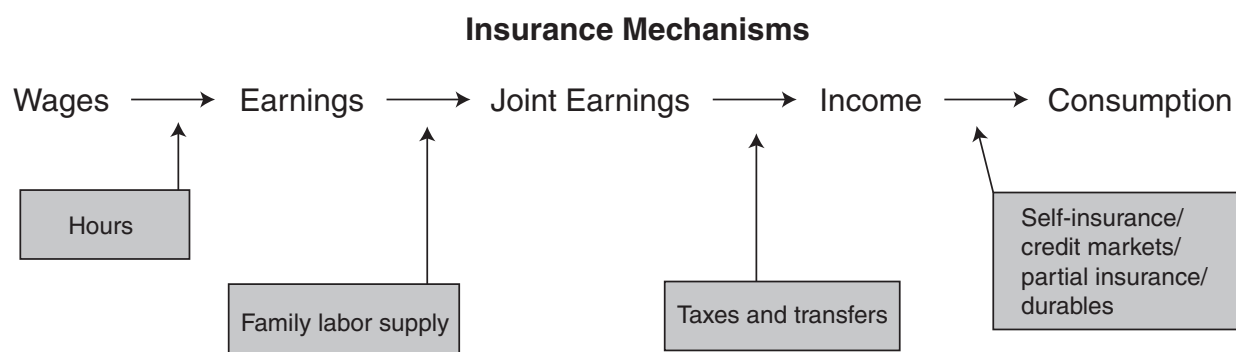


Figure 1. Insurance mechanisms

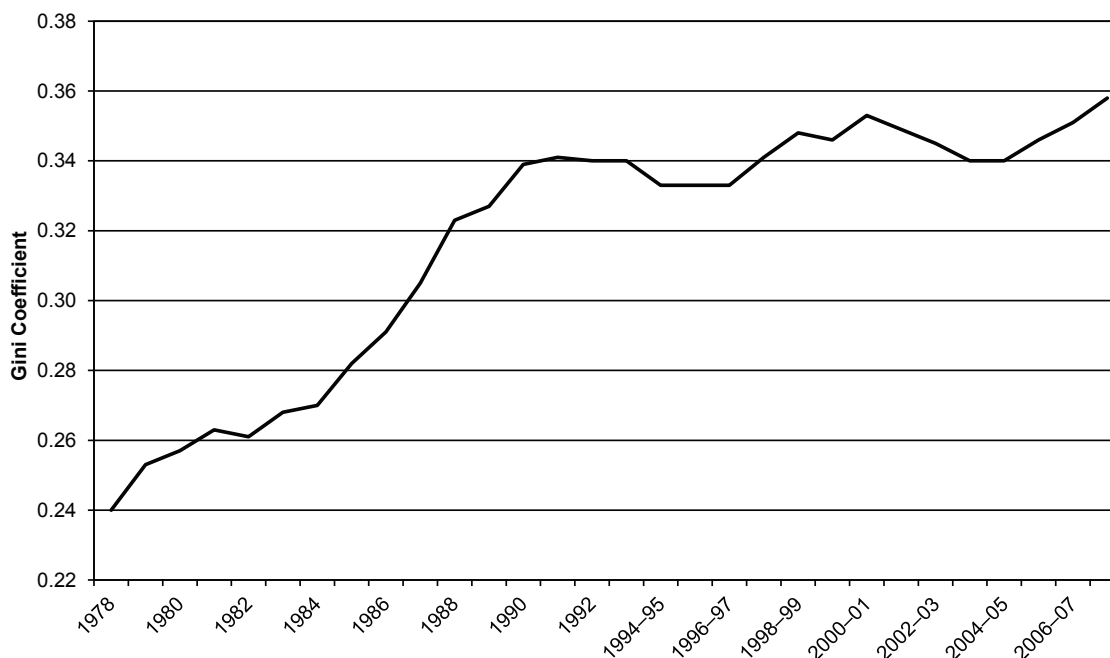


Figure 2. Inequality in Great Britain, the Gini coefficient, 1979 to 2007-08.

Source: M. Brewer, A. Muriel, D. Philips, and L. Sibieta, "Poverty and Inequality in the UK: 2009," IFS Commentary C109, Institute for Fiscal Studies, 2009. Author's calculations using Family Expenditure Survey and Family Resources Survey.

Typically, researchers look at each of these mechanisms in isolation; the purpose of this current work is to link them together. The way that families use them to respond to adverse economic shocks will vary according to where they are in their life cycle, and at different points in time, depending on whether the economy is growing or in recession. It will also depend on their wealth levels and their access to credit.

Characteristics of inequality growth since the late 1970s

In this section, I look at inequality growth in both Great Britain and the United States since the late 1970s. Figure 2 shows inequality in Great Britain since 1979. Great Britain experienced very strong inequality growth in the 1980s, illustrated by a rapid increase in the Gini coefficient.³ During this boom, inequality levels in Great Britain moved from what was typical for Northern European countries up to nearer what is typical in the United States. The United States also experienced an increase in inequality over this period, and remains the wealthy country with the highest Gini coefficient.

Are recessions different?

Figure 3 shows percentiles of the household earnings distribution in the United States from 1970 to 2005, with recession periods indicated. The growth of earnings inequality over time is evident, but it also appears that the earnings dips one would expect to see during a recession are more severe for those in the lower part of the earnings distribution. Note that these are cross-sections, and do not follow the same individuals over time.

Consumption inequality

Consumption inequality is generally lower than income inequality, as one might expect. This reflects the fact that families and households are making efforts such as those outlined in Figure 1 to shield themselves from income fluctuations. Of particular interest here is what happens to consumption and income inequality over time; in general, income inequality grows more rapidly than consumption inequality, though this is not always the case. Table 1 shows both income and consumption inequality in the United States and the United Kingdom over the period when inequality was increasing particularly rapidly. The biggest break between income and consumption inequality occurred in the early 1980s. Consumption inequality tended to stabilize by the late 1980s, while income inequality continued to rise.

Table 1
Income and Consumption Inequality 1978-1992

	1978	1986	1992
United Kingdom			
Income Gini	.23	.29	.33
Consumption Gini	.20	.24	.26
United States	1981	1985	1990
Income Gini	.34	.39	.41
Consumption Gini	.25	.28	.29

Source: For United Kingdom; A. Goodman and Z. Oldfield, *Permanent Differences? Income and Expenditure Inequality in the 1990s and 2000s*, Institute for Fiscal Studies, London, U.K., June 2004. For United States; D. S. Johnson, T. M. Smeeding, and B. Boyle Torrey, "Economic Inequality through the Prisms of Income and Consumption," *Monthly Labor Review* 128, No. 4 (2005): 11-24.

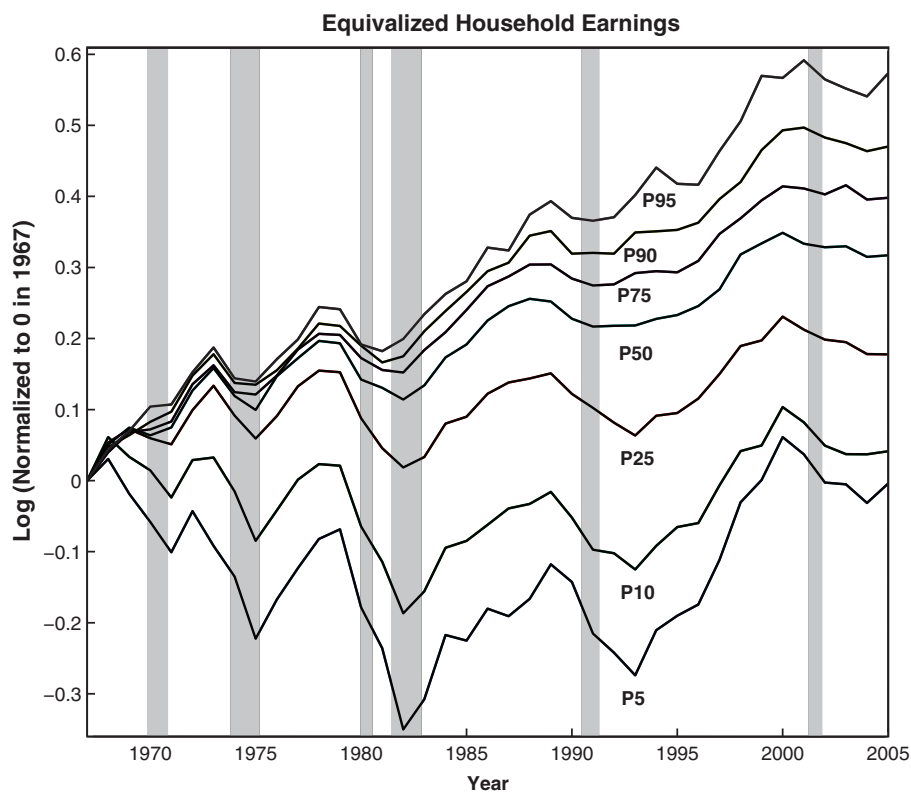


Figure 3. Percentiles of the household earnings distribution in the United States, 1967–2005.

Source: J. Heathcote, F. Perri, and G. L. Violante, “Unequal We Stand: An Empirical Analysis of Economic Inequality in the United States, 1967–2006,” *Review of Economic Dynamics* 13, No. 1 (2010): 15–51.

Note: Data are from the Current Population Survey. Shading indicates National Bureau of Economic Research designated recessions.

Consumption inequality does not always rise more slowly than income inequality. For example, in Japan in the 1980s, consumption inequality rose more quickly than income inequality.⁴ Since inequality increases with age, the pattern in Japan can be explained by their rapidly aging population, a result of low fertility and long life expectancies. (This is an example of why it is useful to follow birth cohorts over time rather than just using macroeconomic inequality measures.)

A study by Moffitt and Gottschalk looked at how much of the growth in inequality in the United States over the 1970s and 1980s was due to year-to-year changes in income, and how much to permanent income changes.⁵ They found that about half of the growth was due to the more transitory changes. Though one might think that permanent income changes matter more, this will depend on a household’s ability to insure more transitory changes. A poorly targeted tax and benefit system and limited access to credit make transitory income shocks difficult for a family to insure.

Inequality by generation

Figure 4 shows income inequality in the United Kingdom for three birth cohorts, those born in the 1930s, those born in the 1940s, and those born in the 1950s. Later-born cohorts generally have greater inequality at a given age. I attribute

this almost entirely to the impact of the inequality boom of the early 1980s.⁶ The corresponding graphs for consumption inequality are shown in Figure 5. Consumption inequality by generation shows a correspondingly higher level of inequality among the younger cohort at any given age. Similar results for the United States also show that later-born cohorts have higher inequality.⁷

Income dynamics

In order to understand the transmission of inequality from income to consumption, it is necessary to understand income dynamics, and particularly the degree of persistence in income shocks. Income dynamics will vary across time and across the life-cycle for different types of individuals and families. It is important to recognize that different “shocks” to income will have different degrees of persistence. In general, less-persistent shocks are somewhat easier for individuals, and for society, to protect against.

By looking at panel data models, it is possible to see over time the relative importance of persistent income shocks compared to those that are more temporary. One way to do that is to determine the ratio of the amount of variation in permanent events relative to the amount of variation in transitory events. In the United States during the recession period

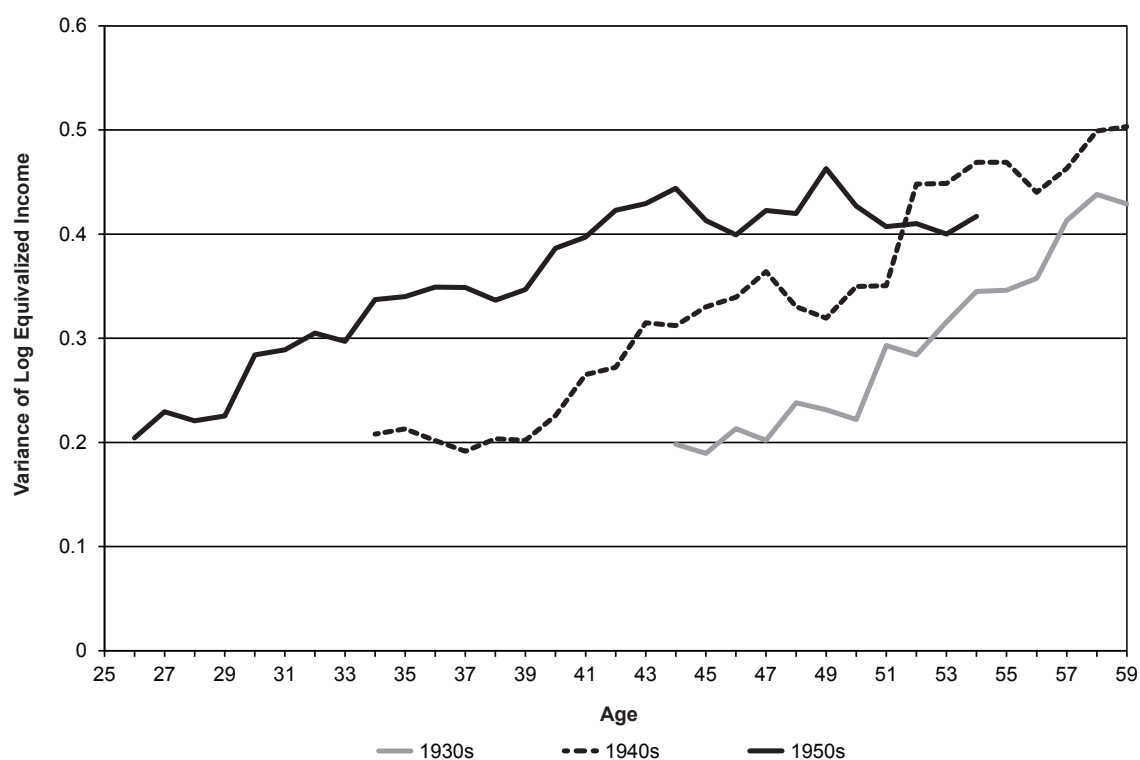


Figure 4. Cohort income inequality in the United Kingdom.

Source: R. Blundell, L. Pistaferri, and I. Preston, "Consumption Inequality and Partial Insurance," *American Economic Review* 98, No. 5 (2008): 1887–1921.

of the early 1980s, there was a sharp increase in the amount of variation (good and bad) in permanent income events, followed by a gradual decrease.⁸ Over the same period the variance of transitory shocks had a continual increase. A similar pattern is evident in the United Kingdom. We will see in the next section how these variance patterns for income shocks can explain trends in consumption inequality.

Consumption dynamics

How are income dynamics linked to consumption dynamics? To look at this, we again use birth cohorts and look at how individuals in each birth cohort react in consumption to various changes to income. This analysis is complicated by the lack of historical panel data on consumption. For this work, we impute consumption using available data.⁹ Looking at the same two U.S. birth cohorts discussed earlier, those born in the 1930s and those born in the 1940s, we find that the younger cohort has much less ability to deal with permanent income shocks than the older cohorts. That is, a reduction in income is reflected to a greater degree in reduction in consumption. A younger person facing a permanent income shock with few assets to draw on has little choice but to change consumption, while an older person is more likely to have other options. We also looked specifically at those with low education, and found that they were especially ill-prepared to deal with permanent income shocks. For all groups, transitory income shocks had less effect on consumption

than permanent ones, but again, those in the low-education group and those with low wealth had less ability to deal even with these short-term income changes.¹⁰

Implications for inequality dynamics

A key driving force in the evolution of income and consumption inequality is the persistence or durability of income shocks. The 1980s recession in both the United States and the United Kingdom is characterized by a large spike in the variance of permanent shocks. This coincides with a change in how skills are being rewarded, with a shift towards higher-skill jobs over this time period. The spike in variance can explain most of the differential growth in consumption and income inequality over this recession period. However, we find quite different behavior among low-wealth households, who may not have access to the insurance mechanisms of higher-wealth households.

Alternative mechanisms

For low-wealth individuals, it is very hard to access the credit market at reasonable interest rates, so other mechanisms must be utilized. In order to look at how low-wealth individuals respond to growth in inequality, we assess three of the insurance mechanisms described above for tempering the effects of an adverse change in income on consumption

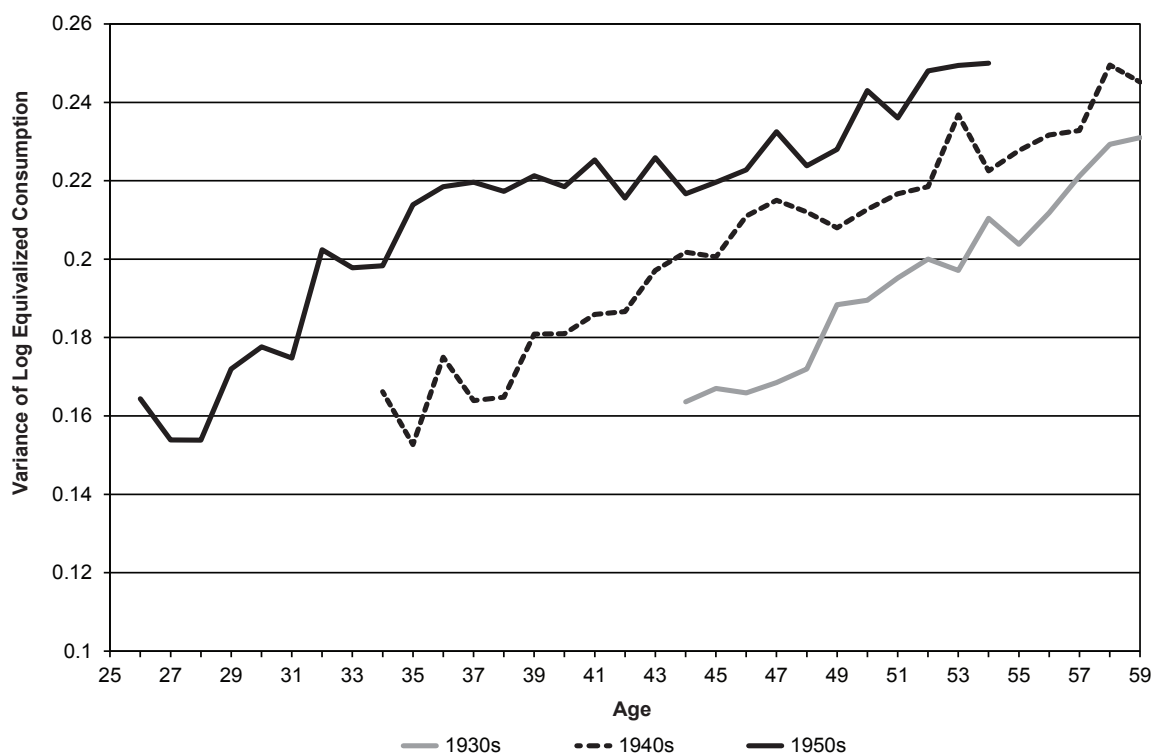


Figure 5. Cohort consumption inequality in the United Kingdom.

Source: R. Blundell, L. Pistaferri, and I. Preston, "Consumption Inequality and Partial Insurance," *American Economic Review* 98, No. 5 (2008): 1887–1921.

that are likely to be important for this group. These are labor supply of family members, taxes and welfare, and delaying durable replacement.

Low-wealth individuals here are defined as the bottom 30 percent of the distribution. Focusing on families headed by working-age individuals, we find little or no insurance against permanent shocks and much reduced insurance against transitory shocks, highlighting the vulnerability of low-wealth families.¹¹ The question is, how much do family labor supply, taxes and welfare, and durable replacement help ameliorate the worst effects of adverse income shocks among such low-wealth households?

Individual and family labor supply

An adverse individual income shock may be compensated by an increase in the labor supply of another family member. This tends to be a fairly powerful mechanism. The data show that this occurs even for transitory income shocks like a temporary layoff or health setback. According to the standard economic model, it would be both easier and cheaper to use the credit market to respond to a transitory income shock, but again, low-wealth households may not have easy access to the credit mechanism.

Taxes and welfare

The insurance value of taxes and benefits has been covered extensively elsewhere, so I will not go into great detail here,

but it is clear that the tax and welfare system provides insurance against earnings shocks. Programs like food stamps (Supplemental Nutrition Assistance Program, SNAP) in the United States and income support in the United Kingdom work particularly well to ease the effects of income shocks on consumption.¹² There are also a number of interesting policy design issues to look at here. Some programs deal with the long term (like the Earned Income Tax Credit in the United States, or the Working Tax Credit in the United Kingdom), where even if your earnings are relatively low over a long period, you continue to get an earnings subsidy. These contrast with time-limited transfers (like the In-Work Credit in the United Kingdom, a one-year-long earnings subsidy). The former may be better at dealing with permanent income shocks, while the latter might be very effective during more transitory earnings changes. At different points in the business cycle, one or the other type of income fluctuation will be more prevalent, so policies designed to address inequality need to take this into account.

Durable replacement

The final mechanism for moderating income shocks that I will discuss is durable replacement. This again, along with family labor supply, is a mechanism that is particularly useful for low-wealth families who do not have easy access to traditional credit markets in order to smooth even transitory income shocks. By choosing to delay replacement of durable goods such as automobiles, furniture, and even clothes,

families may be able to ease the effects of transitory income shocks on basic consumption items.

This mechanism is not very useful for permanent income shocks since durable replacement can usually only be delayed for a short period. However, for transitory shocks it could be important for low-wealth households. Looking at how variation in permanent income shocks transmits into variation in consumption during the period of 1978 through 1992 in the United States, we found that, as expected, whether or not durable purchases were counted as an expenditure made very little difference. For transitory shocks among low-wealth households, however, including durables in expenditures resulted in a substantial jump in the transmission of income shocks to consumption.¹³ This suggests that low-wealth households experiencing transitory adverse income shocks are choosing to delay the purchase of durable goods.

Summary

In this article I have argued that it is not enough to just describe inequality, but instead it is necessary to analyze determinants in order to understand how individuals and families ameliorate adverse effects of inequality. Understanding how well different mechanisms such as taxes and welfare, use of the credit market, family labor supply, and durable goods replacement work is essential in the design of policy for redressing the adverse consequences of inequality and poverty.

At the heart of this research has been the divergent evolution of income and consumption inequality in both the United States and the United Kingdom over the past 40 years. A relatively new finding from the work presented here is that a key driving force explaining why income and consumption inequality diverge is the nature and durability of shocks to labor market earnings. We find that recession periods show a pronounced spike in the variance of permanent income shocks and, at these times, there is growth in consumption inequality as well as income inequality.

For low-wealth households, where capital is almost irrelevant, the lack of access to the credit market shows up in changes to family labor supply and durable replacement. Changes in the labor supply of other family members and the delay in the replacement of durables are important mechanisms for cushioning adverse shocks to labor earnings. Tax and welfare policy can also act as an important source of insurance against income shocks. Understanding the degree to which families are able to maintain their standard of living when income decreases will allow policymakers to focus on assisting families when their own efforts fall short. ■

²This work draws on R. Blundell, L. Pistaferri, and I. Preston, "Consumption Inequality and Partial Insurance," *American Economic Review* 98, No. 5 (2008): 1887–1921.

³The Gini coefficient is a standard statistic for measuring economic inequality. It ranges from 0 (when all people have identical incomes) to 1 (when all income is received by a single individual).

⁴F. Othake and M. Saito, "Population Aging and Consumption Inequality in Japan," *Review of Income and Wealth* 44, No. 3 (1998): 361–381.

⁵R. Moffitt and P. Gottschalk, "The Growth of Earnings Instability in the U.S. Labor Market," *Brookings Papers on Economic Activity* 25, No. 2 (1994): 217–272.

⁶Authors' calculations, see <http://www.ucl.ac.uk/~uctp39a/presentations.html>.

⁷R. Blundell, H. Low and I. Preston, "Decomposing Changes in Income Risk Using Consumption Data," IFS Working Paper W08/13, Institute for Fiscal Studies: London, U.K., November 2008.

⁸Blundell et al., "Consumption Inequality and Partial Insurance."

⁹We combine non-panel consumption and income data from the Consumer Expenditure Survey with income, earnings, and limited consumption data from the Panel Study of Income Dynamics. See Blundell, Pistaferri and Preston (2008) for a detailed description of this technique.

¹⁰Blundell et al., "Consumption Inequality and Partial Insurance."

¹¹A fourth potentially important mechanism, family and interpersonal networks, is not addressed here as we have little reliable data on it.

¹²R. Blundell and L. Pistaferri, "Income Volatility and Household Consumption: The Impact of Food Assistance Programs," *Journal of Human Resources* 38, Supplement (2003): 1032–1050.

¹³Blundell et al., "Consumption Inequality and Partial Insurance."

¹A. Greenspan, "Job Insecurity and Technology," in *Technology and Growth: Conference Proceedings*, Research Conference Series, No. 40, eds. J. C. Fuhrer and J. Sneddon Little (Boston: Federal Reserve Bank of Boston, 1996).

IRP RIDGE Center for National Research Awards

Five Subgrants

Five food assistance research proposals were recently awarded funding by the RIDGE Center for National Food and Nutrition Assistance Research, which is run by the Institute for Research on Poverty (IRP) at the University of Wisconsin–Madison in conjunction with the Economic Research Service (ERS) of the U.S. Department of Agriculture.

The grants begin July 1, 2011, and run through December 31, 2012, and constitute the second in what will be four rounds of 18-month awards for food assistance research since ERS named IRP as the Research Innovation and Development Grants in Economics (RIDGE) Center for National Research in January 2010. The 2011 investigators and proposal abstracts follow below.

2011–2012 IRP RIDGE Center Proposal Abstracts

“Does the Neighborhood Food Environment Influence the Relationship between Food Stamp Program Participation and Weight-Related Outcomes?”

Principal Investigator: Diane Gibson, School of Public Affairs, Baruch College, City University of New York

Using a sample of low-income adults, this project will examine whether the availability of food retail and food service establishments in a person’s neighborhood of residence (a person’s “neighborhood food environment”) was associated with the types of establishments where the person purchased food, the person’s daily energy intake, weight status, and weight-related comorbidities, and will consider whether these associations differed for Supplemental Nutrition Assistance Program or SNAP (formerly Food Stamp Program or FSP) participants compared to eligible nonparticipants. The results of this project will offer insight into whether the neighborhood food environment influences how food spending is allocated across types of food establishments and whether changing the allocation of food spending across types of food establishments in turn leads to differences in energy intake, weight status, and weight-related comorbidities for low-income individuals, SNAP participants, and eligible nonparticipants.

“Food Stamps, Food Insufficiency, and Diet-Related Diseases among the Elderly”

Principal Investigator: Nadia Greenhalgh-Stanley, Department of Economics, Kent State University

The U.S. Department of Agriculture estimates that less than 41 percent of the elderly—the fastest-growing population in the United States—who are eligible for food assistance participate in the Supplemental Nutrition Assistance Program (SNAP). Studies document that lack of information about eligibility for food assistance appears to be the principal reason for this. This study examines the effect of SNAP participation on reported food insufficiency and diet-related diseases among the elderly to better understand potential long-term health consequences of food insufficiency. The study will test whether those eligible elderly persons who participate in SNAP report reduced rates of food insufficiency and diet-related diseases.

“Studying Non-Use of Food Assistance among Low-Income San Franciscans”

Principal Investigators: David B. Grusky and Christopher Wimer, Center for the Study of Poverty and Inequality, Stanford University

This qualitative study examines low-income San Franciscans’ decision-making around using or not using food from food banks and government food assistance programs. This project will help understand the in-depth processes that underlie low-income people’s decisions around food assistance, and therefore help public and private stakeholders improve systems of food assistance delivery, particularly around increasing take-up of healthy foods like fresh produce. Using approximately 60 in-depth interviews with low-income San Franciscans, this study will address the following questions: (1) What are the most prevalent reasons for non-use among low-income individuals who do not access food bank services? (2) How do the prevalence of these reasons differ by groups of individuals (parents of schoolchildren, residents of low-income housing projects, and unemployed individuals)? (3) How and why do non-users interface with other government food assistance programs like food stamps, school meals, etc.? And (4) How and why do nonusers utilize cheap, unhealthy food like fast food and “junk” food vs. the healthier food, including fresh produce, that they might get from food bank sites?

“Food Assistance and Children’s Eating Patterns, Food Insecurity, and Obesity: The Influence of Local Food Prices”

Principal Investigators: Taryn Morrissey and Alison Jackowitz, Department of Public Administration and Policy, American University

In 2009, approximately 23 percent of households with children aged 6 and younger in the United States were food insecure. At the same time, over-nutrition is a growing problem among American children; 10.4 percent of 2- to 5-year-old children were considered obese (above the 95th percentile for age and gender) in 2007 to 2008, double the rate in the 1970s. This study examines how local food prices affect children’s food insecurity, obesity, and eating habits, and whether food assistance receipt buffers these effects. Specifi-

cally, the two primary research objectives of this study are to: (1) Estimate how local food prices influence the food insecurity, obesity status, and eating patterns of children from birth to 5 years of age; and (2) Understand how participation in food assistance programs changes the relationship between food prices and the food insecurity, obesity status, and eating patterns of children from birth to 5 years of age. Study results will have important policy implications, particularly in light of increasing food prices.

“SNAP Participation, Food Choices, Nutritional and Health Outcomes among Low-Income Women”

Principal Investigator: Zhou Yang, Department of Health Policy and Management, Rollins School of Public Health, Emory University

Food insecurity and obesity are two major public health crises posing serious health threats to low-income families in the United States. As an entitlement program for people liv-

ing in poverty and the working poor, the Supplemental Nutrition Assistance Program (SNAP) was originally designed to improve the nutritional and health outcomes of adults and children facing food insecurity. With the development of the food industry and changes in lifestyle in recent decades, as well as the deterioration of the food environment in many low-income neighborhoods, it is not clear if SNAP fulfills its original mission today without regulations or interventions on food choices, food environment, or behavioral counseling. This study will investigate the effect of SNAP participation on body weight and health outcomes (measured by lab results and physical examination) through its influence on food choices (measured by calorie balance and nutrients intake) among low-income women in the United States. The study will use merged secondary data from National Health and Nutrition Examination Survey (NHANES) and supplemental data from the USDA and Chamber of Commerce from 2007 to 2008.

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