

MRRC RESEARCHER

*Richard Burkhauser and John Cawley
discuss their MRRC-supported research*

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Q: Describe your MRRC-supported work on the causes and consequences of labor force exit.

A: In our society, the economic well being of the vast majority of households is dependent on work. So over the life cycle, the greatest threat to their economic security comes when the primary wage earner permanently transitions out of the labor force. Hence it is not surprising that the most important United States social insurance program--Old-Age, Survivors and Disability Insurance (OASDI)—focuses on providing insurance against the three most common causes of these permanent labor force exits: retirement, death, and disability.

My MRRC-supported work focuses on questions related to these exits: What are the economic consequences on the household of the death or disability of the primary earner? What determines the timing of exit from the work force following the onset of a disability? And, what role does public policy play in these outcomes?

Two early papers for MRRC (WP 2001-014 and WP 2002-033) ask the questions: what happens to the economic well-being of a woman following the death of her husband and how does this vary across countries? Using Cross-National Equivalent File panel data we are able to look at household income and its sources before and after the husband's death in the United States, Great Britain, Germany, and Canada. We find that these economic consequences are remarkably similar across the four countries. Most widows experience a decline in income. However, when we adjust for the reduction in household size, there is, on average, no decrease in their overall economic well-being.

While the U.S. Social Security system does not replace as large a share of the husband's income as the Social Security systems in the other countries we studied, this is offset by the much bigger role played by private sector income, especially from employer pensions. Once you look at how total household size-adjusted income changes, it turns out that widows in the U.S. do about as well as widows in the other countries.

My first paper for MRRC (WP 2001-009) looks at how household income changes in the years prior to and after application for Disability Insurance (DI). John Bound and I had access to matched SIPP and Social Security administrative records data that allowed us to follow people for three years before and three years after they applied for DI benefits. A major concern among policymakers was that people were falling through the cracks while waiting to receive their DI benefits. The time between application and receipt of DI benefits can be quite long and there is a minimum five month waiting period from the time of onset even for those who are judged to be otherwise eligible for benefits. So we wanted to see if applicants' household income severely declined in the run up to application and prior to acceptance because they weren't working.

Again, the good news is that on average the decline in wage earnings was offset by short-term disability benefits, workers compensation, or private insurance over this period. So on average we didn't find a great decline in their household's economic well-being. The system, as a whole, seems to work fairly well.

Q: What are the behavioral effects of policy?

A: In addition to asking questions about what happens to economic well-being, we've looked at how the system affects behavior. The employment of men with disabilities in the United States has declined fairly substantially in the 1990s relative to men without disabilities. There's a large literature examining this phenomenon: is it real? what's causing it?

Mathis Schroeder and I (WP 2004-071), using data from the Current Population Survey and from the German Socio-Economic Panel, estimated trends in the employment of working-age men with disabilities relative to those without disabilities in the U.S. and Germany, two countries with very similar level of health but quite different social institutions with respect to the employment of those with disabilities. After creating a variable to determine disability in the German data consistent with our U.S. variable we were able to see if they experienced similar trends over the 1990s.

We find that there was no decline in the relative employment rate of men with disabilities over this period in Germany, which suggests that social policy changes in the U.S. are responsible for the difference in trends. This study demonstrates the value of cross-national comparisons to try to separate policy outcomes.

In another study (WP 2006-145), Ludmila Rovba and I addressed a broader public policy question: what's been happening to income inequality in the U.S. over the last twenty years and how does it compare with changes in other countries? We observed that income inequality increased dramatically in the 1980s in the U.S. but not in the 1990s as the entire income distribution improved over the business cycle 1989-2000. During that period, everybody became better off, in part because more of the fruits of economic growth reached the lower end of the income distribution. Surprisingly, the U.S. did better than Germany and Japan—two countries with a much greater social safety net—in this respect in the 1990s. Our findings are especially relevant for the Social Security Administration because they show that from 1989-2000, economic well-being improved for older Americans as well.

Q: Talk about how your recent work on obesity fits with that interest.

A: I am very pleased to be able to work with John Cawley, who is one of the leading experts on the economics of obesity, and to be able to wed our work to my interests in exits from the labor force to tackle a question that is very important for the country as a whole and also for Social Security policy. Obesity has been rising in the U.S. at least since the 1970s. The medical literature has established that obesity is a significant risk factor for heart disease, diabetes, and other medical conditions that have significant impact on people's ability to work, their impairment levels, and eventually whether they have disabilities.

In our first MRRC project on this topic, we used data from the Panel Study of Income Dynamics (PSID) to examine whether there was a link between obesity and reported disability and between disability and enrollment in DI. Indeed, we found that obesity was a strong risk factor for disability. However, that work convinced us that the major variable that social scientists used to measure obesity, body mass index (BMI), was a very crude measure of fatness.

Q: Why is it important to measure fatness?

A: BMI is just a measure of total body mass, and it ignores the composition of that mass. Medical research is really zeroing in on fatness—as measured, for example, by percent body fat—as the critical risk factor in the outcomes I’ve mentioned. One way to measure percent body fat is through bioelectrical impedance analysis (BIA). BIA measures body fat by passing a safe electric current through the body; the logic is that fat is an insulator and water (which is what composes much of muscle mass) is a conductor, so resistance to the electric charge is informative about the quantity of fat and lean mass in the body.

In our work with the National Health and Nutrition Examination Survey (NHANES) III, which contains data on both measured weight and height (to calculate BMI) and BIA readings (to calculate percent body fat) we show that BMI is not highly correlated with percent body fat and that BMI is a noisy measure of fatness.

There are multiple definitions of obesity. The most commonly-used one is based on BMI; specifically, a BMI greater than 30. However, an alternate definition of obesity is based on percent body fat: greater than 25 percent for men or greater than 30 percent for women. Which of these two definitions of obesity you use makes an enormous difference. For example, if you define obesity using BMI, there is no difference in the prevalence of obesity of white and black men. However, when we use obesity defined using percent body fat, we find that white men have a higher rate of obesity than black men. Which definition of obesity you use also matters for women. If one defines obesity using BMI, African-American women appear to have a much higher prevalence of obesity than white women, but when you define obesity using percent body fat the gap is much smaller.

Q: Why is BMI a better measure for economic analysis?

A: In the past, economists in particular and social scientists in general have used BMI pretty unquestioningly. Social scientists have not kept pace with the medical research, in which researchers have demonstrated that various measures of fatness differ in their ability to predict health outcomes like heart attack. Our major point is that each measure of fatness and obesity has its unique strengths and weaknesses, and that social scientists should consider other measures of fatness than BMI and other measures of obesity than that defined by BMI.

For example, in our forthcoming paper in the *Journal of Health Economics*, we report the correlation between employment and fatness, measured both by BMI and percent body fat (calculated using BIA), in NHANES III data. Our research confirms that there is a correlation between BMI and employment—obese people are less likely to work. However, when total body mass is disaggregated into fat versus lean body mass (which includes muscle, bone, and fluids), we find that only fat is correlated with unemployment, not lean mass.

That suggests that the use of BMI, which lumps together both fat and lean mass, can obscure important relationships between fatness and social science outcomes. This has convinced us that it is very important to use more accurate measures of fatness in economic analyses in particular and in social science in general.

Q: Where are you headed with this line of research?

A: In our MRRC research proposed for next year, we would take advantage of an exciting and rich new

dataset. In the last six months, the NHANES III data have been linked to Social Security administrative records. That will allow us to revisit some of the work we did with the PSID data, which relies on self-reported Social Security disability benefit receipt. The NHANES III linked to administrative records is a major improvement over the data used in previous research by us and others because it includes much more accurate measures of both the outcome of interest (application for DI) and the regressors of interest (various measures of fatness collected through medical examination). This will vastly increase the precision of our estimates.

Our findings should provide the most accurate information to date on the correlation between obesity and application for DI. Because increases in obesity are likely to be associated with increases in the probability of application for DI, our findings will help the SSA to better predict program application and enrollment and hence overall OASDI costs.

Sources:

The Importance of Objective Health Measures in Predicting Early Receipt of Social Security Benefits: The case of Fatness by Richard V. Burkhauser and John H. Cawley WP 2006-148, December 2006.

How the Distribution of After-Tax Income Changed Over the 1990s Business Cycle: A Comparison of the United States, Great Britain, Germany, and Japan by Richard V. Burkhauser, Takashi Oshio, and Ludmila Rovba WP 2006-145, December 2006.

Obesity, Disability and Movement Onto the Disability Insurance Rolls by Richard V. Burkhauser and John H. Cawley WP 2004-089, October 2004.

A Cross-National Comparison of the Employment for Men With Disabilities: The United States and Germany in the 1980s and 1990s by Richard V. Burkhauser and Johan Mathis Schröder WP 2004-071, January 2004.

How Exits from the Labor Force or Death Impact Household Incomes: A Four Country Comparison of Public and Private Income Support by Richard V. Burkhauser, Phil Giles, and Dean Lillard WP 2002-033, July 2002.

Long-Term Labor Force Exit and Economic Well-Being: A Cross-National Comparison of Public and Private Income Support by Richard V. Burkhauser, Dean Lillard, and Paola Maria Valenti WP 2001-014, May 2001.

Tracking the Household Income of SSDI and SSI Applicants by John Bound, Richard V. Burkhauser, and Austin Nichols WP 2001-009, May 2001.

Beyond BMI: The Value of More Accurate Measures of Fatness and Obesity in Social Science Research by Richard V. Burkhauser and John Cawley *Journal of Health Economics* (forthcoming).



John H. Cawley is assistant professor in Cornell's Department of Policy Analysis and Management as an assistant professor. His recent research focuses on the economics of health behaviors and evaluating U.S. health policies. He is investigating the effect of body weight on labor market outcomes such as wage rates, unemployment, and employment disability; the role of body weight in the decision of adolescents to initiate smoking; and the extent to which consumption of calories can be considered addictive. Cawley is a

Faculty Research Fellow with NBER and a Research Affiliate of the Northwestern University/University of Chicago Joint Center for Poverty Research. He currently serves on an advisory board to the Centers for Disease Control for an initiative on the economics of physical inactivity. He received his Ph.D. in economics from the University of Chicago in 1999 and graduated magna cum laude from Harvard in 1993.



Richard V. Burkhauser is the Sarah Gibson Blanding Professor of Policy Analysis in the Department of Policy Analysis and Management in the College of Human Ecology at Cornell University. Burkhauser has published widely in the area of United States and European social security retirement and disability policy. His most recent publications include a co-author textbook, *The Economics of Aging* (2004) and a co-editor book, *The Decline in Employment of People with Disabilities: A Policy Puzzle* (2003). He was a member

of the 2003 Technical Panel on Assumptions and Methods of the Social Security Administration Actuaries, a U.S. Senate appointee to the Ticket to Work/Work Incentives Improvement Act Advisory Board (2000-2002), as well as a member of the Technical Panel of the 1994-1996 Advisory Council on Social Security and the 1994-1995 National Academy of Social Insurance Panel on Disability Policy Reform. He received his Ph.D. in economics from the University of Chicago.

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