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⁷ See Davis, Faberman, and Haltiwanger (2006); Davis et al., “Business Volatility, Job Destruction, and Unemployment”; and R.J. Faberman, “Job Flows, Jobless Recoveries, and the Great Moderation,” Federal Reserve Bank of Philadelphia Working Paper No. 08–11 (June 2008).

⁸ See, for example, J.Y. Campbell et al., “Have Individual Stocks Become More Volatile?” NBER Working Paper No. 7590, March 2000, and Journal of Finance 56(1) (February 2001), pp. 1–43; and D. Comin and S. Mulani, “A Theory of Growth and Volatility at the Aggregate and Firm Level,” NBER Working Paper No. 11503, August 2005,

and Review of Economics and Statistics 88(2) (May 2006), pp. 374–83.

⁹ S.J. Davis, J. Haltiwanger, R. Jarmin, and J. Miranda, “Volatility and Dispersion in Business Growth Rates: Publicly Traded versus Privately Held Firms,” NBER Working Paper No. 12354, July 2006, and NBER Macroeconomics Annual 2006, Volume 21 2007.

¹⁰ See, for example, E. Fama and K. French, “New Lists: Fundamentals and Survival Rates,” Journal of Financial Economics, 73(2) (August 2004), pp. 229–69; and G. Brown and N. Kapadia, “Firm-Specific Risk and Equity Market Development,” Journal of Financial

Economics, 84(2) (May 2007), pp. 358–88.

¹¹ The literature is vast. A seminal contribution is D.T. Mortensen and C.A. Pissarides, “Job Creation and Job Destruction in the Theory of Unemployment,” Review of Economic Studies 61(3) (July 1994), pp. 397–415.

¹² S. J. Davis et al., “Business Volatility, Job Destruction, and Unemployment,” *op. cit.*

¹³ See R. Shimer, “Why Is the U.S. Unemployment Rate So Much Lower?” NBER Macroeconomics Annual 1998, Volume 13, 1999.

The Great Society, Food and Nutrition Programs, and Family Well Being

Hilary Hoynes *

Food and nutrition assistance programs are an important part of the U.S. safety net. In 2009, the Food Stamp Program (FSP) served about 34 million persons at a total cost of \$56 billion and the Supplemental Program for Women, Infants and Children (WIC) served 9 million people at a cost of \$6.5 billion dollars.¹ The goal of these two programs is to improve the nutritional well-being and health of low-income families. In the post-welfare-reform era, the FSP increasingly has become the central safety net program in the United States. It is the only program that is universal—provided to all ages and family types whose income and assets make them eligible—and, unlike

other cash or near-cash assistance programs, it is adjusted each year for changes in the cost of food. From 2008 to 2009, food stamp caseloads increased almost 20 percent.²

Both FSP and WIC were developed in the Great Society period of the 1960s and 1970s. They were introduced in direct response to policy recommendations highlighting health deficits among low-income individuals that might be reduced by improved access to food. It was further recognized that by providing food at “critical times” to pregnant and lactating women and young children, it might be possible to prevent a variety of health problems.³

Throughout the history of the FSP and WIC, the program parameters were set by the U.S. Department of Agriculture; they are uniform across states. This is unusual, because U.S. states play an important role in setting the generosity of most means-tested transfer programs. Without the state-level variations that economists often use to evaluate transfer programs,

the earlier research on FSP and WIC typically relied in some way on comparing program participants to non-participants.⁴ Recently, this approach has come under question. For example, a number of researchers have pointed out that if pregnant women who participate in WIC are healthier, more motivated, or have better access to health care than other eligible women, comparisons between the children of WIC participants and non-participants could produce positive estimates for the program’s results, even if there were none. Conversely, if WIC participants are more disadvantaged than other mothers, then such comparisons may understate the program’s impact.⁵ Similar arguments apply to the FSP; in fact several studies find that food stamp participation leads to a *reduction* in nutritional intake. These unexpected results are almost certainly driven by negative selection into the program.⁶

In a series of studies, my coauthors and I have estimated the impact of these food and nutrition programs by exploit-

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ing a novel research design. Specifically, we exploit considerable variation across *counties* in the geographic rollout of food stamps and WIC. FSP was introduced across U.S. counties over a 15-year period: the earliest programs were established in 1961 and the last ones in 1975. WIC was established first as a pilot program in 1972, it became permanent in 1975, and it reached near universal coverage by the end of the 1970s. The cross-county variation in the initiation of these two programs over time forms the basis for our estimation strategy. This research strategy has also been used to study other social programs similarly rolled out during the 1960s and 1970s, including Head Start, Medicare, and family planning services.⁷ Using this county-by-county program rollout, my coauthors and I estimate the impact of FSP on food spending, labor supply, infant health, and adult economic and health outcomes, as well as the impact of WIC on infant health. This article briefly describes that work and possible future work in the area.

Food Stamps and Family Expenditures on Food

One project, with Diane Whitmore Schanzenbach, uses the geographic rollout of the FSP to examine how food stamps affect family expenditures.⁸ Food stamp benefits are not distributed as cash payments, but instead are vouchers which can be used to purchase a wide range of food products. However, the typical economic model predicts that vouchers should lead to the same outcome as a similar sized cash transfer. As a result, depending on consumer preferences, providing in-kind transfers (relative to cash) may have little or no impact on purchases of the actual goods being subsidized. With this background, we examine two aspects of the introduction of food stamps. First, we ask how the introduction of food stamps affects family spending on food. Second, we consider how this change in food spending compares to the change that would have occurred if the benefits were provided in cash, rather than vouchers.

We use data from the Panel Study of Income Dynamics (PSID) from 1968-78 to examine the impact of the FSP on expenditures on food spent at home, meals eaten out, and total food spending. Our strategy takes advantage of the sharp timing of the county-by-county rollout of the FSP, initially constrained by congressional funding authorizations but finally available in all counties by 1975. Specifically, we use a difference-in-difference setting and information on the month that the FSP began operating in each of the roughly 3,100 U.S. counties. Our results indicate that people behave just as the theory predicts: the introduction of FSP leads to a decrease in out-of-pocket food spending and an increase in overall food expenditures. We are not able to determine the effect of FSP on the propensity to eat meals at restaurants, for which we find mixed and statistically insignificant results. Further, we learn that the marginal propensity to consume food out of food stamp income is close to the marginal propensity to consume food out of cash income. Therefore, providing food stamp benefits in voucher form leads to a minimal distortion of the consumption choice relative to what it would be if the benefit were provided in cash.

Food Stamps and Infant Health

In a second study, Douglas Almond, Schanzenbach, and I examine the impact of food stamps on infant health.⁹ As one of the largest anti-poverty programs in the United States—comparable in cost to the Earned Income Tax Credit (EITC) and substantially larger than Temporary Assistance for Needy Families (TANF)—FSP's effects are important to understand both in their own right and for what they reveal about the relationship between income and health.

Interestingly, while the goal of the FSP is to increase the nutrition of the poor, few researchers have examined its impact on health outcomes. Thus, our first motivation was to quantify a potential health benefit of the FSP and, in so doing, to broaden our thinking about the benefits of the program. Our sec-

ond aim, building on the work described above in which we find that the introduction of food stamps represents an exogenous increase in income for the poor, was to provide more general evidence on the impact of income on health. This is an important topic with little convincing evidence to date because of problems with endogeneity and reverse causality.

Again, we used the natural experiment afforded by the nationwide roll-out of the modern Food Stamp Program during the 1960s and early 1970s. We also looked at national Vital Statistics data on births and deaths in order to estimate the impact of FSP rollout on mean birth weight, low birth weight, gestation, and neonatal infant mortality. Infant health is of particular interest for this program because over 60 percent of food stamp households include children, and one-third of them have at least one pre-school age child.

We find that infant outcomes improve with FSP introduction. Changes in mean birth weight are small, increasing roughly half a percent for blacks and whites (averaged among the population participating in the program). The impacts are larger at the bottom of the birth-weight distribution, reducing the incidence of low birth weight among FSP recipients by 7 percent for whites and between 5 and 11 percent for blacks. Changes in this part of the birth-weight distribution are important because they are closely linked to other measures of newborn health.

We also find that FSP introduction leads to a reduction in neonatal infant mortality, although these results rarely reach statistical significance. Finally, we find very small (but precisely estimated) effects of FSP on fertility, suggesting that the results are not biased by simultaneous changes in the composition of women giving birth.

Early Life Interventions and Adult Economic and Health Outcomes

The availability of food stamps also may have an impact on individuals' health beyond infancy. For example, to the

extent that improved maternal nutrition improves birth outcomes, later-life health outcomes of children born to mothers receiving food stamps may also benefit.¹⁰ In addition, the availability of food stamps throughout childhood may affect adult health and economic outcomes. Almond, Schanzenbach, and I use the county rollout of the food stamp program to specifically examine how availability of food stamps in childhood affects adult health and economic outcomes.¹¹

We use the Panel Study of Income Dynamics and take advantage of its longitudinal structure. With this data, we can start with a cohort of children that we initially observe in 1968, follow them into adulthood, and observe their completed education, earnings, and such detailed health outcomes as general health status, height and weight, presence of chronic conditions, and work/activity limitations. Our results show that in utero exposure to FSP predicts later body weight outcomes, including lower obesity and more “healthy weight” ranges. We also find that in utero exposure to FSP is associated with lower rates of heart disease. Economic outcomes are also improved, with increases in high school completion and total years of education. We are currently extending this work to model one’s exposure to food stamps throughout childhood.

Work Disincentive Effects of Food Stamps

The food stamp program takes the form of a typical income support program — it provides some guaranteed benefit that is “taxed” away as a household’s earnings and income increase. As such, standard labor supply theory suggests that food stamps should lead to a reduction in work. This result stems from the income transfer nature of the program, as well as the reduction in marginal net earnings from taxing away the benefit. While this predicted work disincentive has been analyzed in other income support programs, such as Aid to Families with Dependent Children (AFDC)/TANF, far fewer studies have examined the effect of the food stamp program on labor supply.

Schanzenbach and I use the PSID and Census to examine the impact of the county food stamp rollout on the family head’s employment, annual hours and earnings, as well as family income and poverty.¹² Across all outcomes and samples, our evidence uniformly shows that the introduction of food stamps leads to reductions in employment, earnings, and income. However, the estimates are relatively modest and few of them are statistically significant. Together, these results suggest that there is a small, negative impact on income and work associated with the food stamp program.

The relatively modest size of these effects is perhaps not surprising given the low (for income support programs) benefit reduction rate of 30 percent in the food stamp program. In the AFDC/TANF program, where the work disincentive effects are estimated to be much larger, the benefit reduction rate is closer to 100 percent.¹³ To gauge the magnitude of the expected labor supply effects of the food stamp program, we simulate the impact of the program on annual hours worked in our PSID sample using estimated labor supply elasticities from the literature. These simulations yield very similar predictions to those estimated in our sample. We take this as a useful exercise which corroborates our estimates of modest work incentive effects in the food stamp program.

WIC and Infant Health

Another project with Marianne Page and Ann Huff Stevens exploits the variation in WIC program introduction across geographic areas and over time to examine its impacts on infant health as shown in the U.S. Vital Statistics data.¹⁴ We start with information that we collect on the year each WIC office opened across cities and counties. We then use a difference-in-difference model to relate birth outcomes to the availability of WIC benefits at the time the mother was pregnant.

We find that when WIC is made available by the third trimester of pregnancy, average birth weight in the county increases by approximately 2 grams. This

estimated effect is driven by women with low levels of education and by women living in high poverty counties — precisely those women who are most likely to be eligible for program benefits. Among women with low levels of education, WIC increases average birth weight by 7 grams and reduces the fraction of births that are classified as low birth weight by 1.4 percent. Using estimates of WIC participation rates, we find that low educated women experience a 10 percent increase in average birth weight for children born to WIC participants. Since we find no evidence that WIC affects fertility, our estimates are unlikely to be generated by indirect effects on selection into birth.

¹ Program information available on USDA website, see <http://www.fns.usda.gov/pd/SNAPsummary.htm> and <http://www.fns.usda.gov/pd/wisummary.htm>.

² See <http://www.fns.usda.gov/pd/SNAPsummary.htm>.

³ For example, see V. Oliveira, E. Racine, J. Olmsted, and L. Ghelfi, “The WIC Program: Background, Trends, and Issues,” in Food Assistance and Nutrition Research Report Number 27, USDA Economic Research Service, 2002.

⁴ For reviews of the literature, see J. Currie, “U.S. Food and Nutrition Programs,” in Means-tested Transfer Programs in the U.S., R. Moffitt ed., Cambridge, MA: NBER, 2003, and T. Fraker, “Effects of Food Stamps on Food Consumption: A Review of the Literature,” Mathematica Policy Research, 1990.

⁵ For example, see M. Bitler and J. Currie, “Does WIC Work? The Effects of WIC on Pregnancy and Birth Outcomes,” *Journal of Policy Analysis and Management*, Vol. 24, No. 1, (2005), pp.73–91, and L. Kowaleski-Jones and G. Duncan, “Effects of Participation in the WIC Program on Birth Weight: Evidence from the National Longitudinal Survey of Youth,” *American Journal of Public Health*, 92(5), (2002), pp.799–804.

⁶ For a discussion of these studies, see J. Currie, 2003.

⁷ See J. Ludwig and D. Miller, “Does Head Start Improve Children’s Life

Chances? Evidence from a Regression Discontinuity Design,” *Quarterly Journal of Economics*, Vol. 122, (2007), pp. 159–208; A. Finkelstein and R. McKnight, “What Did Medicare Do (And Was It Worth It?),” *Journal of Public Economics*, Vol. 92, (2008), pp. 1644–68; and M. Bailey, “The Impact of U.S. Family Planning Programs on Fertility and Mortality: Evidence From the War On Poverty and Title X.”

⁸ H. Hoynes and D. Schanzenbach, “Consumption Responses to In-Kind Transfers: Evidence from the Introduction of the Food Stamp Program,” NBER Working Paper No. 13025, April 2007, and *American Economic Journal: Applied Economics*

Vol. 1, No. 4, (2009), pp. 109–39.

⁹ D. Almond, H. Hoynes, and D. Schanzenbach, “Inside the War on Poverty: The Impact of the Food Stamp Program on Birth Outcomes,” NBER Working Paper No. 14306, September 2008, and forthcoming, *Review of Economics and Statistics*.

¹⁰ See, for example, S. Black, P. Devereux, and K. Salvanes, “From the Cradle to the Labor Market: The Effect of Birth Weight on Adult Outcomes,” *Quarterly Journal of Economics*, (2007), and H. Royer, “Separated at Girth: Estimating the Long-Run and Intergenerational Effects of Birthweight Using Twins,” *American Economic Journal: Applied Economics*, (2009).

¹¹ D. Almond, H. Hoynes, and D. Schanzenbach, “Childhood Exposure to the Food Stamp Program: Long-run Health and Economic Outcomes.”

¹² H. Hoynes and D. Schanzenbach, “The Food Stamp Program and Labor Supply.”

¹³ For a review of the research on the work disincentive effects of AFDC, see R. Moffitt, “Incentive Effects of the U.S. Welfare System: A Review,” in *Journal of Economic Literature* (1992).

¹⁴ H. Hoynes, M. Page, and A. H. Stevens, “Is a WIC Start a Better Start? Evaluating WIC’s Impact on Infant Health Using Program Introduction,” NBER Working Paper No. 15589, December 2009.

NBER Profile: *Pol Antràs*

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Antràs joined the Harvard economics faculty in 2003 as an Assistant Professor and was promoted to Professor in 2007. During 2007–9, he directed the NBER Working Group on

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In 2009, Antràs received the Fundación Banco Herrero Prize, which is awarded annually to a Spanish social scientist under age 40. He is also a Member of the Editorial Board of the *Quarterly Journal of Economics*, the *American Economic Review*, and the *Journal of the European Economic Association*.

Antràs lives in Belmont with his wife, Lucia, and his newborn daughter, Daniela. In his spare time, he enjoys traveling and following his beloved F.C. Barcelona.

