Research Statement
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My primary research goal is to evaluate child health programs using applied econometric tools to obtain reliable, well-identified, causal estimates of effects, and also to more broadly evaluate a variety of labor and social programs in a transparent and reproducible manner. I am interested in applying techniques such as regression discontinuity, instrumental variables, fixed effects models, and randomized controlled trials to learn the causal effects and cost effectiveness of health and policy interventions. My most recent research focuses on food price variation and the Supplemental Nutrition Assistance Program (SNAP, formerly the food stamp program) but I have also conducted research on labor-related topics such as the military labor supply. I also have extensive developing country research experience, working on randomized trials of deworming, scholarship programs, and water, sanitation, hygiene and nutrition interventions. My interests may be wide-ranging, but they show an ability to apply a variety of econometric techniques to explore important food, health, and social policy questions.

SNAP is one of the largest government assistance programs for the poor in the United States, with nearly 1 in every 7 Americans participating in the program and benefit payments exceeding 70 billion dollars in 2016. My research on SNAP benefits focuses on price differentials across the country. SNAP benefit levels are the same for 48 states, and are not adjusted for local food prices which vary widely. Nominally equitable policies can have drastically different effects given high or low local wages and prices. Albouy (2009) shows that the nominally equal rates of federal taxation across the country result in substantial penalties in high wage urban areas and subsidies for low wage rural areas. We investigate this issue through the lens of SNAP, as dramatic differences in local food prices across the country can generate wide variation in the *real* value, or purchasing power, of SNAP benefits.

I investigate the effects of this in three papers. The first maps the variation and determines what fraction of recipients can actually afford the bundle of food (the Thrifty Food Plan, or TFP) that SNAP benefits are designed to make affordable. The second (my job market paper) estimates the causal impact of SNAP benefits on child health outcomes using variation in food prices. The third paper, in progress, uses a different data set to estimate the causal impact of SNAP benefits on child and adult nutritional outcomes. This work is possible due to three successful grants application I wrote to the University of Kentucky Poverty Research Center and the National Bureau of Economic Research (with funding ultimately coming from the Economic Research Service of the USDA), and also requires use of restricted-access data from the Federal Statistical Research Data Center (FSRDC).

My first study provides unique policy-relevant evidence on the adequacy of SNAP benefits, using a new data set (the Food Acquisition and Purchase Survey, or FoodAPS) that allows us to match detailed information on households' income, SNAP benefits, and other characteristics, to information on the *local* food prices these households face. We measure SNAP adequacy by determining whether SNAP benefits (plus 30 percent of income) are sufficient for households to purchase the TFP, a food plan constructed by the USDA to represent a nutritious diet at a minimal cost. Weighing SNAP benefits against the local cost of purchasing the TFP is a relevant comparison because the national average price of the TFP is the basis for legislated maximum SNAP benefit levels. Household benefit levels are then set such that households should be able to purchase the TFP with benefits plus 30 percent of their net income (i.e., gross income minus allowed deductions).

One key finding is that the sufficiency rate – the fraction of households for whom benefits plus 30 percent of net income exceeds the local cost of the TFP – is in the range of 75 to 80 percent. That is, for 20 to 25 percent of SNAP-recipient households, local food prices are such that their SNAP benefits do not allow them to afford the TFP at the mean- or median-cost store in their area. This fraction is fairly stable across different geographic proximity measures. For instance, 77 percent of SNAP recipient shoppers can afford the TFP at the median-cost store within 2.5 miles, 78 percent at the median store in a 20-mile radius, and 79 percent can afford the TFP at the median cost store in their county. For the 20 to 25 percent of SNAP households for whom benefits are found to be insufficient, we also compute the average dollar shortfall between the cost of the TFP and SNAP benefits plus 30% of income. These households face average shortfalls of approximately $150 per month, relative to $230 in monthly benefits received and $560 in average monthly income.)

A second important result of our paper is that at an aggregate level, these dollar shortfalls for SNAP households who cannot afford the TFP could be completely eliminated by redistributing some benefits from households whose SNAP benefits are *more than* sufficient to afford the TFP. That is, sufficiency rates

of 100 percent could be achieved without any additional benefit expenditures, by adjusting SNAP benefits for geographic variation in food prices. Moreover, our findings indicate that policy makers could achieve this without detailed food price data at a very local level. That sufficiency rates do not change substantially when we measure TFP cost at the county level versus within two or three miles of the household suggests that adjusting benefits for food price variation at the county (or even state) level could dramatically improve the extent to which SNAP benefits allow recipient households to purchase the TFP.

Lastly, we investigate the potential effects of reducing SNAP benefits or decreasing eligibility by running simulations based on changes to the program proposed recently by the current administration and other policy makers. These include capping household size at six for the purpose of computing maximum benefits, and requiring able-bodied adults without dependents (ABAWD) SNAP recipients to work. These policies would not substantially reduce the *number* of eligible households, but the reduction of sufficiency rates among those who remain eligible is dramatic.

My second study provides evidence on the impact of variation in SNAP purchasing power on child health. Higher area food prices, and consequently lower SNAP purchasing power, may impact children's health by reducing nutrition if households respond by purchasing and consuming lower quantities of food, or if they purchase less expensive foods of lower nutritional quality. But lower SNAP purchasing power may also impact health indirectly, with higher food prices causing households to reduce consumption of other inputs into the health production function, like health care.

Linking restricted-access nationally representative data from the 1999-2010 National Health Interview Surveys (NHIS) to information on regional food prices from the Quarterly Food-at-home Price Database (QFAHPD), we study the effect of variation in SNAP purchasing power on children's health care utilization and health. The QFAHPD includes information on food prices that allows us to construct an estimated TFP price for each of 30 designated "market group" geographic area across the U.S. We relate various child health outcomes to the real value of SNAP benefits (i.e., the ratio of the national SNAP maximum benefit to the market group-level TFP price faced by a household) in a fixed effects framework that controls for a number of individual-level and region characteristics (including non-food prices in the area) and state policy variables. Identification comes from differences across the 30 market areas in trends in the price of the TFP.

Our study contributes to the growing body of evidence on the SNAP program and its effects in a few key ways. First, we provide new evidence on the relationship between SNAP benefit generosity and the health and wellbeing of the SNAP population. Our findings consistently indicate that children in market regions with higher food prices (lower purchasing power of SNAP) utilize less preventive/ambulatory health care. We find that a 10 percent increase in SNAP purchasing power raises the likelihood a child has an annual checkup by 6.3 percentage points (8.1 percent) and the likelihood of *any* doctor's visit by 3.1 percentage points (3.4 percent). While lower real SNAP benefits do not result in significant declines in reported health status, we document significant detrimental impacts on some health indicators, like the number of school days missed due to illness, as well as on children's food security. Summary indices contribute additional evidence to the existence of effects on health care utilization, but not health outcomes generally. We confirm that these effects are not driven by relationships between geographic variation in food prices and SNAP participation or health insurance coverage, nor are they present in a placebo sample of somewhat higher-income children.

More broadly, our findings point to sizeable, beneficial impacts of SNAP (and of increasing the generosity of SNAP benefits) for children's health care utilization, food security, and some measures of their health, benefits which should be weighed carefully against the cost savings of any proposed cuts to the SNAP program. These results also shed light on the expected impact of adjusting benefit levels to account for geographic variation in food prices across market regions. Such adjustments would likely reduce disparities in preventive/ambulatory care, school absenteeism, and food security among low-income children, but may not lead to immediate, contemporaneous improvements in other health outcomes.

My recent work is focused on domestic food policy and its effect on primarily children, but I have also worked extensively on evaluations in developing country settings, particularly health and education interventions in East Africa. I was part of a large team of economists and public health researchers evaluating a cluster randomized trial of water, sanitation, hygiene (WASH), and nutrition interventions, given alone and in combination. The study, funded by a grant from the Bill & Melinda Gates Foundation to UC Berkeley, was among the first WASH studies to obtain evidence from a randomized trial on the

effectiveness of rural sanitation programs, among the first powered to detect differences in objective measures of child health (such as height for age) instead of relying on caregiver reported data that is subject to courtesy bias, and among the first powered to detect differences between multiple health interventions done in concert and a single intervention alone. I designed and implemented smaller pilot studies that were used to design the main study, and resulted in papers published in the *American Journal of Tropical Medicine and Hygiene* and *BMJ Open.*

In addition to food and child health research, I am generally interested in doing transparent and reproducible policy research. I have conducted research on the military labor supply and a behavioral response to war deaths published in the *Journal of Economic Behavior and Organization.* More recently, during my time as a researcher for the Berkeley Initiative for Transparency in the Social Sciences and the Berkeley Institute for Data Science, I have worked extensively on meta-research and improving research reliability. I wrote a lengthy review, "Transparency, Reproducibility, and the Credibility of Economics Research" that is forthcoming in the *Journal of Economic Literature,* and am nearing completion of a textbook*, Transparent and Reproducible Social Science Research*, that is under contract with UC Press. I am also conducting original research on the causal impact of data sharing on citations (a plausible incentive for researchers to share their data, hopefully leading to more reproducible research), and have designed and will soon launch a representative randomized intervention survey of top social science researchers regarding reproducible research practices. In practice, I believe this experience will make my own applied research more reliable, and will help me to teach up to date reproducible programming and data science methods to my students.

I look forward to a career of continuing to learn new empirical tools, and applying them to further our understanding of child health and other social policies.