Peter Anderson

Department of Economics, University of Virginia
Website: petermichaelanderson.github.io
Email: pa7kd@virginia.edu | Phone: (865) 748-1153

RESEARCH STATEMENT AND AGENDA

My research sits at the intersection of public economics and applied econometrics. As a Ph.D. candidate at the University of Virginia, I have developed econometric and welfare frameworks that address fundamental challenges in evaluating public programs and that generalize across settings. I have applied these tools to evaluate causal effects of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) on infant feeding practices and societal welfare. My agenda centers on the welfare implications of in-kind transfers, the identification challenges in estimating causal treatment effects, and the trade-off between individual and societal welfare, often at the boundary with public health.

I.   The Causal Effect of WIC on Breastfeeding: Partial Identification under Misclassification of Treatment Assignment

I extend the regression discontinuity framework by developing a partial-identification approach that accommodates mismeasurement in the running variable and misclassification in treatment assignment. Bracketed reporting of the running variable complicates empirical designs, such as regression discontinuity designs (RDD), that rely on precise measurement of the forcing variable and unambiguous treatment assignment to leverage policy discontinuities as a source of local exogeneity. I apply this novel method to examine how participation in WIC—serving approximately half of all infants in the United States—affects breastfeeding initiation and duration among new mothers.

In contrast to conventional designs, my method does not require precise knowledge of the assignment variable, continuity of potential outcomes at the threshold, or locally exogenous treatment assignment. Instead, I impose minimal and empirically supported shape restrictions of two flexible forms: (1) sign restrictions and (2) slope-magnitude restrictions on the conditional expectation function. My insight is that observations far from the income eligibility threshold—where treatment status is known with certainty despite bracketed income—can be used to bound treatment effects near the threshold, where classification is uncertain. By restricting the slope of the conditional expectation functions across income, I extrapolate from regions with certain assignment to the local neighborhood around the cutoff. The resulting estimates are transparent, robust, and credible, even under measurement error.

Where prior work often cannot credibly identify the sign of the treatment effect, my shape-restricted partial-identification estimates indicate that WIC participation reduces both breastfeeding initiation and duration. Under weak and empirically grounded assumptions, I find that breastfeeding initiation declines by no less than 3 percentage points, and duration falls by at least 1 week. The estimated effects represent 60% and 44% of the observed difference between WIC participants and income-eligible non-participants for breastfeeding initiation and duration, respectively. These bounds are robust to a range of slope restrictions and remain negative even under conservative assumptions about the rate of change in outcomes across income levels.

II. Targeting with In-Kind Transfers and Fiscal Spillovers: Evidence from WIC

I quantify the welfare implications of in-kind transfers when there are fiscal spillovers for the government and non-beneficiary consumers. While the classic trade-off between improved targeting and price distortion from in-kind provision is well known (Nichols and Zeckhauser, 1982; Blackorby and Donaldson, 1988; Lieber and Lockwood, 2019), existing work typically abstracts from fiscal consequences outside the transfer itself. I incorporate two channels that shape the optimal subsidy: (1) direct fiscal effects from below-market procurement and (2) indirect fiscal effects from induced changes in market prices. This framework captures both the government's direct savings from rebates and the implicit tax on non-beneficiaries arising from price increases.

I apply this approach in the context of WIC's in-kind provision of infant formula. Under exclusive contracts with manufacturers, state agencies receive per-unit rebates for formula purchased with WIC benefits. These rebates—often exceeding 90% of the wholesale price—generate savings sufficient to support roughly one-fourth of all WIC participants (Davis and Oliveira, 2015). In isolation, I find that these manufacturer rebates imply an optimal subsidy near 100%; however, incorporating even modest indirect fiscal effects meaningfully reduces that rate.

III. In-Kind Provision of Reduced-Quality Goods: Fiscal Efficiency and Welfare Implications

I extend my welfare analysis of in-kind transfers to allow the transferred good to affect downstream outcomes. Beyond enabling targeting, the good can directly influence realized states, with implications for individual and public welfare. I capture these effects in the total fiscal cost of provision by adding an indirect-cost term γ that scales with consumption of the transferred good.

I implement the framework in the WIC context, focusing on infant formula. For tractability, I focus on early-childhood anthropometric outcomes (e.g., BMI z-score (BMIZ) and weight-for-height z-score (WHZ)). Using plausibly exogenous variation in infant feeding behavior generated by the 2009 WIC Food Package Revision and associated staff training, I provide evidence that an increased duration of breastfeeding reduces the risk of childhood obesity. I calibrate γ by combining this link with age-specific incremental healthcare expenditures for childhood obesity from Ward et al. (2021). Despite a strong connection to growth trajectories, the implied indirect costs from infant-formula are small relative to the transfer itself, reducing the optimal subsidy by only 5%.

IV. In-Kind Transfers and Intensive-Margin Participation Frictions: Evidence from WIC EBT

I examine how frictions along the intensive margin of program participation affect the realized value of public benefits. Using administrative data on extensive- and intensive-margin participation, I estimate the effect of electronic benefit transfer (EBT) introduction in WIC on program take-up and benefit redemption. I show that EBT has a sizable effect along the intensive margin, reducing average monthly benefit spending by about 8% of the pre-EBT mean and has no effect on food security score or the share of food insecure WIC participating households. This result may be rationalized by EBT's relaxation of constraints on the timing of benefit redemption, reducing the option value of food benefits but having minimal effect on underlying food consumption patterns. Before the transition to EBT, any benefits not utilized during a check redemption would be forfeited for the rest of the issuance period, creating uncertainty about the desirability of items and imparting an option value to each food benefit. EBT enables at-will redemption of benefits, eliminating this

source of uncertainty and associated option value, decreasing the value and redemption of food benefits.

V. Intended Future Work

On partial identification, my job market paper provides a platform to improve treatment-effect identification where conventional assumptions fail. As an initial extension, I will extend the approach to identify LATE away from the discontinuity—e.g., at counterfactual income thresholds. Of additional interest, I aim to deliver informative bounds on the average treatment effect (ATE) by shifting assumptions from observable conditional expectation functions to potential outcomes. I will characterize conditions under which assumptions linking potential outcomes to a running (forcing) variable yield bounds that are informative, especially in data environments where standard partial-identification tools (e.g., monotone treatment response/selection, monotone instrumental variables) struggle. Empirically, I plan to apply these methods to estimate treatment effects for WIC and the Supplemental Nutrition Assistance Program (SNAP) on health outcomes.

With respect to welfare evaluation, I will both extend my existing research into new policy domains and continue to expand the methodology. My current intention is to examine the in-kind provision of healthcare, particularly how optimal subsidy rates vary with beneficiary age. As a large share of U.S. public health spending occurs near the end of life, the normative implications of age-dependent subsidies remain an open question. At first glance, the moral hazard from the in-kind transfer of healthcare appears linked with recipient age, which in isolation implies an optimal subsidy rate responsive to age. The fiscal feedback on government budgets also appears linked to age through the tax-and-transfer system. While my current methodology can be applied directly, I will expand the framework to more convincingly capture the dependence of the realized state of the world—downstream health outcomes, market prices, and fiscal balances—on the receipt of the transfer.

References

Blackorby, Charles and David Donaldson, "Cash Versus Kind, Self-Selection, and Efficient Transfers," *American Economic Review*, 1988, *78* (4), 691–700.

Davis, David E. and Victor Oliveira, "Manufacturers' Bids for WIC Infant Formula Rebate Contracts, 2003–2013," Economic Information Bulletin EIB-142, U.S. Department of Agriculture, Economic Research Service October 2015.

Lieber, Ethan M. J. and Lee M. Lockwood, "Targeting with In-Kind Transfers: Evidence from Medicaid Home Care," *American Economic Review*, 2019, *109* (4), 1461–1485.

Nichols, Albert L. and Richard J. Zeckhauser, "Targeting Transfers through Restrictions on Recipients," *American Economic Review*, 1982, *72* (2), 372–377.

Ward, Zachary J., Sara N. Bleich, Michael W. Long, and Steven L. Gortmaker, "Association of Body Mass Index with Health Care Expenditures in the United States by Age and Sex," *PLOS ONE*, 2021, *16* (3), e0247307.