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## 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.

In the following sections, I summarize the papers in my dissertation, "**Essays on the Economics of In-Kind Transfers: Methods and Welfare Implications**," and then outline additional ongoing and future work.

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

In my job market paper, I extend the regression discontinuity framework by developing a partial-identification approach that accommodates mismeasurement in the running variable and misclassification in treatment assignment. I apply this method to examine how participation in WIC—the third largest federally funded nutrition program, 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, empirically grounded assumptions, initiation declines by at least 3 percentage points and, conditional on initiation, duration falls by at least 2 weeks. For initiation, this is roughly three-quarters of the observed difference between WIC participants and income-eligible non-participants; for duration, the estimates correspond to about 15 percent of average breastfeeding length among income-eligible mothers. 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

In this paper, I extend the framework of Lieber and Lockwood (2019) to quantify the welfare implications of in-kind transfers when there are fiscal spillovers for providers 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 movements.

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 wholesale price—generate savings sufficient to support roughly one-fourth of all WIC participants (Davis and Oliveira, 2015), though they may also increase market concentration. 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

In this paper, I extend the framework of Lieber and Lockwood (2019) 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 $\gamma$ 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 estimate that an additional week of exclusive breastfeeding reduces BMI Z-score (BMIZ) by 0.035 and weight-for-height Z-score (WHZ) by 0.033. I calibrate $\gamma$ by combining this causal 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

In this paper, I examine how frictions along the intensive margin of program participation affect the realized value of public benefits. Many programs are designed to shift behaviors and outcomes beyond household income; ignoring benefit usage can misstate participation costs and program impacts under both the neoclassical model of Nichols and Zeckhauser (1982) and the behavioral targeting framework of Bertrand et al. (2004); Deshpande and Li (2018).

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 redemp-

tion. 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. To study mechanisms and normative implications, I am in the process of collecting item-level issuance and redemption data. This data will allow me to assess the extent to which the redemption response reflects the price discrimination mechanism documented by Meckel (2020) rather than alternative channels.

### 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 hope to 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 hope to 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 hope to 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.

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