

ECONOMICS OF FOOD INSECURITY

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FOOD INSECURITY IN THE U.S. (2012)

- CPS (December Supplement) asks whether – over the past 12 months – households...
 - Worried food would run out
 - Ran out of food
 - Were unable to afford balanced meals
 - Reduced size/frequency of meals
 - Experienced hunger
 - Substituted limited number of low costs foods
 - Lost weight due to hunger
- Each household is assigned a food security status
- 14.5% of U.S. households (17.6 million households) were food insecure at some point during 2012
 - 8.8% with low food security
 - 5.7% with very low food security

OVERVIEW

- Determinants of Food Insecurity
- Time and Budget Constraints
- Causal Effects of Food Insecurity on Health Outcomes
- Impacts of Food Assistance Programs on Food Insecurity
- Policy Considerations

DETERMINANTS OF FOOD INSECURITY

- Income
 - 40.9% of poor households were food insecure during 2012
 - 6.8% of households with incomes above 185% of poverty line were food insecure during 2012
- Household composition
 - Households with children (especially those headed by a single woman (35.4%) or single man (23.6%) were more likely to be food insecure
- Race
 - White, non-Hispanic household w/children (16%)
 - Hispanic household w/children (27.2%)
 - Black, non-Hispanic household w/children (29.1%)
- Education level

TIME AND BUDGET CONSTRAINTS

- Utility Maximization Model
 - **Household happiness (utility):** depends on time allocation, weight, health, consumption of food (prepared/eaten at home), consumption of food (eaten away from home), consumption of non-food goods, perceived stigma
 - **Time constraint:** 24 hours of time can be spent: sleeping, eating, engaging in (sedentary or active) leisure, working, commuting/travelling, performing household chores (including shopping, preparing food, etc.), or applying for food stamps or other transfer programs
 - **Budget constraint:** Total spending on food and nonfood goods/services (including medical services) must be less than or equal to income

TIME CONSTRAINT

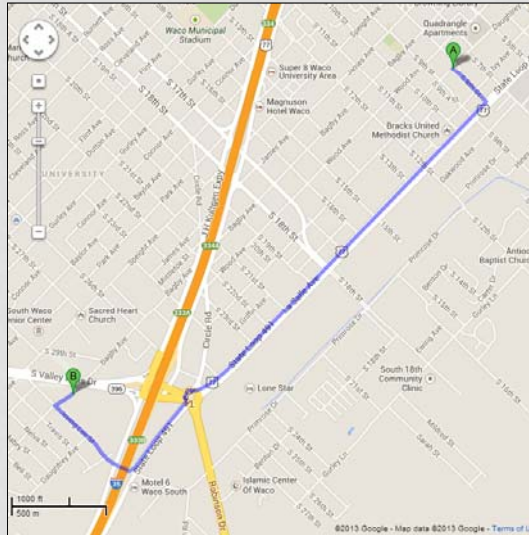
- Full “cost” of a good is the opportunity cost of purchasing the good
 - Observable market price
 - Travel time
 - Shopping time
 - Preparation time
- Households overcome tightening of time constraints by substituting more goods for less time

POVERTY AND TIME USE

Example: Grocery Shopping in a Food Desert

Round Trip:
12th & Daughtery to HEB

- Car: 14 minutes
- Walk: 75 minutes
- Bus: 59 minutes



BUDGET CONSTRAINT: CURRENT INCOME ISN'T THE WHOLE STORY

- **Households needs include food, housing, clothing, medical care, etc.**
- **Income volatility**
 - Average monthly income is an important determinant of food security
 - Low income households also experience greater income volatility (e.g., job loss, hours/pay reduction) and are more vulnerable to other income shocks (e.g., spouse leaving)
- **Limited assets**
 - Home ownership
 - Liquid assets
- **Liquidity constraints (restricted access to credit)**
- **Macro fluctuations affect income, asset poverty, access to credit**
 - Changes in unemployment rates correlate closely with changes in food insecurity rates
 - Asset poverty rate increased from 16.1% to 19.6% between 2007-2010

CAUSAL EFFECTS OF FOOD INSECURITY ON HEALTH OUTCOMES

Health outcomes are correlated with food insecurity

- Overall health
- Overall physical health
- Overall mental health
- Behavioral problems
- Birth defects
- Anemia
- Nutrient intakes
- Cognitive problems
- Aggression
- Anxiety
- Depression
- Oral health
- Chronic disease
- Hospitalization
- Limitations of daily activities
- Obesity

CAUSAL EFFECTS OF FOOD INSECURITY ON HEALTH OUTCOMES

Correlations or causality?

- Food insecurity most likely causes poor health... But, it's likely that poor health also causes food insecurity.
 - E.g., ADL limitations
 - E.g., Diabetes
- Unobservable factors influence both food insecurity and health outcomes.
 - E.g., Dysfunctional families
 - E.g., Homelessness
 - E.g., Alcohol and Drug Abuse

IMPACTS OF FOOD ASSISTANCE PROGRAMS ON FOOD INSECURITY

- Food insecurity is more prevalent in households enrolled in SNAP than in other low-income households (even after controlling for many factors)
- Some of these “puzzles” can be explained by selection effect:
 - No counterfactuals exist
 - SNAP participants likely differ from non-participants in unobservable ways
 - E.g., actual food needs, cost of food, other demands on household resources, informal sources of support

IMPACTS OF FOOD ASSISTANCE PROGRAMS ON FOOD INSECURITY

- **Nord and Golla (2009) look at monthly survey data**
 - Prior to first SNAP receipt, households experience deteriorating food security
 - In the first few months following first SNAP receipt, the prevalence of very low food security declines substantially
- **Kabbani and Kmeid (2005) limit sample to households with very low food security at some point in the previous year**
 - Households that received higher SNAP benefits in the previous month were less likely than those that received lower benefits to have very low food security in that time
- **Differences in state/county policy variables can be used to identify the causal effects of SNAP**
 - Food insecurity worsened among immigrant populations whose access to public assistance was impeded in the mid-1990s (Borjas 2004)
 - Food insecurity was less prevalent in states with higher SNAP participation rates (Bartfeld et al. 2006)

POLICY CONSIDERATIONS

- Transaction costs of food acquisition (and time costs of food preparation) must also be considered when developing nutrition interventions (e.g., types of foods, benefit delivery)
- Coping mechanisms matter: "Food security does not indicate an absence of need."
- Improved access to credit for low-income persons might help households maintain food sufficiency/security
- Reduction in medical expenditures could be an important benefit of nutrition programs
- Empirical estimates of nutrition program effects must be considered carefully