

The Effect of SNAP and NSLP on Food Insecurity: Implications for Canada

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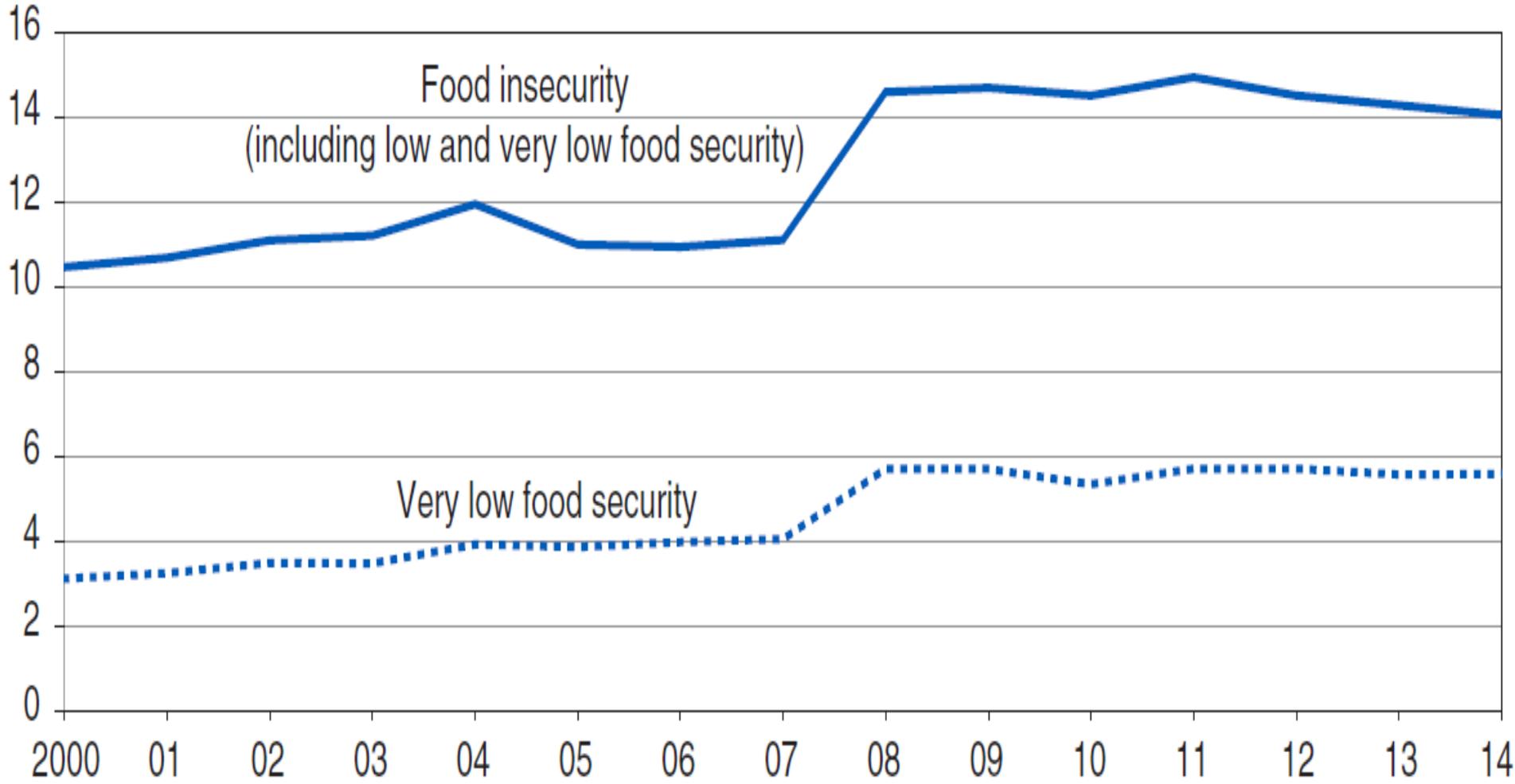
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Defining Food Insecurity

- A household's food insecurity status is based on responses to 18 questions in the Core Food Security Module (CFSM)
- Examples of questions:
 - “I worried whether our food would run out before we got money to buy more”
 - “Did you or the other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food”
 - “Were you ever hungry but did not eat because you couldn't afford enough food”
 - “Did a child in the household ever not eat for a full day because you couldn't afford enough food”
- Categories
 - U.S.
 - food insecure if have 3 or more affirmative responses
 - Canada
 - food insecure if have 2 or more affirmative responses to child questions or 2 or more affirmative responses to adult questions

Percent of households



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey Food Security Supplement.

Supplemental Nutrition Assistance Program (SNAP)

- Primary goals are to alleviate hunger and improve the well-being of poor people
- USDA issues food stamps to families (via Electronic Benefit Transfer (EBT) cards) which can be used in retail food outlets
- Benefit levels
 - function of income and family size
 - maximum benefit level is almost \$650 for a family of four
 - average benefit level is about \$288 for a family of four
- Size of program
 - serves about 47 million persons
 - total expenditures of around \$74 billion

SNAP

- Eligibility Criteria
 - Gross income test
 - Gross monthly income less than 130 percent of the poverty line
 - higher in some states
 - Net income test
 - Net monthly income (after various deductions) less than the poverty line
 - Asset test
 - Less than \$2,000
 - waived in many states
- Reasons for non-participation
 - Stigma
 - Transactions costs
 - Low benefit levels

National School Lunch Program (NSLP)

- Serves over 30 million children every day during the school year
- Expected to have a positive impact on the well-being of children
 - Lunch is provided
 - Guidelines for lunches
- Eligibility Criteria
 - Income
 - Free if household income is less than 130% of the poverty line
 - Reduced price (40 cents) if household income is between 130% and 185% of the poverty line
 - Full price if household income is above 185% of the poverty line
 - Must attend a school with NSLP

Treatment Effects

- Average Treatment Effect (ATE)

$$ATE(1,0) = P[FI(S^*=1)=1] - P[FI(S^*=0)=1]$$

FI=1 if a child is in a food insecure household, 0 otherwise

$S^*=1$ if a child truly receives food assistance benefits, 0 otherwise

- Need to address
 - Selection into food assistance
 - Misreporting of receipt of food assistance

Placing Bounds on ATE

- Monotone Treatment Response (MTR)

$$FI(S^*=0) \geq FI(S^*=1)$$

- Monotone Treatment Selection (MTS)

$$P[FI(S^*=1)=1 | S^*=0] \leq P[FI(S^*=1)=1 | S^*=1]$$

and

$$P[FI(S^*=0)=1 | S^*=0] \leq P[FI(S^*=0)=1 | S^*=1]$$

Placing Bounds on ATE

- Monotone Instrumental Variables (MIV)
 - Income/poverty line (v_1)

$$u_1 < u < u_2 \Rightarrow$$

$$\begin{aligned} P[\text{FI}(S^*=1)=1 \mid v=u_2] &\leq P[\text{FI}(S^*=1)=1 \mid v=u] \\ &\leq P[\text{FI}(S^*=1)=1 \mid v=u_1] \end{aligned}$$

and

$$\begin{aligned} P[\text{FI}(S^*=0)=1 \mid v=u_2] &\leq P[\text{FI}(S^*=0)=1 \mid v=u] \\ &\leq P[\text{FI}(S^*=0)=1 \mid v=u_1] \end{aligned}$$

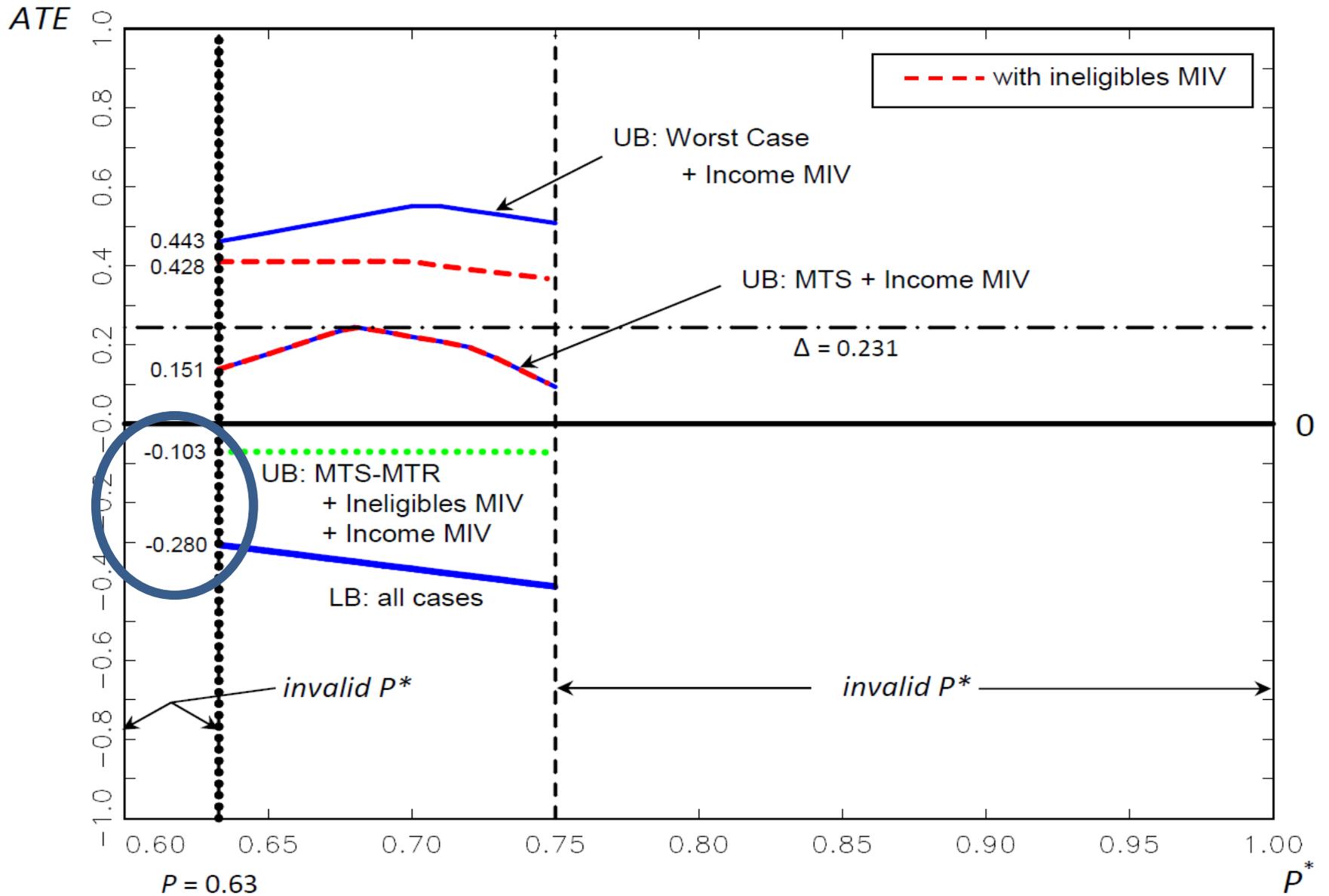
- Income ineligibility (v_2)

$$P[\text{FI} = 1 \mid v_2 = 1] \leq P[\text{FI} = 1 \mid v_2 = 0]$$

Assumptions on Reporting Errors

- Arbitrary Errors
 - No assumptions are made about the patterns of misreporting
- No False Positives
 - Assume that reporters of participation in SNAP or NSLP are accurate reporters for either program

Verified if Reporting either SNAP or NSLP Participation



SNAP in Canada

- If SNAP was implemented in Canada, would we see a decline in food insecurity?
 - probably
 - sign of effect
 - potential differences in magnitudes
 - slightly different demographics
 - eligibility criteria may differ
 - participation rates may differ

Figure 2C. National School Lunch Program, Age 6 to 18, Canada Food Insecurity:

Verified if Reporting either NSLP or SNAP Participation

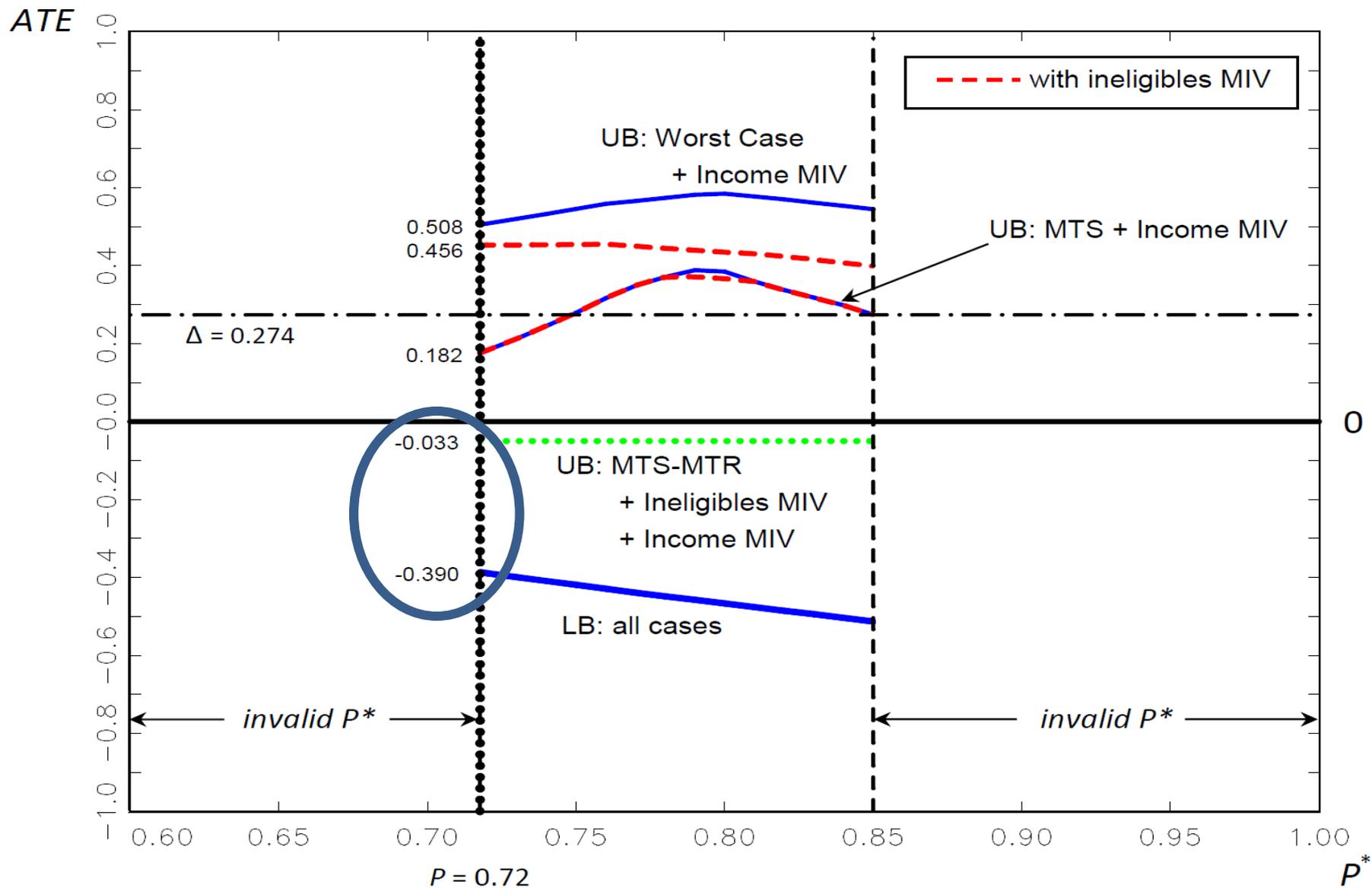
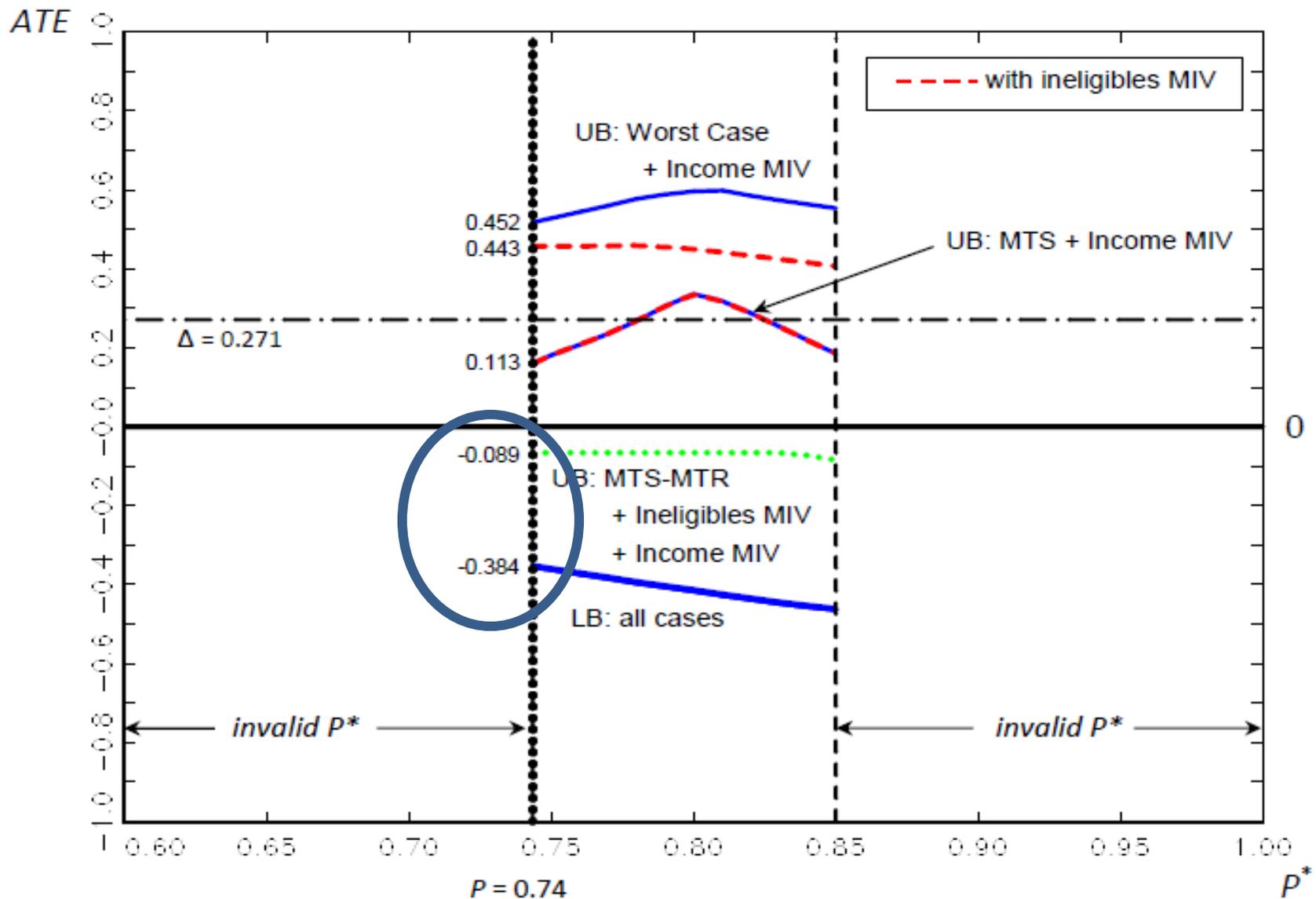


Figure 2C. National School Lunch Program, Age 6 to 13, Canada Food Insecurity:

Verified if Reporting either NSLP or SNAP Participation



NSLP in Canada

- If NSLP was implemented in Canada, would we see a decline in food insecurity?
 - probably
 - sign of effect
 - similar magnitudes
 - lump sum program
 - well-directed

	Food Insecurity Rate	Potential Decline in Food Insecurity due to SNAP	Potential Decline in Food Insecurity due to NSLP	Projected Food Insecurity Rate
Lower Bound				
All Children with Incomes Under 130% of the Poverty Line	22.2%	19.7%		17.8%
Children between the Ages of 6 and 17 with Incomes Under 185% of the Poverty Line	17.3%		6.6%	16.2%
Children between the Ages of 6 and 17 with Incomes Under 185% of the Poverty Line	18.9%		17.8%	15.5%
Upper Bound				
All Children with Incomes Under 130% of the Poverty Line	22.2%	53.6%		10.3%
Children between the Ages of 6 and 17 with Incomes Under 185% of the Poverty Line	17.3%		78.0%	3.8%
Children between the Ages of 6 and 17 with Incomes Under 185% of the Poverty Line	18.9%		76.9%	4.4%

Participation Rates in Canada

- Likely participation rates?
 - quite high in other programs
 - may have similar procedures for SNAP and NSLP
 - but, SNAP or NSLP programs would be new
- If participation rates are nearly 100%, estimates would likely be within established bounds
- Consider cases, though, when participation rates are lower
 - use mixing methods
 - allow for estimates of impact of differential take-up rates