Comments on

"Are Anti-drug Programs Affecting Productivity? The Case of Coca Leaf Producers in Colombia" by Sandra V. Rozo

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Outline

- Summary of the Paper
- Nice Aspects of the Paper
- Comments/Suggestions
- Potential Extensions

Summary of the Paper

- The paper estimates the effect of the aerial spraying program—a main component of anti-drug policies in Colombia—on the productivity of coca leaf producers.

- The author uses the proximity to protected areas as an instrument to address the endogeneity problem.
  - Producers choose locations with the highest productivity in the absence of aerial spraying. Through satellite images of coca crop, aerial spraying targets the most productive producers.
  - By explicit government mandate, aerial spraying is forbidden in protected areas. Producers near or at these areas face lower probabilities of being sprayed.

- By employing a 2SLS estimator, the author finds significant negative effects on three proxy variables of productivity in the short run, though no significant effects in the long run.

Nice Aspects of the Paper

- The paper contributes to the existing literature studying the effects of anti-drug policies on coca production by providing empirical evidence to characterize the behavior of coca leaf producers at the micro level.

- The author documents the importance of evaluating the effect of the aerial spraying program implemented in Colombia.
    - Examining the aerial spraying program may also help explain a price puzzle in the global market of coca.

Nice Aspects of the Paper

- To address the endogeneity problem, the author constructs a multi-valued instrument as the distance of each producer to his or her nearest protected area.
  - Graphical evidence is shown that the proximity to protected areas affects the probability of being treated.
  - The exclusion restriction is argued by a huge variation in geographical characteristics of protected areas.
- The author also tests the endogeneity issue, the possibility of weak instrument and the potential measurement error.

Is Proximity a Legitimate Instrument?

- One potential threat may be that some producers could take advantage of the legal restriction and choose locations near protected areas.
  - Do producers relocate?

- If data provides information on producers who change locations or who are new in coca production, a robustness check for the potential threat may be possible (as in Card, 1995):
  - The interaction of this dummy variable and the proximity is used as an instrument for spraying, and the proximity is included in both the treatment and outcome equations.
  - If there is no significant "*direct*" effect of the proximity on productivity, then this concern is reduced.

Assumptions of the Model

- Is there any omitted variable bias under the current *unconfoundedness* assumption?
  - One omitted variable may be the experience in producing coca. Experienced producers may employ more effective ways than beginners to minimize the negative effect of spraying.

- To detect neglected nonlinearity, Ramsey's (1969) Regression Equation Specification Error Test (RESET) may be tried.

Potential Extensions

- May apply the local instrumental variable estimator (Heckman and Vytlacil, 2000)
  - By imposing a latent index model on the treatment, the local IV estimator can be used to estimate ATE, $ATE_{T=1}$, and $LATE$ under full support conditions. When support conditions fail, these parameters can be bounded.
- May focus on producers around the border of protected areas
  - If data shows discontinuity in the outcome and in the probability of being treated at the border, fuzzy discontinuity design may be applicable.