Discussion of "Margins of adaptation to water markets" by Lucy Hackett

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Summary: Setup

Analyzing margins of adaptation/reaction to market for water rights.

Setting:

- Chile agricultural irrigation
- 3 high-value fruits
- water rights separated from land
- water rights only bind after municipality is declared a **restricted zone**

Margins of choice for farmers:

- Reduce output/land use (extensive margin)
- Substitute to more capital in production
- Switch to less water-intensive crop

Summary: Model

Model:

- crop production: $q_c = A_c \; f(I, L; c)$
- irrigation CES function of water and capital
- profit-maximizing:
  choose crop c, ground water W^g or surface water W^s, capital K
- Choose *either* ground water or surface water (perfect substitutes)
- increased water price $\Longrightarrow$ decreased water usage by rights holder
- increased water price $\Longrightarrow$ ambiguous sign of capital change

Identifying Variation:

- Municipalities with/without restrictions on new water rights
- 5-year lag of weather as IV (*nice IV placebo test*)

Summary: Results

- ☑ Restrictions increase water rights' transactions
- ☐ Shifting to capital? (precision)
- ☐ Shifting to less water intensive crops? (precision)
- ☑ Robust to learning, speculation/anticipation, and sample selection

Comment on the model

The model gives intuitive results for water use:

- price increases for a resources I own $\implies$ I will consider selling it to someone
- price increases for a resource I am buying $\implies$ I will buy less of it

But:

- No model parameters are estimated.
- Does not say anything about shifting between surface and ground water given different extraction costs. Brings up more questions.

Options:

- Epirics are thorough: intuition could be stated without the model
- Make stronger connections with which parts of the model/comparative statics are being estimated
- Use IO tools? (discrete choice $\rightarrow$ counterfactuals?)

Overall: Done & Left to do

- ☑ Important Question: water rights/price in the face of water scarcity
- ☑ Really interesting setting: water rights disconnected from land?!
- ☑ More geographically representative than previous studies
- ☑ Results build intuition for farmer's reaction to water pricing
- ☑ "Regression of interest" vs IV discussion

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- ☑ Important Question: water rights/price in the face of water scarcity
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- ☑ Results build intuition for farmer's reaction to water pricing
- ☑ "Regression of interest" vs IV discussion
- ☐ Statistically significant (more fruit?)
- ☐ Generalizable to other contexts? (more discussion needed)
- ☐ Disentangle short-run / long-run margins for change? (more discussion needed)