Timing in Commodity Marketing: How Do Producers Decide the “Right” Moment to Price Their Crop?

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### Introduction

Agricultural economists have long been interested in how producers make marketing decisions and what variables influence the decision-making process. Previous studies in grain marketing found evidence that (i) producers would sell (hold) grain after price increases (decreases), (ii) seasonality and day of the week play a role in the timing of a marketing decision, and (iii) decision to sell or hold can be related to market prices being above or below a certain benchmark. Still, relatively little work has investigated how producers choose the “right” time to sell.

### Objective

- To explore variables that affect the timing of producers’ marketing decisions
- To investigate whether wheat producers in Canada are more eager to sell when:
  - current price is above their benchmark
  - market price is trending up
  - market volatility increases

### Research method

Cox proportional hazard model is used to model the time it takes for producers to sell their crop within the marketing window.

- hazard rate: probability of selling grain on day t, conditional on not having sold it until that day

Hazard rate \( h(t) \) is modeled as:

\[
h(t) = h_0(t) \exp(\beta_0 \times \text{GL} + \beta_1 \times \text{Spread} + \beta_2 \times \text{trend} + \beta_3 \times \text{volatility} + \sum \beta_j \times D_j)
\]

**Covariates:**

- GL: gain indicator = 1 if contract price > benchmark (PRO)
- spread = difference between futures price and benchmark (PRO)
- trend = futures price trend
- volatility = futures price volatility
- days of work = dummy variables (Tuesday through Friday)

### Wheat marketing in Canada (until 2012)

- All wheat producers had to market their crop through the Canadian Wheat Board (CWB)
- Western Canada (96% of national production)
- CWB offered different marketing programs
  - pool pricing (default program)
  - marketing contracts (Producer Payment Options–PPO)
    - Fixed Price Contract (FPC)
    - Basis Price Contract (BPC)
    - Daily Price Contract (DPC)
  - Early Payment Option (EPO)

### Data

- Sample of 59,184 transactions (17,338 producers)
  - 3 marketing contracts (FPC, BPC, DPC)
- See below prices and quantity sold each day of the marketing windows for, respectively, FPC, BPC, and DPC

### Results

- Estimated coefficients generally indicate same effects across contracts
- Conditional probability of selling grain on day 1 increases when:
  - current futures price is above benchmark (C4=1)
  - 10-day price spread is negative
  - market price is trending up
  - market volatility is increasing

### Conclusions

- Impacts of gain indicators, price spread, price trend and volatility are qualitatively the same across contracts when all transactions are considered
- Results indicate importance of reference prices in marketing decisions
- Future research:
  - investigate other factors that affect marketing decisions
  - explore other benchmarks

### For further information

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