Quality choice, competition and vertical relationship in a market of protected designation of origin

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Introduction

- Label for geographical indication – Protected Designation of Origin (PDO)
  - all stages of production must take place in a specific area
- Does a quality labeling policy have an impact on the decline in agricultural production?
- Both **farmers** and **processors** in a specific geographical area are involved in the development of a PDO

- Incentives of farmers and processors to provide high quality PDO good?
- How will the vertical relationship between farmers and processors affected the quality of a PDO good?
- Model of PDO supply chain
  - Farmers provide raw materials to processing firms
  - Processors produce final goods

- Depending on the structure of technology **cost** and **demand** characteristics, farmers' and processors' choice of quality might not be aligned

- Farmers prefer high quality if
    - demand for PDO is relatively inelastic
    - or in the case of decreasing return to scale

- When farmers and processors have conflicting incentives, bargaining power of farmers is important in the negotiation process

The model

- In a given geographical area
  - n (many) **identical** farmers face demand $p(X, \beta)$
  - m (a few) **identical** producers $p(X)$
- X quantity of PDO good
- β level of quality that only affects farmers
- $C(q, \beta)$ cost of production of farmers ($C_\beta > 0$, $C_q > 0$, $C_{qq} > 0$)
- w price of raw input

The model

- Timing – 3 stage game
  - 1. choice of β – Nash Bargaining Solution
  - 2. Processors choose x_i simultaneously (Cournot Competition)
  - 3. Farmers choose q (Perfect Competition)

The model

- Each farmer chooses q such that $w = C_q(q, \beta)$
- Equilibrium quantities of processors depend on 2 effects
  - oligopoly power effect
  - oligopsony power effect
- Choice of quality

Discussion

- Very general model – general demand and cost functions
  - Difficult to conclude because effects are going in both directions
  - Why not consider a linear demand and quadratic cost functions framework from the start?
- Quality standard affects aggregate profit of processors
  - Why not look at how quality standard affects individual profit?
  - An increase in β could create differentiation in farmers products...

Discussion

- Bargaining process
  - With many firms there might be a high bargaining cost associated
  - There can be a transfer between farmers and processors
- Welfare analysis
  - Total welfare?
  - Consumers?