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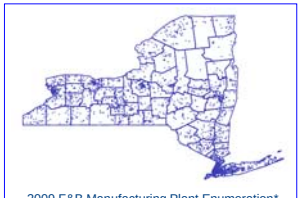
Introduction

- Food and beverage (F&B) manufacturing is an increasingly important source of total NYS manufacturing output and employment growth.
- A strong F&B manufacturing sector benefits local agricultural producers.
- Wide diversity of NYS F&B establishments by size, location, sector, and marketing channels utilized.
- Over 4,000 F&B establishments in NYS, over half of which are firms with no employee payroll (US Census Bureau).
- Renewed interest by policymakers in upstate economic development and agriculture-based manufacturing investment.

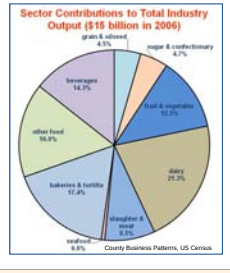
Study Objectives and Contributions

- Conduct plant-level enumeration and survey of F&B manufacturers in NYS to identify: input procurement and sales distribution areas, business environment factors on firm performance, and firms' past and predicted revenue growth.
- Examine Influence of firm, market, and spatial factors on growth of F&B manufacturing establishments.
  - ✓ Previous studies have largely focused on changes in the aggregate number of establishments over time.
  - ✓ We specifically account for market access and agglomeration effects in upstream (farm), downstream (wholesale/retail/foodservice), and within-stream (F&B manufacturing) markets
- Identify implications for firm-level and policy-oriented strategies to improve firm performance and enhance industry competitiveness.



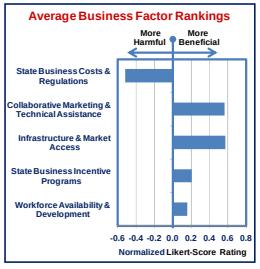
2009 F&B Manufacturing Plant Enumeration*

** Using purchased and publicly-available databases, 4,302 plants were identified; after deleting firms no longer in operation or returned as undeliverable, net count of plants surveyed was 3,684.*

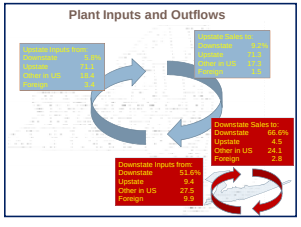


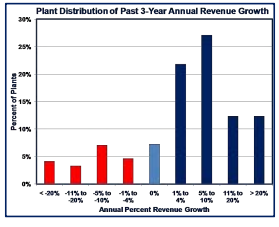
Plant Survey

- 482 complete surveys returned (13%); lowest response from bakery (3%) and other food (7%) plants; highest response from dairy (21%), meat (24%), and beverage (29%) plants.
- Rated 23 *business environment factors* on a 5-category Likert scale. Principal components analysis used to reduce to 5 aggregate factors.
- Inter-regional input procurement and sales distribution among *upstate and downstate regions* were generally quite limited.



- Average annual growth (past and future) varied considerably across plants.





Modeling Drivers of Manufacturing Growth

Plant Characteristics
- Age, Size
- Industry Sector

Market Characteristics
- Population Size, Density, Growth
- Labor Supply, Cost, Education
- Infrastructure, Fiscal
- Rural / Urban

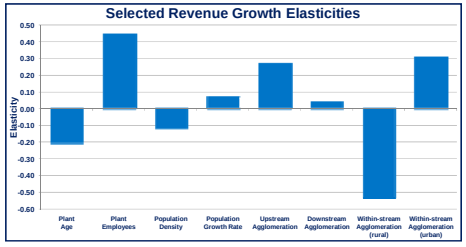
Agglomeration & Firm Clustering
- Input Suppliers (upstream)
- Output Buyers/Consumers (downstream)
- Like Establishments (within-stream)

→ **Plant Growth**

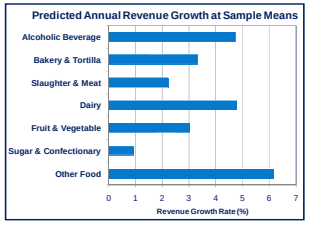
- **Dependent Variable:** average revenue growth 2006 – 2008
- **Independent Variables**:
  - ✓ **Plant:** age, number of employees, commodity sector
  - ✓ **Labor Supply (County):** manufacturing wage, education
  - ✓ **Population (County):** population density, population growth rate, rural/urban
  - ✓ **Agglomeration (County):** agriculture receipts per capita, % establishments in F&B manufacturing, F&B wholesale/retail/service establishments per capita
- **Modeling Approach:**
  - ✓ Statistically test Ordinary Least Squares and Two-Stage Least Squares
  - ✓ Instrumental Variable approach for within-stream firm clustering variable

Empirical Results

- Younger firms and larger firms had higher growth rates.
- Population growth (density) positively (inversely) related with plant growth.
- Higher levels of agriculture production beneficial to plant growth; higher concentration of downstream firms had little effect on growth.



- Within-stream firm clustering reduced revenue growth in rural counties, but was more beneficial in urban counties.
- Labor force factors largely insignificant, except for negative wage effects in alcoholic beverage sector (e.g., seasonal labor demand in grape harvest).



- All else held constant at sample means, other (specialty) food (6.2%), alcoholic beverage (4,7%), and dairy (4.8%) processors had the highest growth rates.
- Slaughter & meat (2.2%) and sugar & confectionary (0.9%) processors had the lowest rates of growth.

Implications & Conclusions

- Lower growth rates for more established (older) firms may highlight a priority cohort addressing firm retention.
- Higher growth for larger firms may indicate capital constraints for smaller firms looking to expand operations.
- Nearness to markets is highly beneficial; local agricultural production and growing population centers are associated with larger rates of revenue growth.
- Negative population density effects and limited downstream cluster benefits may indicate constraints within urban areas due to non-manufacturing activities that congest infrastructure.
- Concentrations of F&B manufacturers in *rural areas* may face negative competition effects that are more substantial than agglomeration benefits.
- As further interest in 'local' food systems develops, these implications to the F&B manufacturing sector will become increasingly important to consider.