

Comparative Effects of Animal Agriculture on Real Estate Values

Dr. Glynn Tonsor
Dept. of Agricultural, Food, and Resource Economics
Michigan State University

Balancing Animal Agriculture and Communities
February 29, 2008

Economic Principles

- In real estate, every case is unique
 - “Location, location, location”
 - Exclusion of key impacts can impact hedonic modeling results
- Factors of potential positive influence on real estate:
 - Increasing demand via new jobs
 - Increased local tax base
- Factors of potential negative influence on real estate:
 - Increased sales of homes near new animal operation
 - “Quality of life concerns” may reduce demand

Ready and Abdalla

American Journal of Agricultural Economics; May 2005

- Data: 8,090 home sales in PN, 98'-02'
- Key Findings:
 - Airports, Landfills, and Mushrooms decrease values
 - Open space increases values:
 - Open space/animal agriculture: omitted variable issue
 - Agricultural operations decrease values
 - Impacts limited to homes within 1 mile
 - Homes w/i ½ mile: poultry, swine, and beef/dairy have - 5.8%, -3.0%, and -0.5% impacts, respectively
 - Species effects are not significantly different
 - Impacts of large are less than medium-sized facilities

Herriges, Secchi, and Babcock

Land Economics; Nov. 2005

- Data: 1,145 home sales in north central IA, 92'-02'
- Key Findings:
 - Impacts highest for moderate sized operations
 - Suggest size is proxy for facility age and manure storage/mngt
 - Price impacts:
 - Most negative for homes nearest to a facility upwind in summer
 - Impacts decline with distance from facility
 - New facility placement:
 - Only significant if placed w/i $\frac{1}{4}$ mile and upwind of home and moderate in size: -14% to -16%; 0% otherwise
 - If moderate sized, upwind operation is $\frac{1}{2}$ mile away: -8% to -9%
 - If 1 $\frac{1}{2}$ miles away: 0%

Palmquist, Roka, and Vukina

Land Economics; Feb. 1997

- Data: 237 home sales in SE NC, 92'-93'
- Key Findings:
 - Building a 2,400 head swine finishing floor within 0-½ or 1-2 miles reduces prices by 4.75% and 0.56%
 - Effect of a new operation is larger where initial hog population is low:
 - As an area increases in hog population, impacts of additional facilities are reduced.

Conclusion 1:

Impacts decline with distance & vary by wind

- Ready & Abdalla (PA, 98'-02' data, n=8,090):
 - -6.4% to -1.6% for homes w/i 500 & 1,200 meters, respectively
- Palmquist et al. (NC, 92'-93' data, n=237):
 - -4.75% to -0.56% for homes w/i ½ mile & 2 miles, respectively
- Herriges et al. (IA, 92'-02' data, n=1,145):
 - New facilities upwind w/i ¼ mile: -14% to -16%
 - New facilities downwind or w/i 1½ miles: not significant

Conclusion 2:

Impacts may be negative, zero, or positive

- Ready & Abdalla; Palmquist et al.: ≤ 0
- Taff et al. (MN, 93'-94' data, n=292): ≥ 0
 - 6.6% average increase in value

Conclusion 3:

Impacts not necessarily increasing with size

- Ready & Abdalla
 - Impacts largest for medium-sized operations
- Herriges et al.
 - Impacts not significant for larger facilities
- Management and age of facilities may be more influential than facility size:
 - For example: largest facilities are relatively new with liquid manure storage while moderate-sized facilities are more likely to be older and use lagoon storage

Conclusion 4:

Impacts may decline as area becomes more saturated with livestock

- Palmquist et al.:

- Effect of a new operation is larger where initial hog population is low:
 - As an area increases in hog population, impacts of additional facilities are reduced.

Conclusion 5:

Impacts may be positive on surrounding farmland valuations

- Huang et al. (IL, 79'-99' data, n=64,000)

Summary Slide

- Each case truly is unique, be careful with “rules of thumb” statements
- Key factors:
 - Distance and wind direction
 - Size/management interface
 - Existing use of land

Tonsor's website includes these slides:

<http://www.msu.edu/user/gtonsor/>