Economic Impact Analysis

of the

Hog Production Industry

in

Jay and Randolph Counties
Agriculture in Concert with Regional Economics (ACRE)

Why did Ball State seek this project?
- Incendiary and divisive public dialogue
- Lack of unbiased data
- Co-opting of county plan commissions as environmental courts
- Economic development implications
- Ball State land use planning expertise
Agriculture in Concert with Regional Economics (ACRE)

Unique University Resources

- Office of Building Better Communities’ economic development experience
  - Economic analysis capability
  - Applied IMPLAN modeling software
- Dept. of Urban Planning land use experience
  - Zoning and planning analysis & recommendations
Agriculture in Concert with Regional Economics (ACRE)

Project Scope

- Economic impact analysis
- Comprehensive plan and zoning ordinance review and recommendations
- Review and recommendations regarding locally available incentives
- Other duties as requested
  - Review literature on residential land value impacts
  - Review county’s hog capacity
Strengths and Weaknesses of IMPLAN

**Strengths**
- Good tool for impact analysis
- Captures direct, indirect, and induced effects
- Detailed and reliable data
- Good for regional analysis
- Captures backward and forward linkages
- Price of software and datasets.

**Weaknesses**
- I-O model cannot quantify impacts of changes in relative price, technology, trade relations, or demographics.
- Full-time and Part-time workers are not separated.
- Regional trade relations based on the national structure and can be inaccurate or outdated.
- Limited number of sectors.
Agriculture in Concert with Regional Economics (ACRE)

Other Data Sources

- Indiana Department of Environmental Management
  - CAFO and CFO permit applications
- US Department of Agriculture
  - National Agricultural Statistics Service/Census of Agriculture
- US Department of Labor
  - BLS – Census of Employment and Wages (including suppressed data)
Agriculture in Concert with Regional Economics (ACRE)

Other Data Sources (cont’d)

- University of Missouri – Columbia
  - Extension Service
- Indiana University
  - Indiana Business Research Center
- JBS United/JBS Feeds
  - Survey of producers
### Key Economic Impact Analysis Findings

<table>
<thead>
<tr>
<th>2007 Estimates</th>
<th>Randolph County</th>
<th>Jay County</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAFO/CFO Inventory</td>
<td>185,848</td>
<td>262,000</td>
</tr>
<tr>
<td>growth *</td>
<td>193%</td>
<td>90%</td>
</tr>
<tr>
<td>Direct output</td>
<td>$ 49.6 million</td>
<td>$ 38.5 million</td>
</tr>
<tr>
<td>Total output</td>
<td>$ 61.8 million</td>
<td>$ 46.8 million</td>
</tr>
<tr>
<td>Local inputs</td>
<td>$ 8.8 million</td>
<td>$ 6.4 million</td>
</tr>
<tr>
<td>percent local growth *</td>
<td>21.5%</td>
<td>19.2%</td>
</tr>
<tr>
<td>2003</td>
<td>298%</td>
<td>93%</td>
</tr>
<tr>
<td>Dominant types of hog farms</td>
<td>piglets and nursery pigs</td>
<td>finishing hogs</td>
</tr>
<tr>
<td>*Base year</td>
<td>2003</td>
<td>2004</td>
</tr>
</tbody>
</table>

*Base year
### Key IMPLAN Analysis Results

#### 2007 Estimates
- **Output**
- **Employment**
- **Income/worker**
- **Proprietary income**
- **Local inputs**
- **Multipliers**
  - Output
  - Employment
- **Dominant types of hog farms**

#### Figures in red identified for further study

<table>
<thead>
<tr>
<th>County</th>
<th>Output</th>
<th>Employees</th>
<th>Income/Worker</th>
<th>Proprietary Income</th>
<th>Local Inputs</th>
<th>Multipliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randolph</td>
<td>$49.6 m</td>
<td>1,264</td>
<td>$2,672</td>
<td>$(366,930)</td>
<td>21.4%</td>
<td>1.24</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>1.113</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>piglets and nursery pigs</td>
</tr>
<tr>
<td>Jay</td>
<td>$38.5 m</td>
<td>838</td>
<td>$1,656</td>
<td>$(657,919)</td>
<td>19.2%</td>
<td>1.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.124</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>finishing hogs</td>
</tr>
</tbody>
</table>
Additional Findings
Employment and Income

- Hog and pig farming in Indiana (2003)
  - Full-time annual wage = $26,319
  - Only 9% of employees are full-time
  - Part-time workers average 5.3 hours/week

- Randolph County (2003)
  - 335 employees (includes 68 proprietors)
  - 12% (32) full-time employees
  - Total FTEs = 64
Additional Findings
Employment and Income

- Hired farm workers in IL, IN, OH (2003)
  - Average annual wage $17,528
  - Workers average 36 hrs/week
  - Average pay $9.34 / hour
  - FTE wages $19,448

- All sources point to higher wages in hog and pig farming than total farming wages
Additional Findings
Employment and Income

- Proprietors’ reported income varies significantly from year to year
- Total proprietary income per IMPLAN:
  
<table>
<thead>
<tr>
<th>Proprietor</th>
<th>2004</th>
<th>2003</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jay</td>
<td>$(341,105)$</td>
<td>$(92,718)$</td>
<td>$(657,919)$</td>
</tr>
<tr>
<td>Randolph</td>
<td>$(366,930)$</td>
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</tbody>
</table>

2007 figures are Ball State forecasts, based on IMPLAN model only
Additional Findings
Employment and Income

- Average reported hog farm proprietary income in USDA Heartland Region (1998-2005) is estimated at $ (91,000) per year for farms with finishing capacity of 4,000

- Reported earnings are impacted significantly by non-cash expenses
  - Mostly depreciation
Additional Findings
Employment and Income

- In USDA Heartland Region, hog producers’ proprietary income in 2004 and 2005
  - increased significantly
  - were the only years within the eight-year study term with positive net income

- When adjusted for depreciation and unpaid labor, proprietary income is positive each year over the same reporting period
Comments

- Jay County’s hog output was higher than Randolph County’s in 2004, but is projected to be lower in 2007.

- A lesser share of money goes to wages in Jay County
  - (5.3% based on employee compensation, 3.6 % if negative proprietary income is included for 2004).
  - Randolph County’s wages in 2004 were about 10.7 % and 8.9 % of total output).

- Jay County’s hog production is more concentrated in finishing farms, and Randolph County is more intensive in producing piglets and nursery pigs, a higher value-added activity.
Potential Economic Opportunities

- **Randolph County**
  - Real estate services
  - Wholesale trade
  - Transportation
  - Ag support services
  - Financial services
  - Repair & maintenance
  - Machinery & vehicle parts

- **Jay County**
  - Real estate services
  - Wholesale trade
  - Transportation
  - Financial services
  - Repair and maintence
  - Machinery & vehicle parts
  - Warehousing
  - Veterinary services
Planning and Zoning Review

- Modern Agriculture is Big Business
  - Heavy machinery and equipment, extended hours, dust, noise, odor
  - Fundamental difference between row cropping and modern livestock operations

- Modern Agriculture is Incompatible with Rural Residential
  - Additional separation of uses is required
Planning and Zoning Review

- Two agricultural zones recommended
  - A-L (Agriculture Limited) includes row crops, limited livestock, ‘traditional agriculture’
  - A-I (Agriculture Intensive) includes CAFOs and all activities permitted in A-L zone – includes most of the rural areas
Planning and Zoning Recommendations

- Reciprocal set-backs
  - Set-backs vary based on manure handling technology

- Restrict county highway cuts
Planning and Zoning Recommendations

- **Randolph County**
  - Create new rural residential district
  - Setbacks from public uses of 1,320 feet (750’ with deep pit storage for certain uses)
  - Require CAFOs to access only certain roads

- **Jay County**
  - Eliminate setbacks for existing residential
  - Maintain most setbacks
    - Eliminate for existing properties
    - Increase for subdivisions ≥ 20 homes
  - Restrict county highway cuts

August 22, 2007
Key conclusions

- Pork production represents a viable, home-owned small business economic development initiative in rural Indiana
  - Further opportunities exist within the sector
- Existing rural planning and zoning tools are insufficient in separating incompatible rural land uses