A Look at Strategic Sectors in Adams County

Report to Adams County Development Council
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Two paths of economic development – Responsive & Strategic

- **Responsive**
  - Helping to land leads that come a county’s way
  - Sometimes a new firm is the product of generally “selling” the county
  - Sometimes an opportunity that walks in the door & needs accommodating

- **Strategic**
  - Based on a discussion (& some analysis) of what kind of companies a county would like to see join the local economy
  - Sometimes based on aspiration
  - Our research falls into this category, but is limited to only those sectors that already have a presence in Adams County
  - I.e., not “aspirational”
Perennial question of ED – how to develop a strategy of recruitment & retention

• Build on input strengths
  – Labor – quantity & quality
  – Power
  – Location
  – Taxes

• Tout quality of life
  – Natural amenities
  – Culture
  – Schools

• More formal – “cluster analysis”
Clusters – once over lightly

• Definition – the relative share of one industry in a local economy to the relative of the same industry in the U.S.

\[ LQ = \frac{\text{# of workers in industry } z \text{ in Adams County}}{\text{all workers in Adams County}} \times \frac{\text{# of workers in industry } z \text{ in the U.S.}}{\text{all workers in the U.S.}} \]

• If \( LQ > 1.0 \), a cluster exists

• Assumption – if a local economy has a concentration in one or several industries, it should be exploited (built upon)
U.S. Bureau of Labor Statistics results for Adams County in 2012: 7 clusters

Bar chart showing clusters:
- Agriculture support activities
- Crop production
- Animal production
- Food manufacturing
- Truck transportation
- Merchant wholesalers of nondurable goods
- Gasoline stations
Comments to Adams County Clusters

- Very few: 7 out of 92 sectors examined
  - Spokane – 27 out of 92 sectors

- Striking about Adams County – the size of the location quotients (LQs)
  - 4 sectors > 10.0
    - Two above 30.0
  - In contrast, Spokane shows only 11% > 2.0
  - In other words, a high degree of specialization – here, entirely in agriculture
Problems with Cluster approach

• The procedure rests only on the number of workers

• Other dimensions to a local economy
  – Other inputs
    • Capital (finance)
    • Land
  – Other output measures of an economy
    • Income going to labor
    • “Gross Product” (metro, state or national)
    • Exports

• Does not allow for linkages between local sectors
Our project – exploit the features of input-output models

• Typically, I/O models used to answer the question of “economic impact,” or generally how big a given sector is

• Advantage – a detailed description of the interactions in an economy between:
  – All sectors
  – Consumers and businesses

• Available at the county level, so can examine the “ripple” effects of an increase of, say $1M, in sales in one particular sector throughout the local economy.
Input-output – the essentials

- Essentially, a matrix that allows the output of one industry to be the input of another industry, & allows households to be buyers of all industries as well as sellers (of their labor) to all industries.

- The I/O model allows us to measure how much larger the final result will be from the initial one.

- Size of the final effect depends on the amount of purchases from outside the economy over all the rounds of spending.
An input-output model uses or calculates:

- **Direct effect** = economic activity either given or implied by the 1\textsuperscript{st} round spending ($1M in new sales)

- **Indirect effect** = how the first round spending by wheat growers is augmented by purchases from other businesses

- **Induced effect** = how the income initially earned by labor in the wheat industry is spent and re-spent in the economy

- **Total** = Direct + Indirect + Induced effects

- **Multiplier** = \( \frac{\text{Total}}{\text{Direct}} \)
In contrast to Cluster analysis, input-output approach gives 5 measures of an industry’s effect:

- **Employment** = jobs, full, part time, self-employed, or contract

- **Income** = wages, salaries, benefits

- **Output** = value of production, or sales, summed over all stages of production

- **Taxes**

- **Value-added** = the “delta” between sales price & input costs, summed over all stages of production
Method of study – imagine that the Adams County Development Council has a magic wand

• Question: which sectors of Adams County give the biggest “bang for the buck” of a $1M ↑ in sales. I.e., look at all sectors

• Two outcome measures
  – Jobs
  – Value Added (VA)
    • Highly correlated with labor income & output
    • The measure used to compute “gross product,” whether national, state or metro

• Use multipliers to rank top 15 industries ⇔ doesn’t penalize small sectors

• Hypothesis: different ranking for Jobs vs. Value Added
Our application of Input-output model to look at all sectors – first some culling

- Two rules:
  - Considered only sectors with at least 3 employees
  - $Net$ exports > 0
    - Model tracks both sales out of counties & sales in the same industry to the county
    - Strategically, want to consider only industries that, on balance, are exporting, not importing

- I/O model description of Adams County
  - 101 sectors with some activity, out of a possible 426
  - Of those, 71 had at least 3 in the total workforce
  - Of those, 28 had positive net exports
  - Further eliminated another 11 as sectors that wouldn’t be the focus of economic development (largely retail)
Value Added results of an additional $1M in sales: top 15 sectors

- Fruit farming
- Vegetable farming
- Hotels & motels
- Oilseed farming
- Grain farming
- Dairy cattle & milk production
- All other crop farming
- Wood container & pallet manufacturing
- Cattle ranching
- Frozen food manufacturing
- Farm machinery & equipment manufacturing
- Fruit and vegetable canning, pickling, and drying
- Other plastics product manufacturing
- Travel trailer and camper manufacturing
- Other animal food manufacturing
Summarizing results from Value Added criterion

- Breakdown by super-sectors
  - Agriculture: 7
  - Manufacturing (mostly agriculture): 7
  - Tourism: 1

- By employment – most of the sectors are small; only 4 have average employment > County private sector average (78)

- Average annual wage & benefits: 10 > County private sector average (~$28K)
Jobs results of an additional $1M in sales: Top 15 sectors

- Grain farming
- Hotels & motels
- Oilseed farming
- Wood container & pallet manufacturing
- Vegetable farming
- Cattle ranching & farming
- Other plastics product manufacturing
- Fruit farming
- Travel trailer & camper manufacturing
- All other crop farming
- Frozen food manufacturing
- Dairy cattle and milk production
- Fruit and vegetable canning, pickling, and drying
- Other animal food manufacturing
- Farm machinery and equipment manufacturing
Summarizing results for Jobs criterion

• Breakdown by super-sectors
  – Agriculture: 7
  – Manufacturing (mostly agriculture): 7
  – Tourism: 1

• Caveat: in ag jobs – lots of part-time work

• Size of sectors – similar results to Value Added

• Average annual compensation: similar results to Value Added
Do “sweet spots” exist?

- Jobs
- Value Added
- Both

(start something big)

(EASTERN WASHINGTON UNIVERSITY start something big)
• Ranking of top 15 by each criterion differs, but not by too much
  – Correlation coefficient between rankings of the two criterion is 0.60

• So in Adams County, little trade-off exists between a “jobs-oriented strategy” and one of growing the size of the County economy (as measured by $)
Compare to cluster results – 4 sectors are shared

Agriculture support activities
Crop production
Animal production
Food manufacturing
Truck transportation
Merchant wholesalers of nondurable goods
Gasoline stations

[Bar chart comparing sectors with agriculture support activities as the highest and gasoline stations as the lowest]
Caveats

- **Surprise entrants, not necessarily based on existing industries, could happen**

- **Assumes that every sector can easily expand output by $1M**
  - Easy for some sectors; not so perhaps for the very smallest

- **Does not look at the demand for these products – simply assumes that every sector on the final list of 17 could experience an increase**

- **Some of the top sectors are largely inputs to others => would not develop a strategy around them**
On balance......

- Scenario analysis; not a forecast

- I/O approach offers a comprehensive look at the Adams County economy & is based on “what is”

- Results differ somewhat from cluster analysis

- Perhaps some surprises about particular industries?
Thank You!

D. Patrick Jones, Ph.D.
Executive Director
Institute for Public Policy & Economic Analysis
dpjones@ewu.edu
509.828.1246

David Bunting, Ph.D.
Professor
Department of Economics