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 Pend Oreille 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.

\[ LQ = \frac{\text{# of workers in industry } z \text{ in Pend Oreille County}}{\text{# of workers in Pend Oreille County}} \div \frac{\text{# of workers in industry } z \text{ in the U.S.}}{\text{# of workers in the U.S.}} \]

- 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)

**WA CTED, now Commerce, did this for many of the counties of the state in prior decade**
U.S. Bureau of Labor Statistics results for Pend Oreille County in 2012: 10 clusters

- Forestry & logging: 54.0
- Mining, except oil & gas: 33.0
- Food & beverage stores: 1.0
- Gasoline stations: 1.0
- Banks & credit unions: 1.0
- Heavy & civil engineering construction: 1.0
- Food & drinking places: 1.0
- Furniture & home furnishing stores: 1.0
- Telecommunications: 1.0
- Repair & maintenance: 1.1
Comments to Pend Oreille County Clusters

- Relatively high percentage – 10 out of 20 sectors examined
  - Spokane – 27 out of 92 sectors
  - But typical of smaller counties

- Striking about Pend Oreille County – the size of the location quotients (LQs)
  - 4 of 10 > 3.0
    - Two above 30.0!
  - In contrast, Spokane shows only 11% > 2.0
  - In other words, not a lot of diversification
  - Also true of small counties
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)

• 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

- Its advantage – a detailed description of the interactions in an economy between:
  - All sectors
  - Consumers and businesses

- Available at the county level, so we 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 1st round spending ($1M in new sales)

- **Indirect effect** = how the first round spending by, say, loggers, is augmented by their purchases from other businesses

- **Induced effect** = how the income initially earned by workers in the logging 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 a sector’s effect:

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

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

- **Output** = value of production over all stages

- Taxes

- **Value-added**
Method of study – imagine the EDC has a magic wand

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

• Two (of the 5) outcome measures chosen:
  – 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
Our application of Input-output model to look at all sectors – first some culling

- I/O model description of Pend Oreille County
  - 90 sectors with some activity, out of a possible 426
  - Of those, 72 had more than 3 in the total workforce

- Two rules – lead to 15 top sectors
  1) Considered only sectors with > 3 employees
  2) Then eliminated all those sectors that were totally “domestic” (within county) oriented or had net negative exports
     - Some judgment involved
     - Examples of sectors excluded: general retail, most service companies
Value Added results of an additional $1M in sales by top 15 Sectors
Summarizing results from Value Added criterion

• Breakdown by super-sectors
  – Logging: 3
  – Mining: 3
  – Agriculture: 2
  – Manufacturing: 6
  – Tourism: 1

• Most of the sectors employ few, with 2 notable exceptions
  – 11 of the sectors < Pend Oreille County average (=31)

• 11 of the 15 sectors pay more than County average
Jobs results of an additional $1M in sales by top 15 sectors

- Animal production, except cattle & poultry & eggs
- Support activities for forestry
- Other accommodations
- Commercial logging
- Sign manufacturing
- Mining & quarrying sand, gravel, clay & ceramic &...
- Sawmills & wood preservation
- Mining & quarrying stone
- Other concrete product manufacturing
- Plate work & fabricated structural product manufacturing
- Snack food manufacturing
- Poultry & egg production
- Paper mills
- Mining copper, nickel, lead, & zinc
- Soap & cleaning compound manufacturing

![Bar chart showing sales growth for various sectors](image-url)
Summarizing results for Jobs criterion

• Ranking for latter half of the list is similar to that of VA; different for 1st half
  – Ex. Mining sectors don’t provide as big a jump in jobs as they to for VA

• Caveat about ag jobs – lots of part-time

• Compared to cluster analysis - only 2 in common with cluster analysis
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 15 could experience an increase

- One sector provides 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 Pend Oreille County economy & is based on “what is”

- Results differ from and preferred to cluster analysis

- Perhaps some surprises about particular industries?
Thank You!

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