Reservation Employer Establishments: Data from the U.S. Census Longitudinal Business Data Set

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July 24, 2017

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Overview

- Pervasive poverty on American Indian reservations (~30%) 
- High rates of unemployment 
- There are potentially many causes for this low level of development
One area that has been little studied is business and entrepreneurship. Generally, new businesses drive the growth of employment in the US. Due to relatively small sizes, not much is known about American Indian reservation-based firms in existing data sets. Often not included in survey data due to confidentiality issues or sample size issues. Business information for reservation geographies are not reported; collapsed into county.
Our Study

We geocode Census data on employer establishments:

- Longitudinal Business Database (establishments with employees) approx 8 million firms annually
- Integrated Longitudinal Business Database (establishments without employees) approx 18 million annually (soon)
- Data includes government employment, not just private
Our Study

- Business Register data provides physical (and/or mailing) address for establishments
- Once longitude and latitude are assigned, we use Census TIGER shapefiles
- Create a measure of reservation location based on reservation boundaries
- We geocode Census data on employer establishments to compare reservations to non-reservation portion of nearby counties
- We then include the non-reservation portion of nearby counties (up to 10)
Data Description

- 277 federally recognized reservations and 514 nearby county areas (Navajo not included) in 48 states
- Reservation residents = 8.2% of this population
- 18 industries (or sectors) 2-digit NAICS Codes
  - E.g., mining; ag/forestry/fishery/hunting; construction; manufacturing; wholesale; retail; education; etc.
- About 281,000 total establishments, of which 5.2%, or not quite 15,000, are on reservations
- About 3.3 million jobs at these establishments, with 9.2%, or just over 300,000 on reservations
Reservations Resemble Counties in Their Industry Mix of Establishments

Distribution of Establishments by Sector

Industry Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Reservation Share</th>
<th>County Complement Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag/Forestry</td>
<td></td>
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<tr>
<td>Mining</td>
<td></td>
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<tr>
<td>Utilities</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Manufacturing</td>
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<tr>
<td>Wholesale</td>
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<tr>
<td>Retail</td>
<td></td>
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<tr>
<td>Whs/Trans</td>
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<tr>
<td>Information</td>
<td></td>
<td></td>
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<tr>
<td>Finance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prof/Sci/Tech.</td>
<td></td>
<td></td>
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<tr>
<td>Mgmt/Waste</td>
<td></td>
<td></td>
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<tr>
<td>Education</td>
<td></td>
<td></td>
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<tr>
<td>Health/Social</td>
<td></td>
<td></td>
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<tr>
<td>Arts/Recreation</td>
<td></td>
<td></td>
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<tr>
<td>Food/Lodging</td>
<td></td>
<td></td>
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<tr>
<td>Other</td>
<td></td>
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<tr>
<td>Public Admin.</td>
<td></td>
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</tr>
</tbody>
</table>

Percent

[Bar chart showing the distribution of establishments by sector, comparing reservation share to county complement share.]
The Industry Mix of Jobs on Reservations Skews toward Recreation and Government

![Employment Shares by Sector and Place](image)
Compared to Counties Jobs per capita on reservation is closer to parity in general. Not true for number of firms per capita.
Employment and Jobs by Population Size

- We fit a curve to the data for employment per capita and jobs per capita
- We examine whether the average differences shown in the previous figures persist at different reservation population sizes.
Reservation Population Distribution Suggests a Need to Focus on Low-Population Areas
Estimating Establishments and Jobs by Population Allows Us to Focus on Low-Pop. Areas

Agriculture, Forestry, Fishing and Hunting Confidences for Number of Employees by Reservation Status

- County Regression Coefficient
- Reservation Regression Coefficient
Double Gap Example: Construction

Double Gaps Example

Construction Confidences for Number of Establishments by Reservation Status

Estimated Coefficient vs. Population Size in 1000s

- Black: County Complement
- Red: Reservation Share

Construction Confidences for Number of Employed by Reservation Status

Estimated Coefficient vs. Population Size in 1000s

- Black: County Complement
- Red: Reservation Share
Other “Double Gap” Sectors

- Ag/Forestry/Fishing/Hunting (up to 15,000)
- Mining (up to 10,000)
- Utilities (up to 15,000)
- Manufacturing (from 5,000 to 30,000)
- Wholesaling (up to 17,500)
- Retailing (up to 7,500)
- Transportation/Warehousing (up to 17,500)
- Information (up to 7,500)
- Finance/Insurance/Real Estate (up to 7,500)
- Education (up to 2,500)
- Health Care/Social Services (up to 10,000)
Opposing Gaps Example: Public Admin.
Key Findings

We find:

- Reservations have a similar industry mix of establishments but fewer of them in nearly all sectors
  - Number of employer establishments per capita is generally lower on reservation than off
- But big casino-related and gov’t. sectors give reservations an edge in total job numbers
  - Number of jobs per capita is larger in certain sectors than off reservation counties (arts/recreation and public admin)
Key Findings

- Reservations of <15K pop. dominate our data and are much more prone to deficits in establishments and jobs.
- Differences correlated with factors such as remoteness and lower income, but not fully accounted for.
- Many gaps unexplained.
- No causal explanation claimed.
- Results are averages.
What Explains These Patterns?

- Bottom line: We don’t know yet
- Inclusion of additional explanatory variables account for some of the gaps
  - Population density
  - Rural vs. urban indicator (USDA)
  - Per capita income and poverty rate measures
  - Percent of 25+ population with bachelor’s degree
- But it does not fully close the gaps
Summary

- First look at on-reservation employer firms
- Comparison with adjacent counties
- Number of firms per capita is lower than in the counties
- Employment per capita is higher than in the counties
- Suggesting something other than profit maximization
- Employment maximization may be more important or alternative profit maximization
Future Work

• Business Dynamics
  • Survival Rates over time by reservation status
  • Before and After Great Recession

• Determinants of Entrepreneurship
  • Using SBO: Race, Source of Capital

• Estimating Demand Effects
  • Using the start of Casino operations as a proxy for demand for services
  • Transportation, Food, Lodging, Cleaning

• Analysis of Sole Proprietor Sector
### Industry Overview

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>11</td>
<td>29,000</td>
<td>4.7%</td>
<td>1,363</td>
<td>138,000</td>
<td>4.9%</td>
<td>6,734</td>
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<tr>
<td>Mining, Quarrying, and Oil and Gas Extraction</td>
<td>21</td>
<td>2,400</td>
<td>11.0%</td>
<td>264</td>
<td>54,000</td>
<td>5.3%</td>
<td>2,840</td>
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<tr>
<td>Utilities</td>
<td>22</td>
<td>2,200</td>
<td>4.6%</td>
<td>101</td>
<td>31,000</td>
<td>4.2%</td>
<td>1,296</td>
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<tr>
<td>Construction</td>
<td>23</td>
<td>31,000</td>
<td>5.1%</td>
<td>1,581</td>
<td>144,000</td>
<td>7.2%</td>
<td>10,296</td>
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<tr>
<td>Manufacturing</td>
<td>31, 32, 33</td>
<td>12,000</td>
<td>4.6%</td>
<td>552</td>
<td>392,000</td>
<td>3.7%</td>
<td>14,426</td>
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<tr>
<td>Wholesale Trade</td>
<td>42</td>
<td>10,000</td>
<td>5.9%</td>
<td>590</td>
<td>100,000</td>
<td>6.9%</td>
<td>6,940</td>
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<td>Retail Trade</td>
<td>44, 45</td>
<td>40,000</td>
<td>5.1%</td>
<td>2,040</td>
<td>416,000</td>
<td>6.5%</td>
<td>27,082</td>
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<td>Transportation and Warehousing</td>
<td>48, 49</td>
<td>11,000</td>
<td>5.8%</td>
<td>638</td>
<td>92,000</td>
<td>6.5%</td>
<td>5,971</td>
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<tr>
<td>Information</td>
<td>51</td>
<td>4,300</td>
<td>5.2%</td>
<td>224</td>
<td>42,000</td>
<td>8.7%</td>
<td>3,662</td>
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<tr>
<td>Finance and Insurance, Real Estate, and Rental and Leasing</td>
<td>52, 53</td>
<td>23,000</td>
<td>4.8%</td>
<td>1,104</td>
<td>128,000</td>
<td>7.4%</td>
<td>9,446</td>
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<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>54</td>
<td>17,000</td>
<td>5.1%</td>
<td>867</td>
<td>90,000</td>
<td>6.3%</td>
<td>5,652</td>
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<tr>
<td>Management of Companies and Enterprises; Administrative and Support; and Waste Management and Remediation Services</td>
<td>55, 56</td>
<td>10,000</td>
<td>5.6%</td>
<td>560</td>
<td>109,000</td>
<td>11.1%</td>
<td>12,132</td>
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<td>Educational Services</td>
<td>61</td>
<td>3,400</td>
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<td>299</td>
<td>341,000</td>
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<td>Health Care and Social Assistance</td>
<td>62</td>
<td>24,000</td>
<td>5.4%</td>
<td>1,296</td>
<td>462,000</td>
<td>6.3%</td>
<td>29,245</td>
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<td>Arts, Entertainment, and Recreation</td>
<td>71</td>
<td>5,400</td>
<td>5.4%</td>
<td>292</td>
<td>84,000</td>
<td>40.5%</td>
<td>33,978</td>
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<td>Accommodation and Food Services</td>
<td>72</td>
<td>25,000</td>
<td>5.0%</td>
<td>1,250</td>
<td>337,000</td>
<td>13.5%</td>
<td>45,394</td>
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<tr>
<td>Other Services (except Public Administration)</td>
<td>81</td>
<td>26,000</td>
<td>4.7%</td>
<td>1,222</td>
<td>133,000</td>
<td>12.5%</td>
<td>16,625</td>
</tr>
<tr>
<td>Public Administration</td>
<td>92</td>
<td>5,600</td>
<td>6.4%</td>
<td>358</td>
<td>196,000</td>
<td>21.6%</td>
<td>42,395</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>281,300</td>
<td>5.2%</td>
<td>14,601</td>
<td>3,289,000</td>
<td>9.2%</td>
<td>301,632</td>
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</tr>
</tbody>
</table>
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