SynLBD: Providing firm characteristics on synthetic establishment data

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Excerpt

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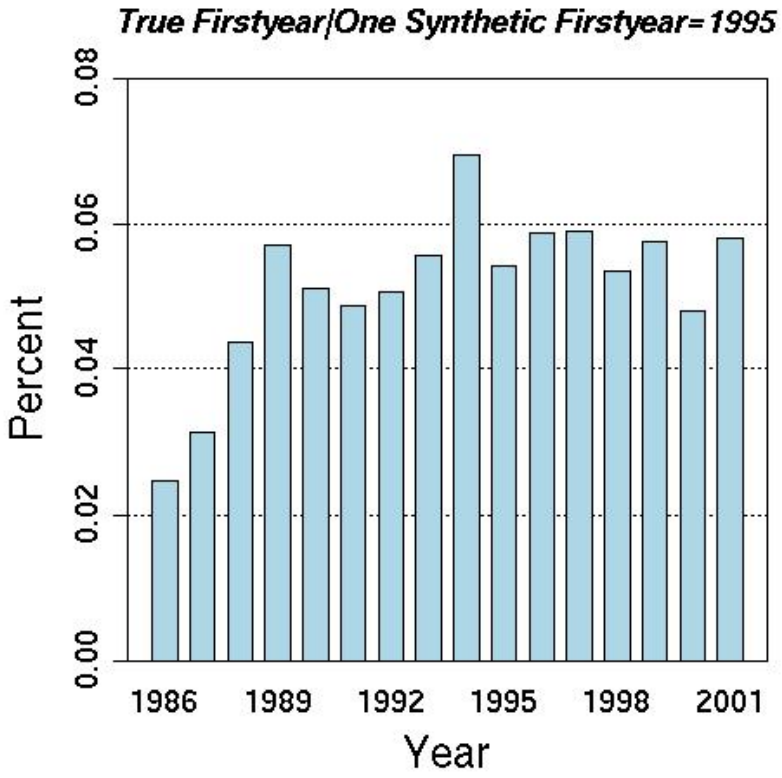
Confidentiality Protection: Synthesizing Birth and Death Years

- High probability that an individual establishment's synthesized plant birth/death year is different from its actual birth/death year

- Between implicates establishment likely to have different birth, death, lifetime

Example: Synthesizing Synthetic First Year



Confidentiality Protection: Breaking Links Across Implicates

- ID variable in synthetic data generated randomly
- Can’t group (across implicates within year) observations generated from same establishment

Confidentiality Protection: Synthesizing Employment and Payroll*

- Synthesized employment and payroll vary substantially around regression lines
- Correlations between synthetic employment/payroll and observed synthetic payroll are low
  - 'Live' establishments in observed data may be 'dead' in synthetic data

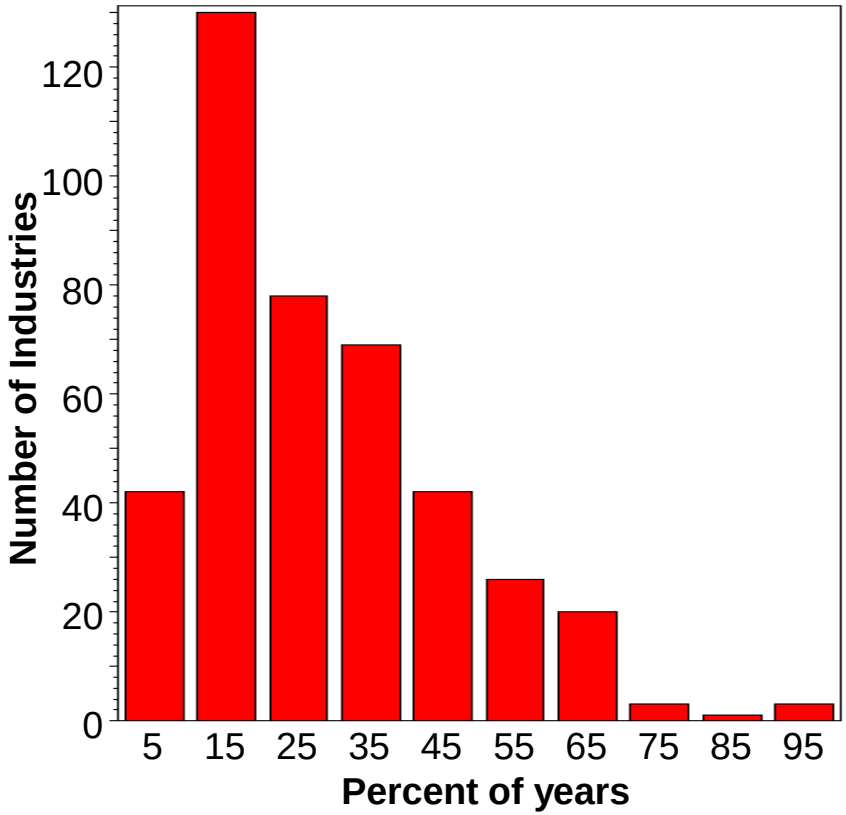
*Results from Phase 1

Confidentiality Protection: Protecting Isolated observations

- We believe the most at-risk establishments are the ones isolated in the distributions of employment and payroll –in the upper tail
- Synthesizer produces observations in upper tail but not necessarily close to real ones

Difference between maximum actual and synthetic employment

Percent of years where distance <5%, by industry



Looking forward

- Phase 2 (underway)
  - Demonstrate confidentiality protection
    - Safely include multiple implicates, geography, firm implicates
    - How will released synthetic longitudinal data be updated with new years of data.