Testing Efficacy of Government Spending on Lasting Economic Growth

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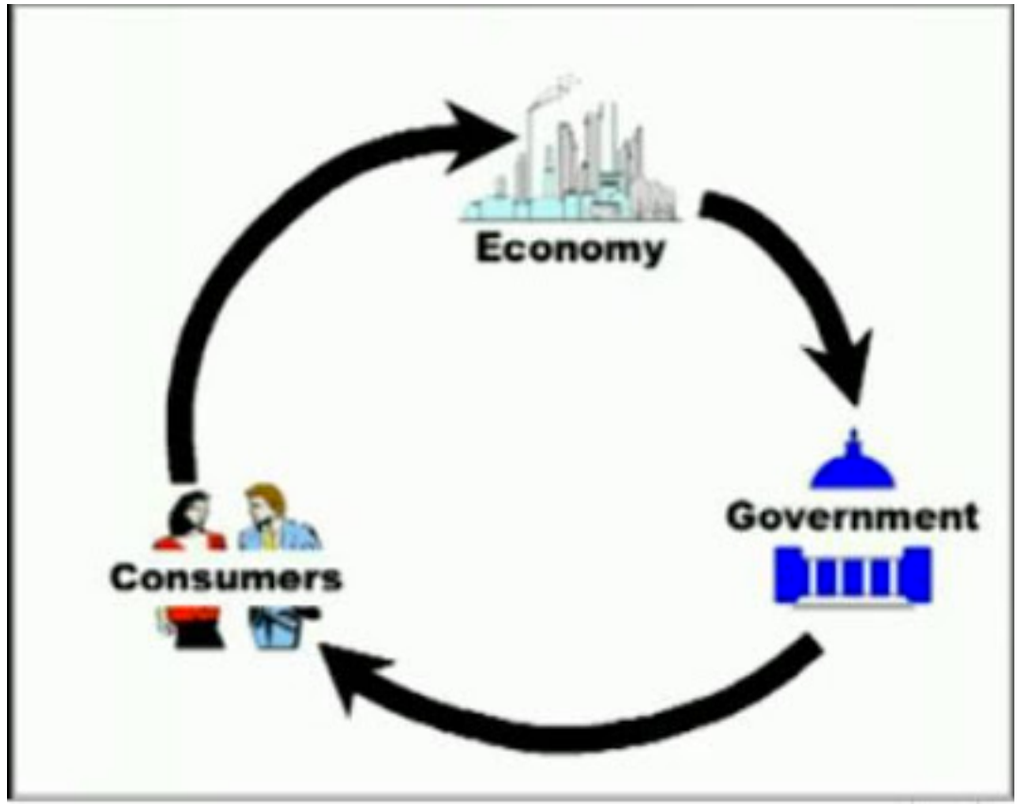
- Lasting economic impact of government spending largely unexplored with data

- Wealth of data available: (100+)GB of Federal Spending 30 GB of detailed wage information

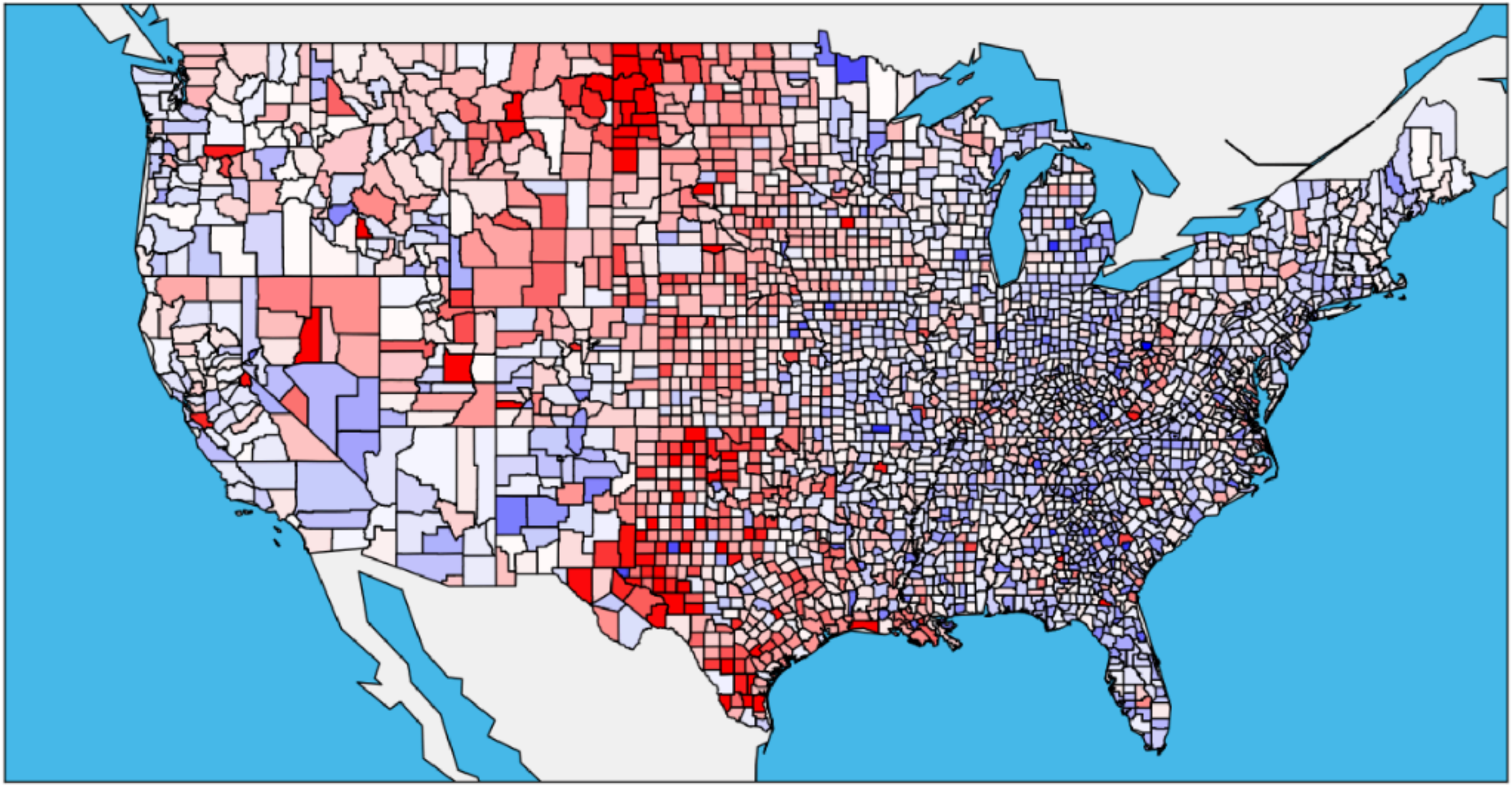
- Records spanning the past decade and more

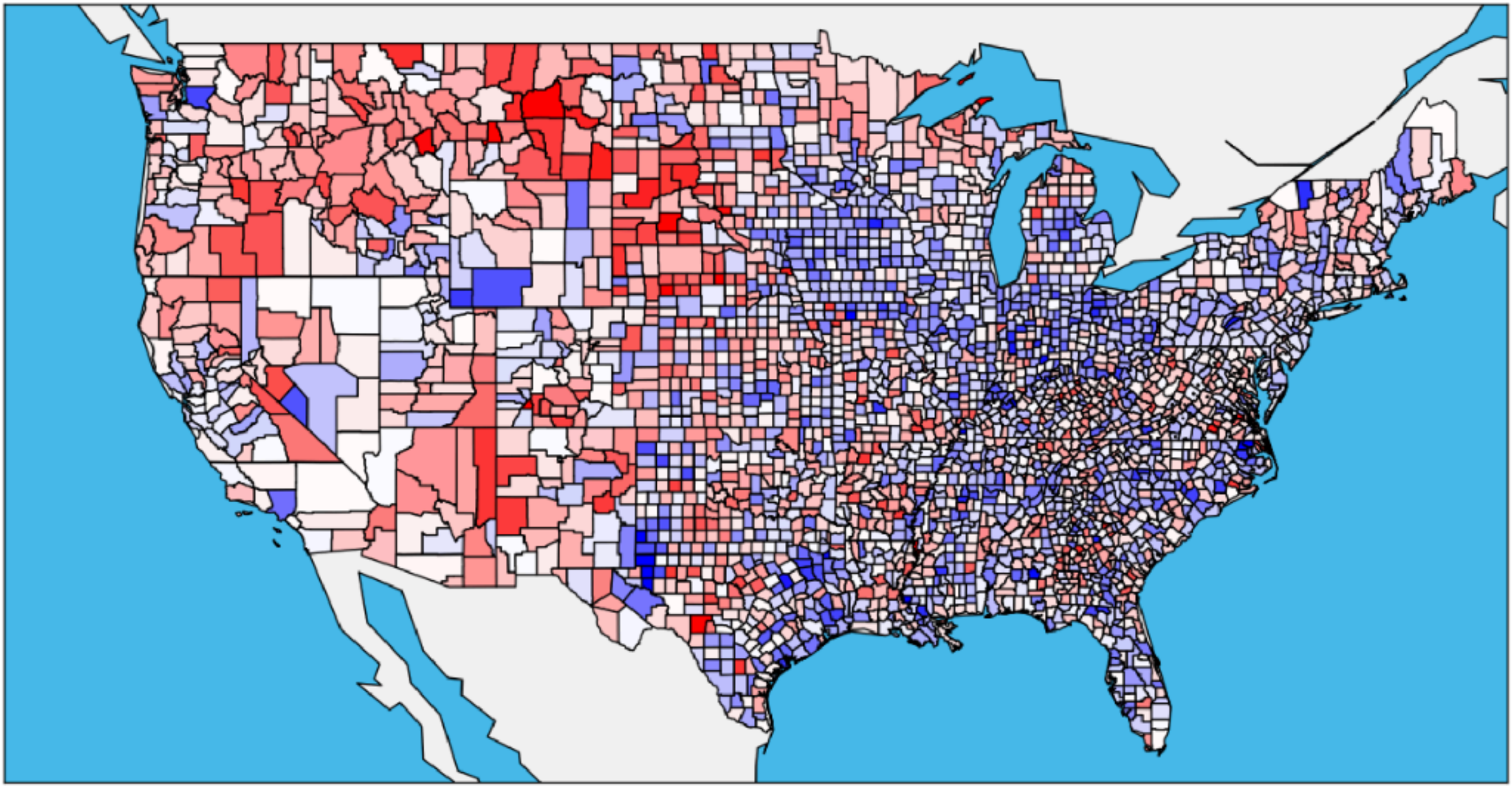
- Timely, of broad interest, and techniques are widely applicable

Government-Driven Supply

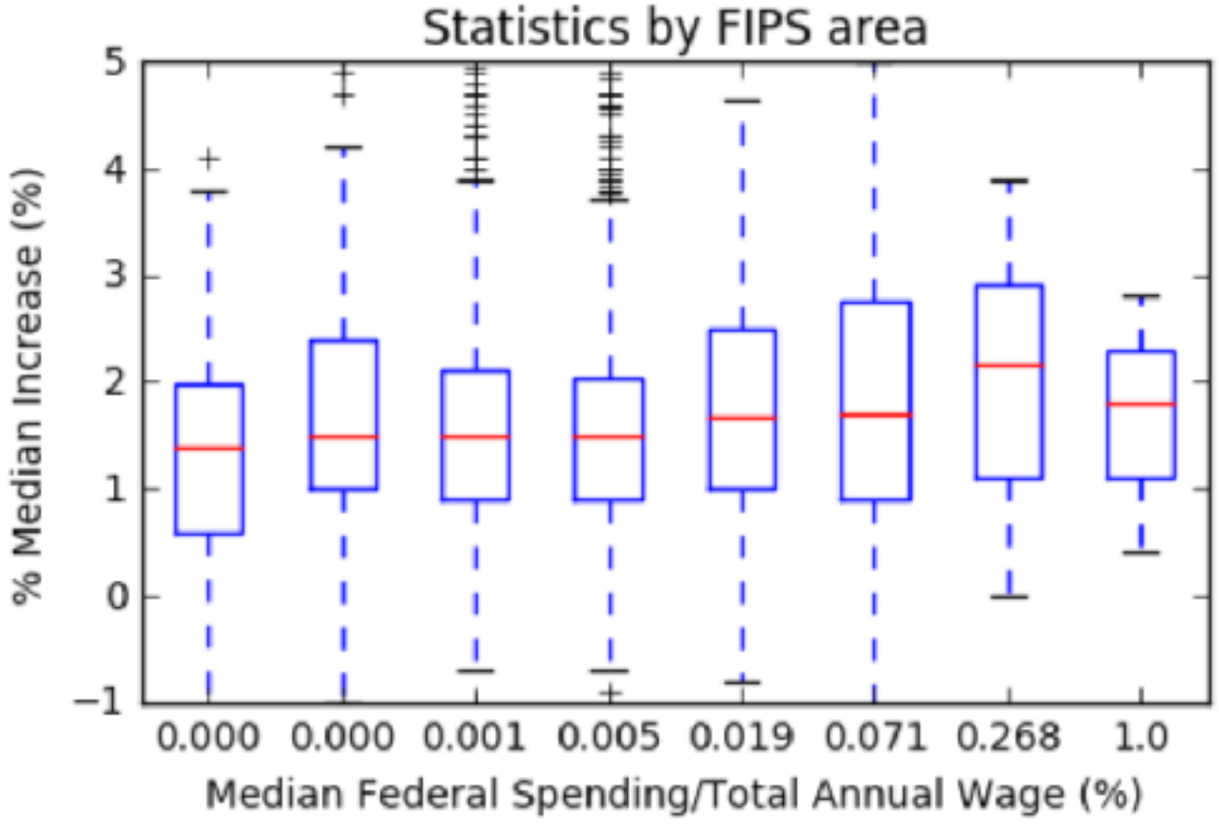


from http://www.padmad.org/


Median Wage Year-To-Year Increase in Percent 2005-2015
−1
0
1
2
3
4
5
6



Median Federal Spending as Percent of Annual Wage 2005-2015



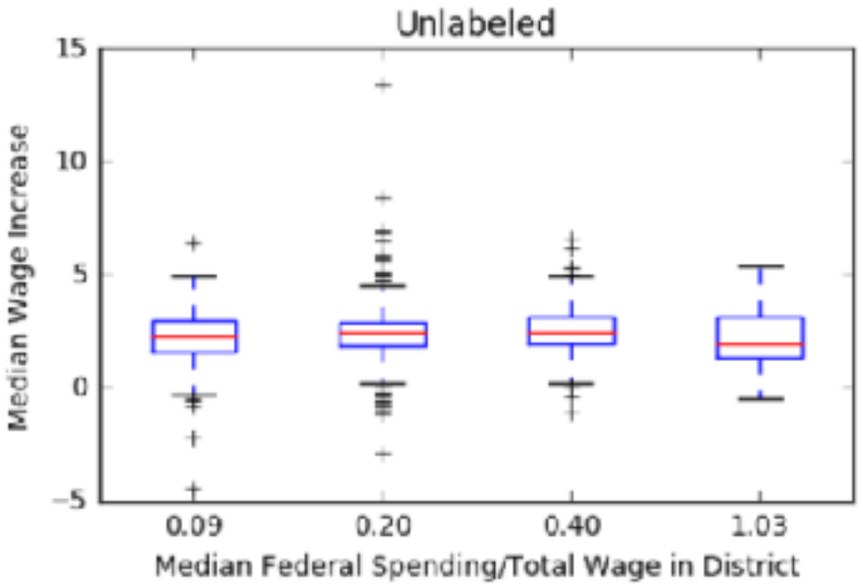
- Spending compiled from 100GB of federal contracts, loans, grants and other awards from USASpending.gov
- 10GB of wage data from BLS from 2005 through 2015

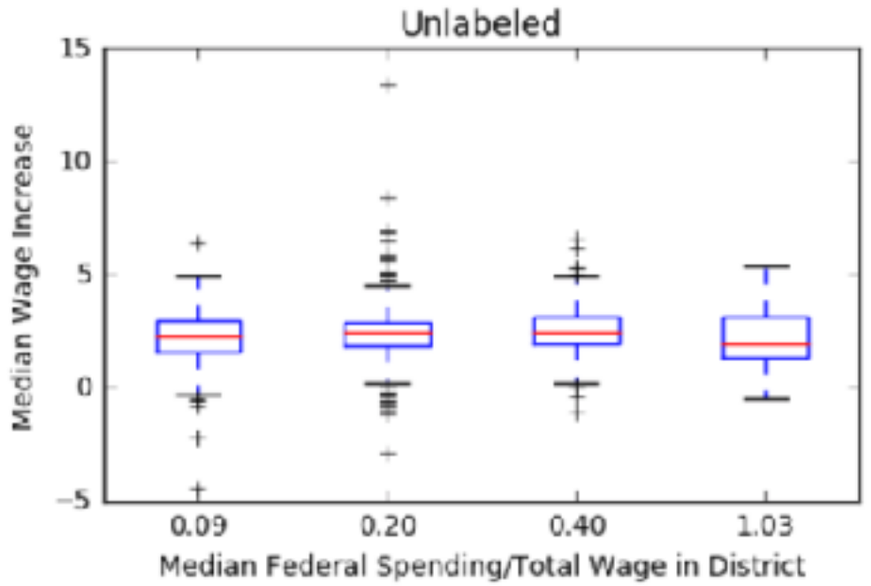
Signal, if any, hidden by other effects in the economy

- Shale boom
- Housing crisis

FIPS Regions Coded by Economic Sector

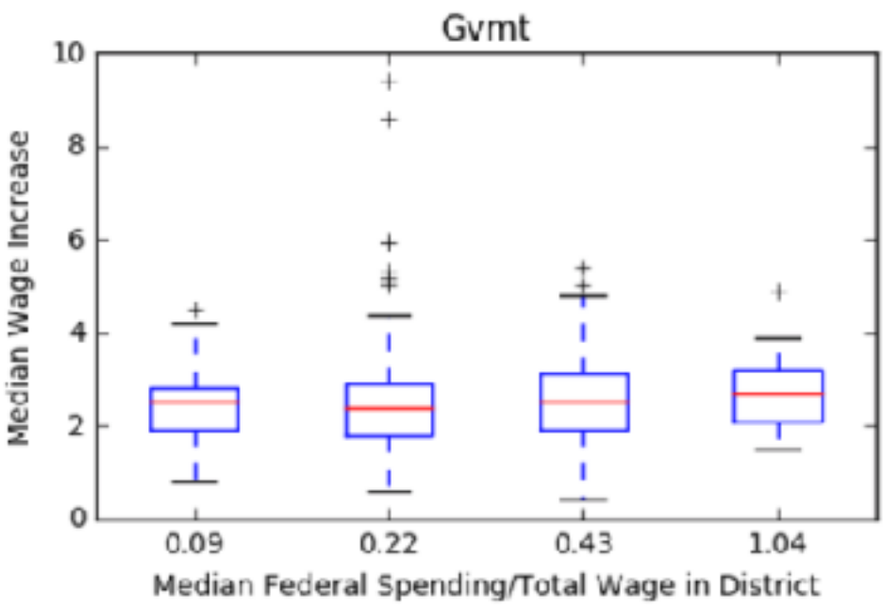
Unlabeled
Farm
Mining
Mfr.
Gvmt
Svcs.

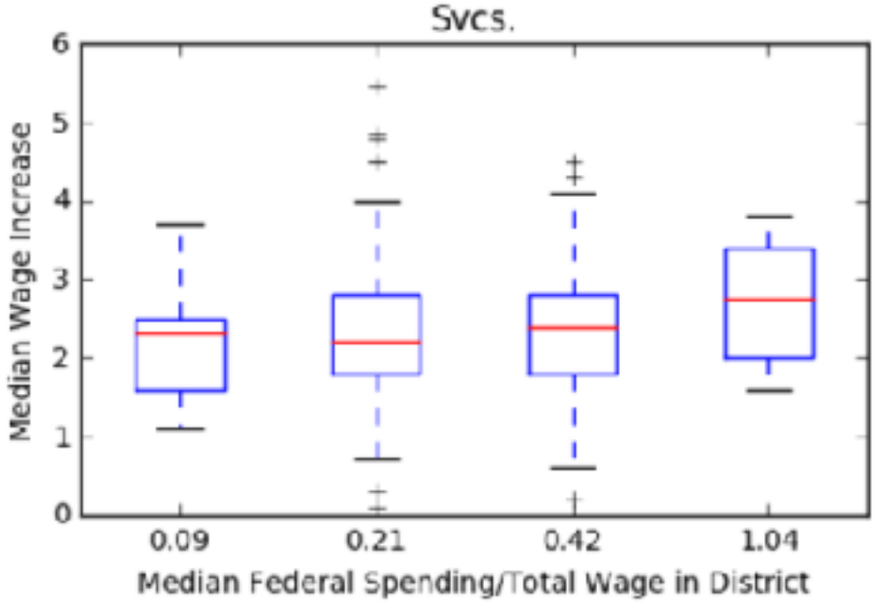

Unlabeled
Median Wage Increase
15
10
5
0
−5
0.09
0.20
0.40
1.03
Median Federal Spending/Total Wage in District


Unlabeled
Median Wage Increase
15
10
5
0
−5
0.09
0.20
0.40
1.03
Median Federal Spending/Total Wage in District

Mining
Median Wage Increase
14
12
10
8
6
4
2
0
−2
−4
0.09
0.21
0.40
0.91
Median Federal Spending/Total Wage in District

Mfr.
Median Wage Increase
6
5
4
3
2
1
0
−1
−2
−3
0.09
0.19
0.40
0.99
Median Federal Spending/Total Wage in District


Gvmt
Median Wage Increase
10
8
6
4
2
0
0.09
0.22
0.43
1.04
Median Federal Spending/Total Wage in District


Svcs.
Median Wage Increase
6
5
4
3
2
1
0
0.09
0.21
0.42
1.04
Median Federal Spending/Total Wage in District

Next Steps

- Better handling of temporal data (used median values from 2005-2015 for memory efficiency)
- Data Imputation for missing records—possibly a learning algorithm
    - ~10% of all USAspending data is at some level corrupt
    - Currently discarded
- More targeted clustering of FIPS regions (currently using Census definitions)
    - RF classifier on detailed industry level info
    - Include time and geographic info more directly to learn and control for local/regional economic trends
- Interactive (online) applet for more complete data visualization