

## Introduction

Economic shocks affect long term patterns of economic growth. For this reason, understanding the mechanisms that can enhance economic performance will be useful for regional economies. This research aims to show the role of economic diversity in Indiana during the Great Recession of 2008-2009.

## Research Questions

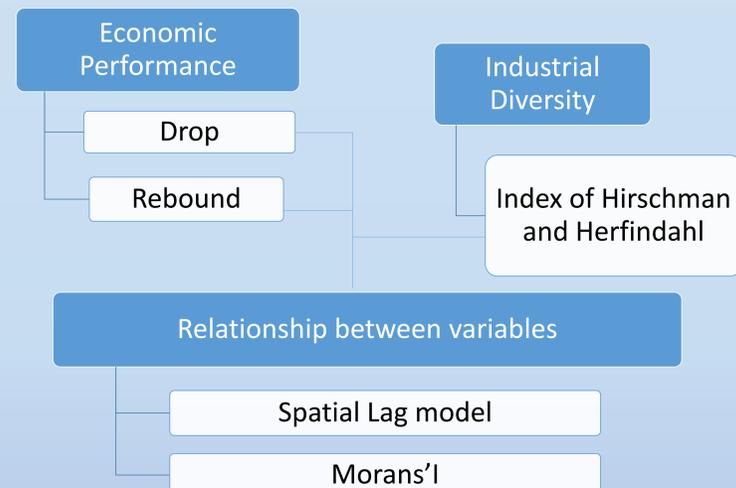
- What was the economic performance of Indiana's counties during the Great Recession?
- Does economic diversity play a role during economic downturns?

## References

1. Hans and Goetz, Economic resilience in U.S (2015)
2. Herfindahl, concentration in the steel industry (1950)

## Methods

Using two digits North America Industry Classification System (NAICS) we assembled a database with annual number of jobs for Indiana's counties from 2000 to 2016.



## Index of Hirschman & Herfindahl

$$1. HHI = \sum_{i=1}^n S_i^2$$

In this case  $HHI$  results in a minimal value of  $\frac{1}{n} = 0.047$

Where  $S_i$  is the share of the  $i$ th industrial sector.

## Drop and Rebound

$$2. Drop_j = Jobs_{2007} - Jobs_t$$

Indices were computed for  $j$ th counties for 2007, the year before the recession.

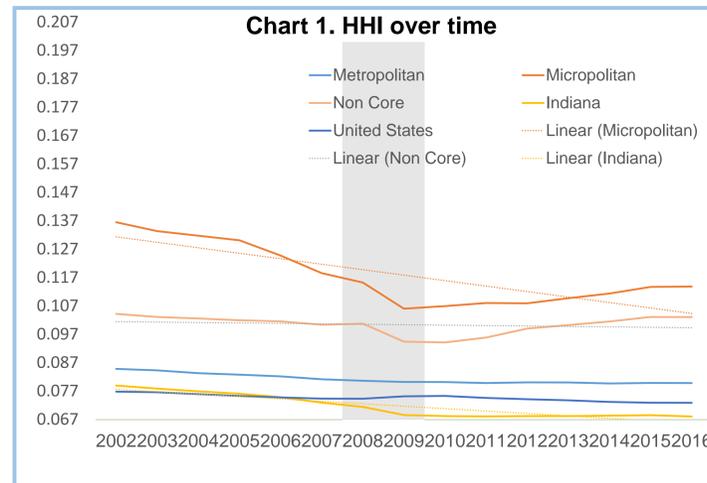
$$3. Rebound_j = Jobs_{t+1} - Jobs_t$$

## Spatial Lag Model

$$4. Resilience = \beta_0 + \gamma WY + \beta_1 Age2534 + \beta_2 PCHHI + \beta_3 AEarnings + \beta_4 Area + \beta_5 ManufacIndex + \epsilon$$

Where,  $\epsilon \sim N(0, \sigma)$  is the error term

## Economic Performance and Diversity in Indiana



The Great Recession of 2008 stopped the diversification process in Indiana. Specifically in Metro and Non-Core counties.

Counties in the former areas have become more diversified but it is due to the fact that they lost jobs in sectors that were highly concentrated.

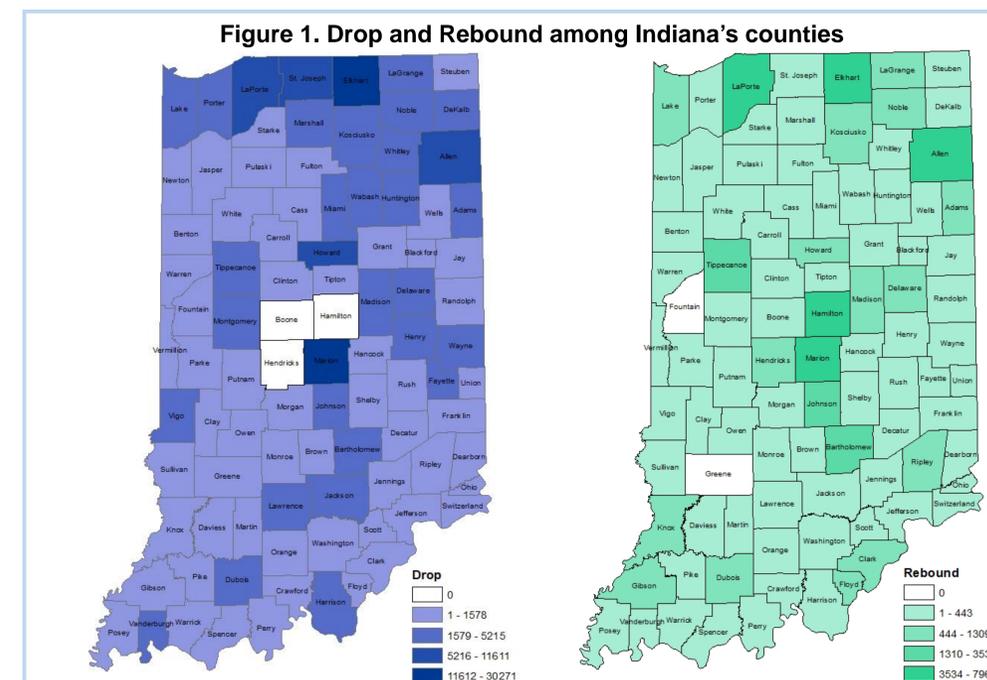


Table 1. Spatial lag model

Variables	Drop		Rebound	
	Coefficient	St. Error	Coefficient	St. Error
Spatial Lag	-0.10	0.11	-0.09	0.14
Constant	-1476.50	2083.83	-2447.04	1089.80
PCHHI	-238.75**	83.03	49.36	1.13
Manufac.Inde x	764.94	626.54	138.43	0
Age 25-34	-0.21	10.01	0.05**	0
A.Earnings	0.00	0.02	0.0038**	0.00
Area	15399.30	11811.90	-6696.02	6184.76
R squared	0.64		0.44	

- **PCHHI** is the first principal component for HHI over time. It captures around 95 % of the variance.
- **Spatial Lag** coefficient refers to the parameter  $\gamma$  in equation 4.
- We added the following variables into the regression model: Manufacturing Index that could be 1 or 0, Area of every county, Average Earnings per worker in our frame of time, and average of people aged 25-34.

## Conclusions

- Policies that intend to increase resilience among counties need to be multilevel and take into account each counties' local characteristics..
- Diversity does not always mean a better economic performance.
- Regional planners should pay special attention to Manufacturing in order to minimize layoffs.
- Diversity does not play a role in counties' degree of Resilience as a whole. However, greater the degree of diversity of a given county, less the Drop, that is the number of layoffs during a recession.