

# Diverging Trends in National and Local Concentration

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# Introduction

- Recent literature has documented increasing national product-market concentration, driven by growing top firms
  - ▶ CEA, Gutierrez and Philippon (2017), Barkai (2017), among others
- Consistent narrative has emerged whereby the rise in national concentration is the cause for
  - ▶ Rising markups and market power (De Loecker and Eeckhout, 2017)
  - ▶ Increasing profits (Barkai, 2017)
  - ▶ Declining labor share (Autor, et al., 2017)
  - ▶ Declining firm entry and dynamism (Decker, et al., 2017)
- However, most markets are local and product-specific
  - ▶ Due to transport costs and imperfect substitutability
  - ▶ Concentration is more appropriately measured locally and for fine product classifications
- We use NETS data from 1990-2014 to explore national and local product-market concentration trends

# Four Main Facts

We document four main facts relating to product-market concentration between 1990 and 2014:

- ① Overall and for all major sectors, concentration is increasing nationally but decreasing locally
- ② 8-digit industries with diverging trends are pervasive and account for a large share of employment and sales
- ③ Among diverging industries, top firms have *increased* national but *decreased* local concentration
- ④ Among diverging industries, opening of a plant from a top firm is associated with a long-lasting *decrease* in local concentration

# The Data

- Data comes from the National Establishment Time Series (NETS)
  - ▶ Provided by Walls & Associates from Dun & Bradstreet
- Contains annual observations of every U.S. business establishment from 1990 through 2014
  - ▶ Sales, employment, owning enterprise, primary industry, and location
  - ▶ Each establishment is assigned a unique ID number allowing us to track it over time even in case of corporate-level changes
  - ▶ Data on primary industry is provided at 8-digit SIC code level or more aggregate sectors
- We exclude establishments associated with
  - ▶ agriculture, education, government, health care, mining, and non-profits

County-Level Employment Correlations with CBP

Standardized Employment in NETS and CBP

# Measuring Concentration

- Our benchmark measure of concentration is the Herfindahl-Hirschman Index (HHI),

$$C_{i,g,t} = \sum_e s_{e,i,g,t}^2 \in [1/N, 1],$$

where  $s_{e,i,g,t}$  is an enterprise  $e$ 's *total* share of sales in industry  $i$  (SIC 8), location  $g$ , at time  $t$  and  $N$  is the number of enterprises

- ▶ Four geography levels for  $g$ : country, CBSA, county, ZIP code
- ▶ Results are robust to alternative measures of concentration (e.g. adjusted HHI or share of top enterprise)

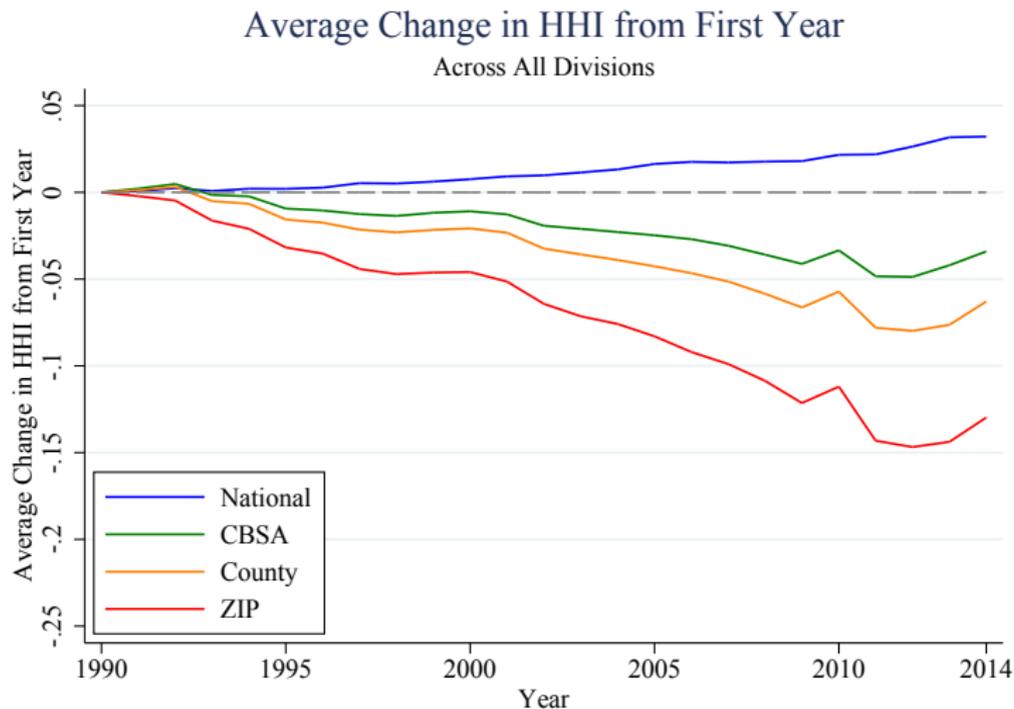
# Measuring Concentration Trends

- Differences across industries in number of firms make comparisons in levels hard
  - ▶ Calculate changes in the HHI for each  $(i, g, t)$  pair from the first year with observed sales for that  $(i, g)$  pair,  $\Delta C_{i,g,t}$
- Calculate for each year the average change, weighted by employment ( $w_{i,g,t}$ ), across all industries,

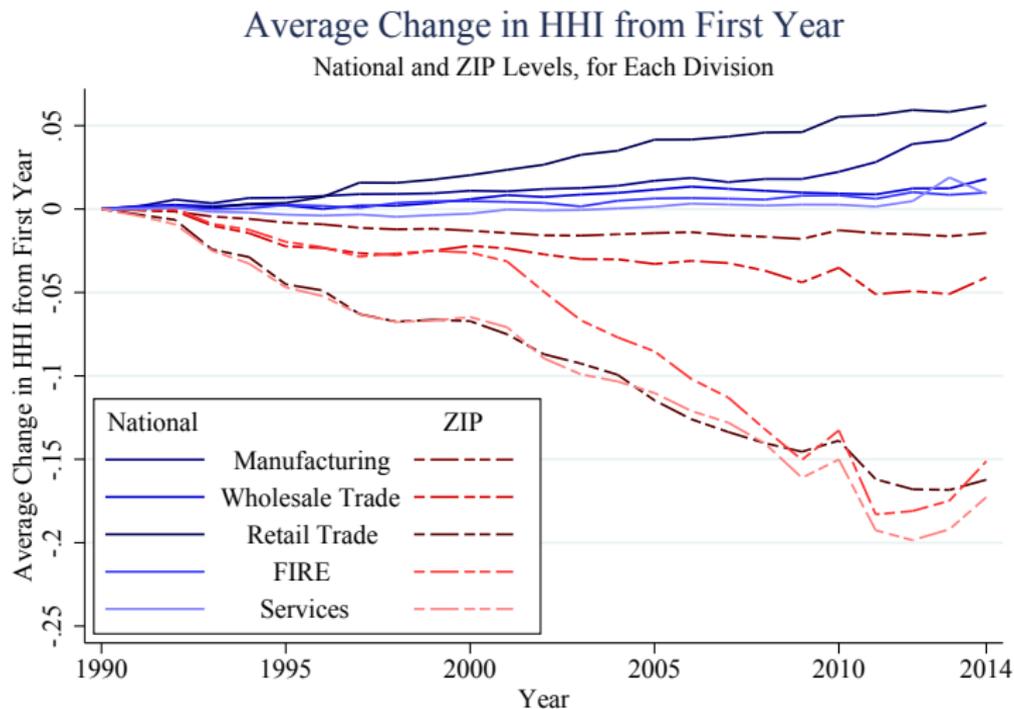
$$\Delta C_t = \sum_{i,g} w_{i,g,t} \Delta C_{i,g,t}$$

- ▶ We compute it for the whole economy and by major sector
- ▶ We compute it for each level of geography

# Fact 1: Diverging National and Local Concentration Trends



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# Positive and Negative Trends

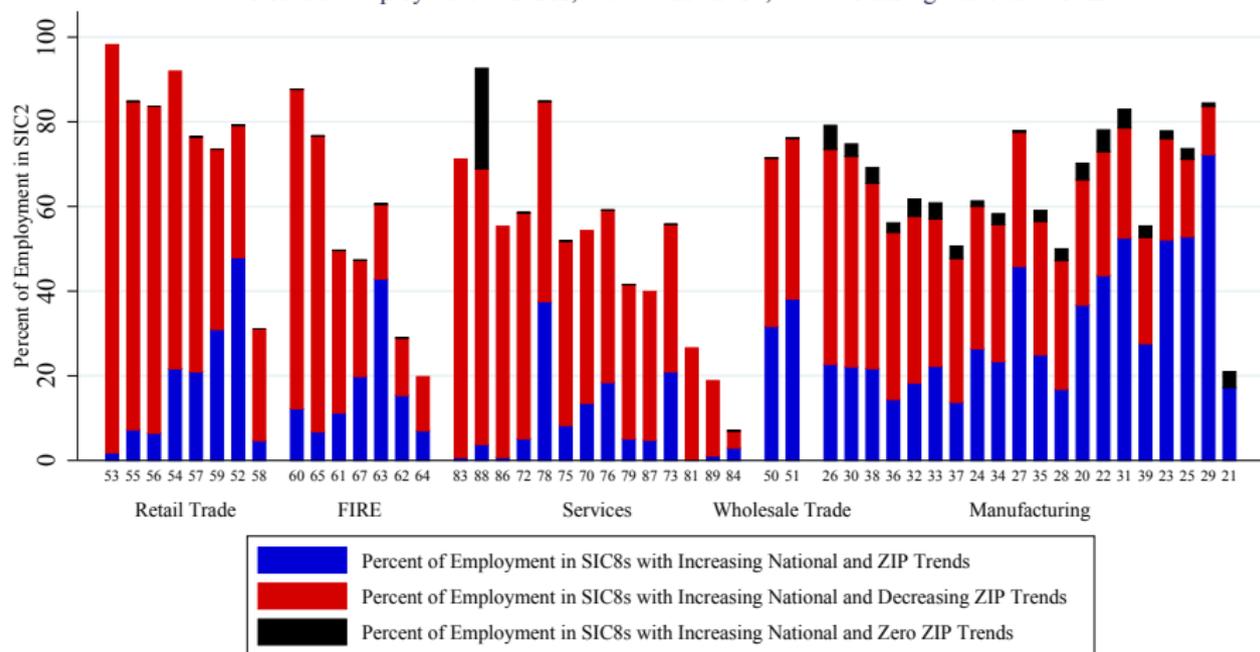
- We want to assess the relative importance of national and negative trends
- For each industry we compute the weighed average change in HHI,

$$\Delta C_{i,t} = \sum_g w_{i,g,t} \Delta C_{i,g,t}$$

- To calculate sign of trend for each SIC 8 industry we regress  $\Delta C_{i,t}$  on  $t$  and determine the sign of the coefficient
- Fraction of employment:
  - ▶ 61% in industries with *positive national* trend
  - ▶ 77% in industries with *negative local* (ZIP) coefficients
  - ▶ 43% in industries with both *positive national but negative local* (ZIP) coefficients

## Fact 2: Pervasive Diverging Trends Across 2-digit Sectors

Percent of Employment in SIC8s, within Each SIC2, with Increasing National Trends



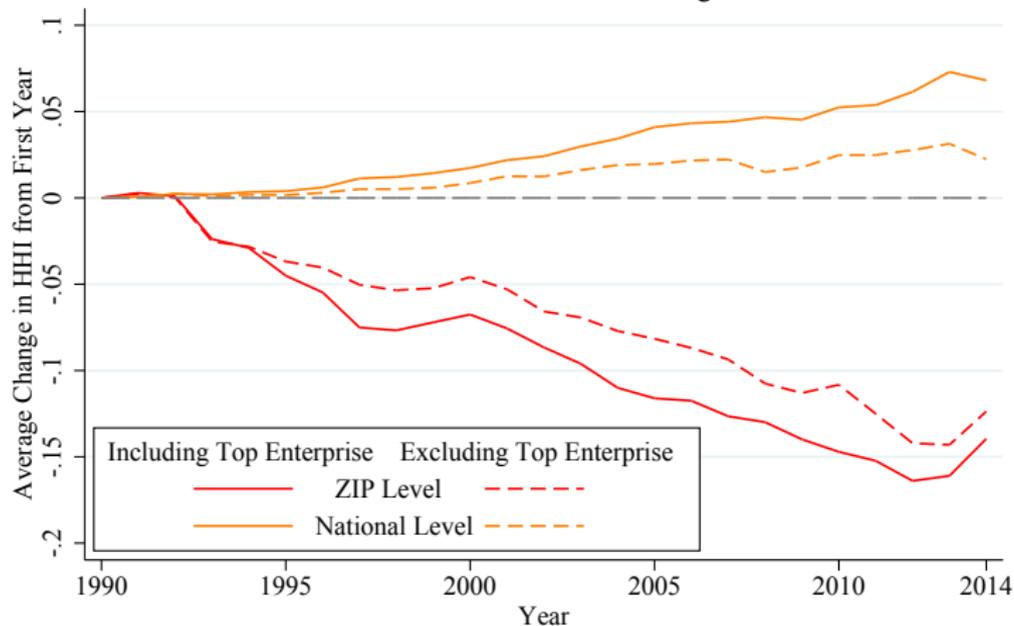
- Diverging trends are most prevalent in Retail Trade, least prevalent in Manufacturing

# Measuring the Role of Top Firms

- We want to understand the role of top firms in generating diverging trends
  - ▶ Define an industries' top firm(s) using national 2014 sales
- Calculate trends in concentration with and without the top firm
  - ▶ Look at  $(i, g)$  pairs where top firm enters
  - ▶ Select  $(i, g, t)$  where concentration can be calculated after excluding top firm
- *Are top firms expanding (and increasing national concentration) by adding establishments that decrease local concentration?*

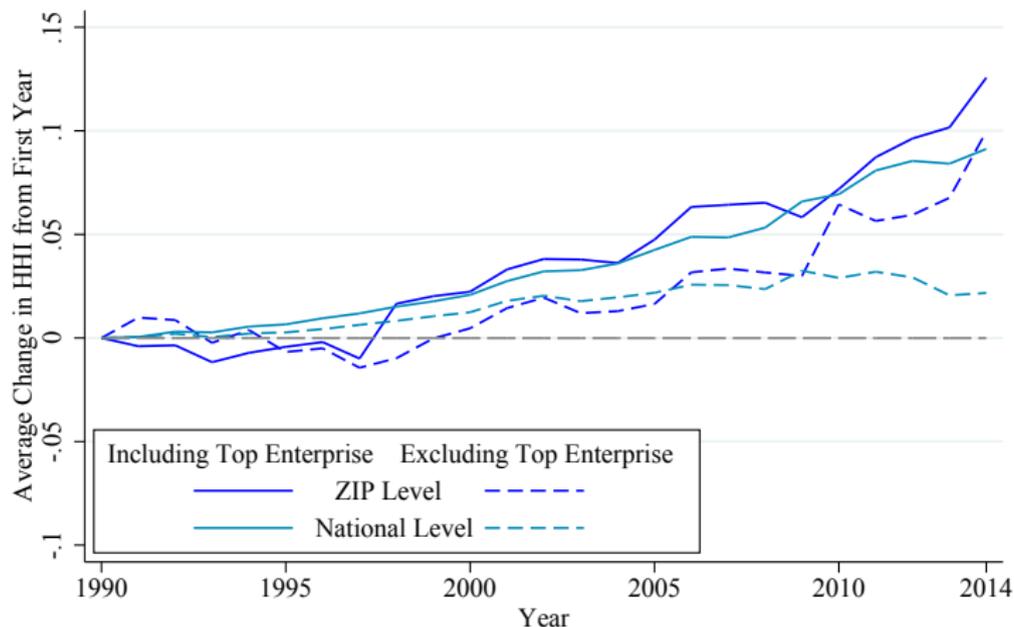
# Fact 3: The Role of Top Firms in Diverging Industries

Average Change in HHI from First Year  
Across SIC8s with Positive National and Negative ZIP Trends



# Fact 3: The Role of Top Firms in Concentrating Industries

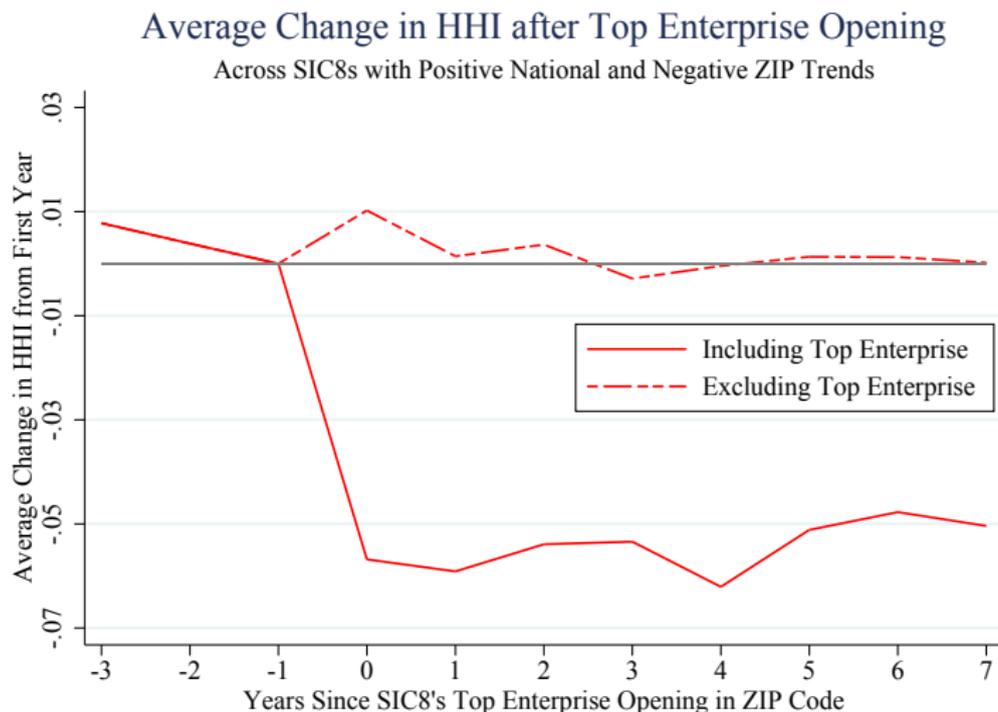
Average Change in HHI from First Year  
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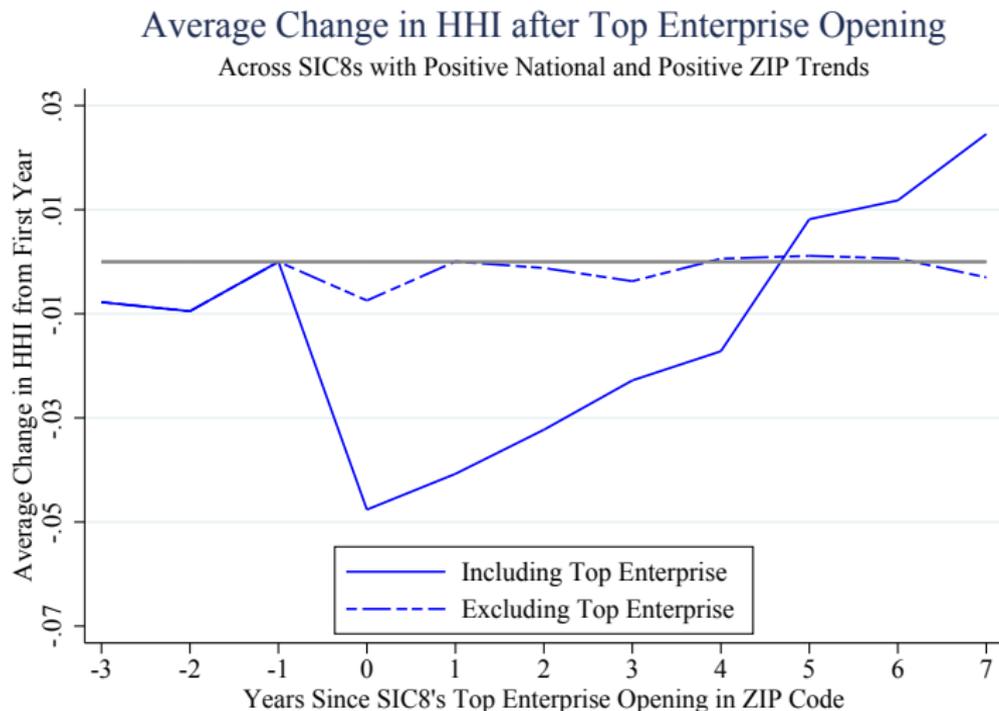
# An Event Study: When a Top Firm Comes to Town

- Are top firms actually lowering concentration when they enter a locality?
  - ▶ How long-lasting is the effect?
- We want to measure the effect on local concentration before and after a top firm enters an  $(i, g)$  pair
  - ▶ Calculate for every industry and location and average using employment shares
  - ▶ Use 10 year window (3 before and 7 after) and normalize by HHI in year of entry

## Fact 4: Local Entry of Top Firm, Diverging Industries



## Fact 4: Local Entry of Top Firm, Concentrating Industries



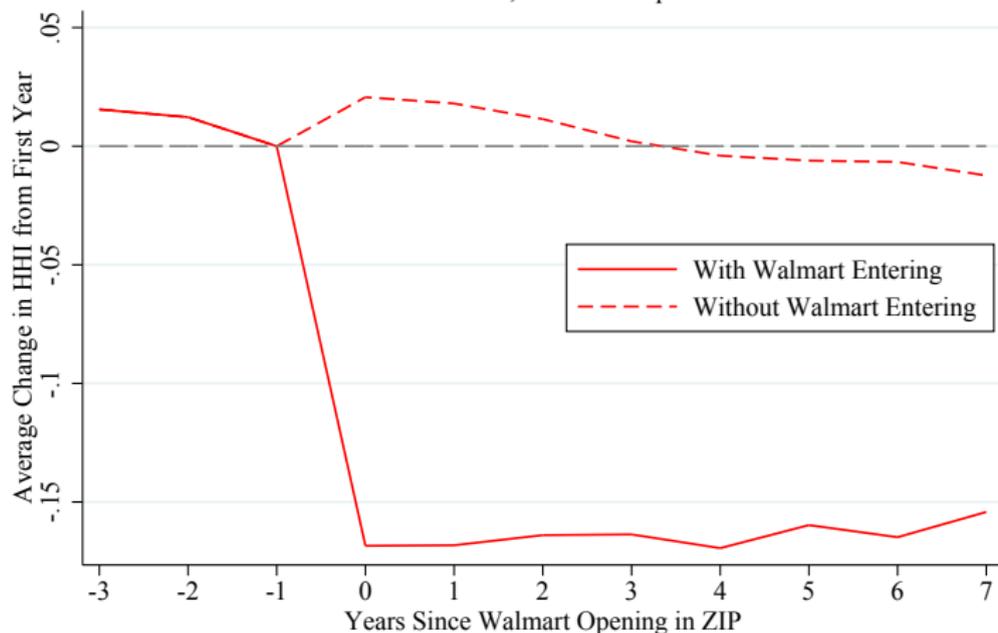
# The Case of Walmart

- Fact 4 presents average across industries, here we look at one specific industry
  - ▶ Advantage is that effect of local entry on number of establishments easier to interpret
- Study Discount Department Stores industry (SIC 8 53119901)
  - ▶ Walmart's primary industry and where Walmart is the top firm
  - ▶ Industry exhibits diverging trends
  - ▶ Event study works well, there is no apparent trend in concentration if we exclude sales of entering Walmart establishments

# Concentration when Walmart Comes to Town

## Average Change in HHI Before and After Walmart Openings

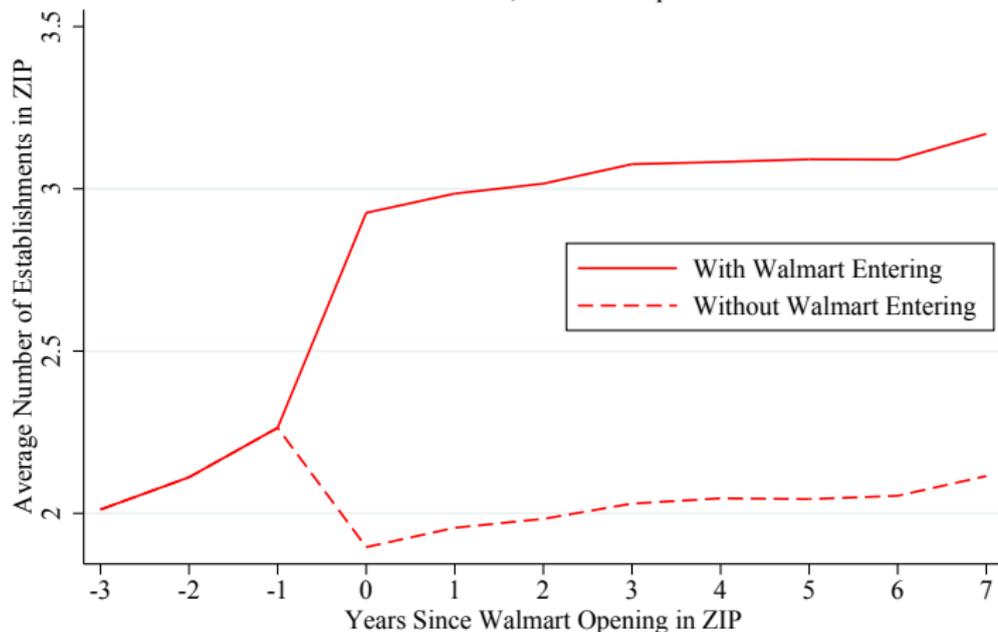
Within SIC8 53119901, Discount Department Stores



# Number of Firms when Walmart Comes to Town

## Avg. Number of Estab. Before and After Walmart Openings

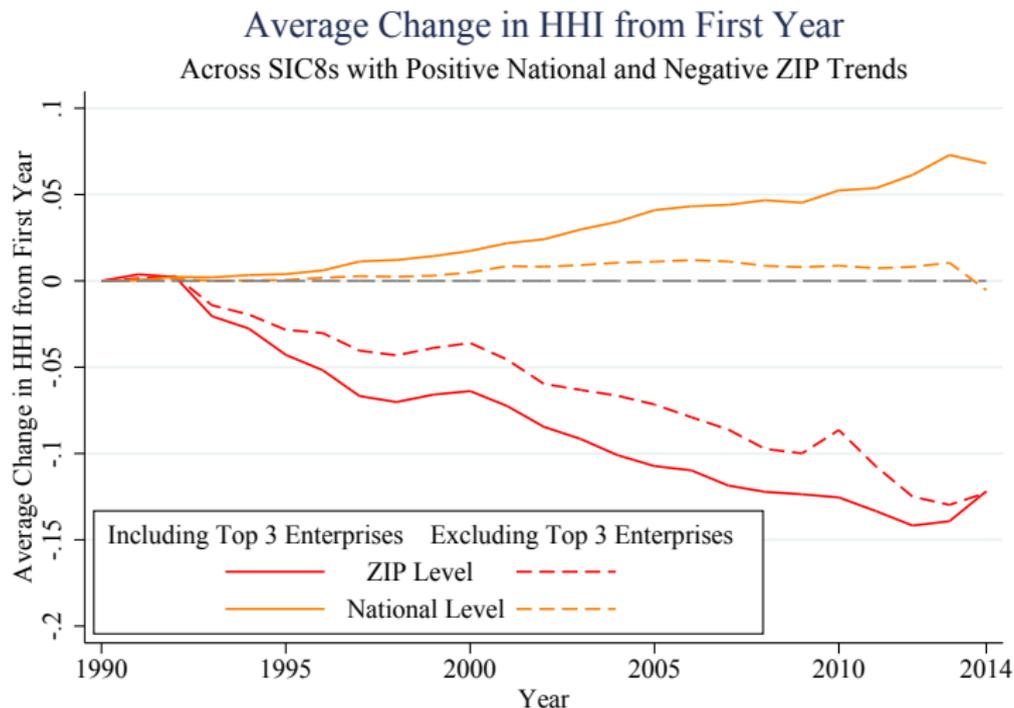
Within SIC8 53119901, Discount Department Stores



# Conclusion

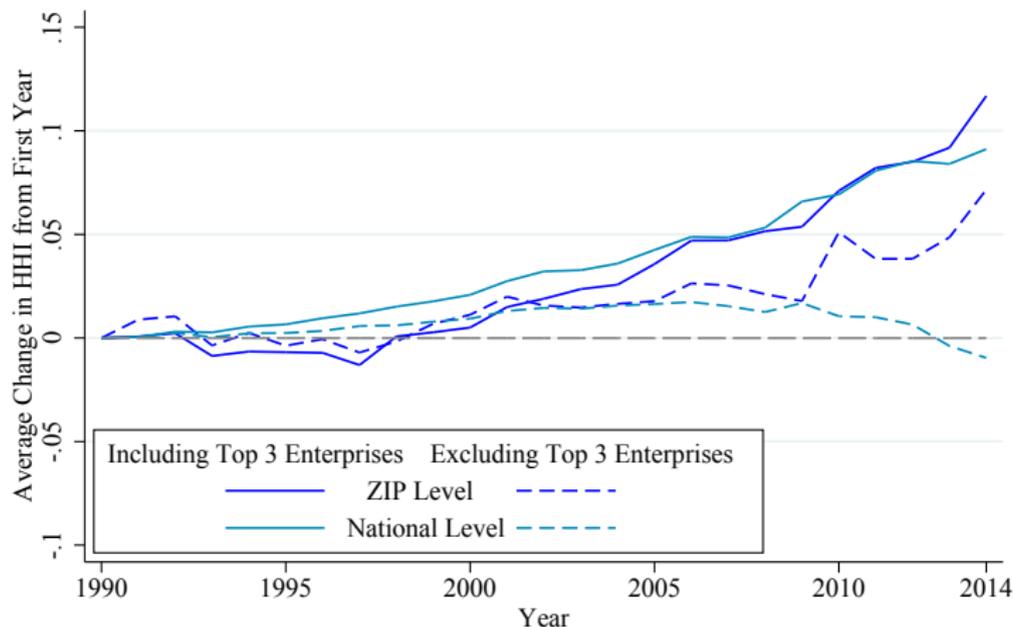
- Rising national concentration is largely driven by expansion of large firms into new local markets
  - ▶ This expansion makes local markets less concentrated and, probably, more competitive
- No theory of product-market competition associates decreasing concentration with increasing markups and profits
  - ▶ Findings help reconcile observations of increasing national concentration but more mixed findings on markups and profits
- In sum, product-market concentration does not seem to be a problem, anti-trust authorities can take a pause
  - ▶ In fact, Carl Shapiro (former top anti-trust official) has been hypothesizing our findings
  - ▶ Of course, large national firms might be problematic for other reasons: political capture, monopsony power, etc.

# Role of Top 3 Firms, Diverging Industries

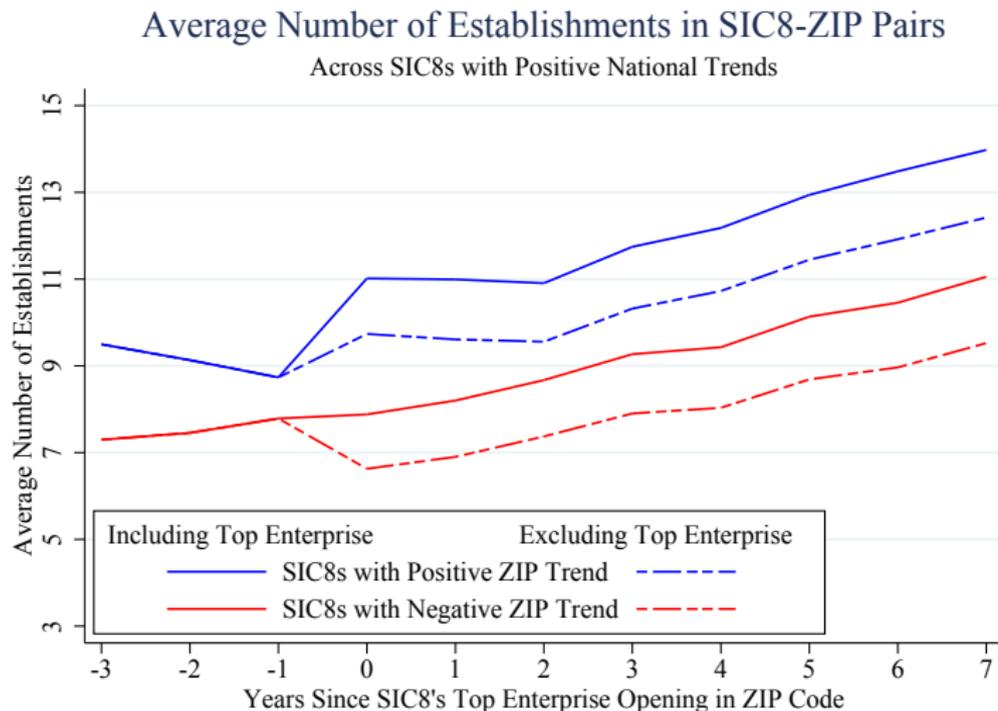


# Role of Top 3 Firms, Concentrating Industries

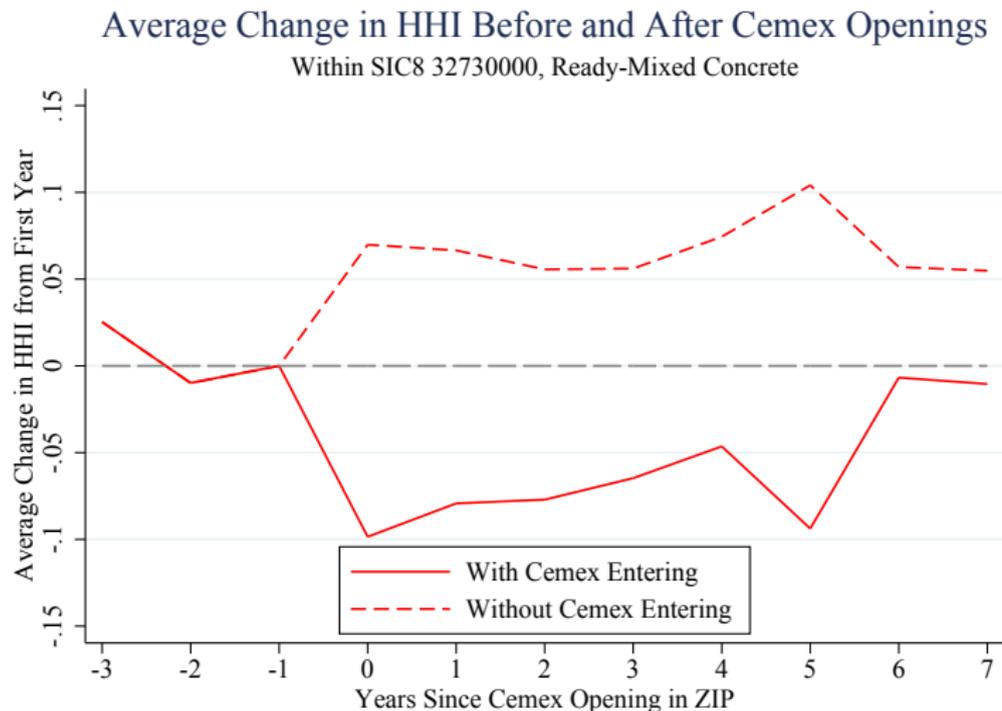
Average Change in HHI from First Year  
Across SIC8s with Positive National and Positive ZIP Trends



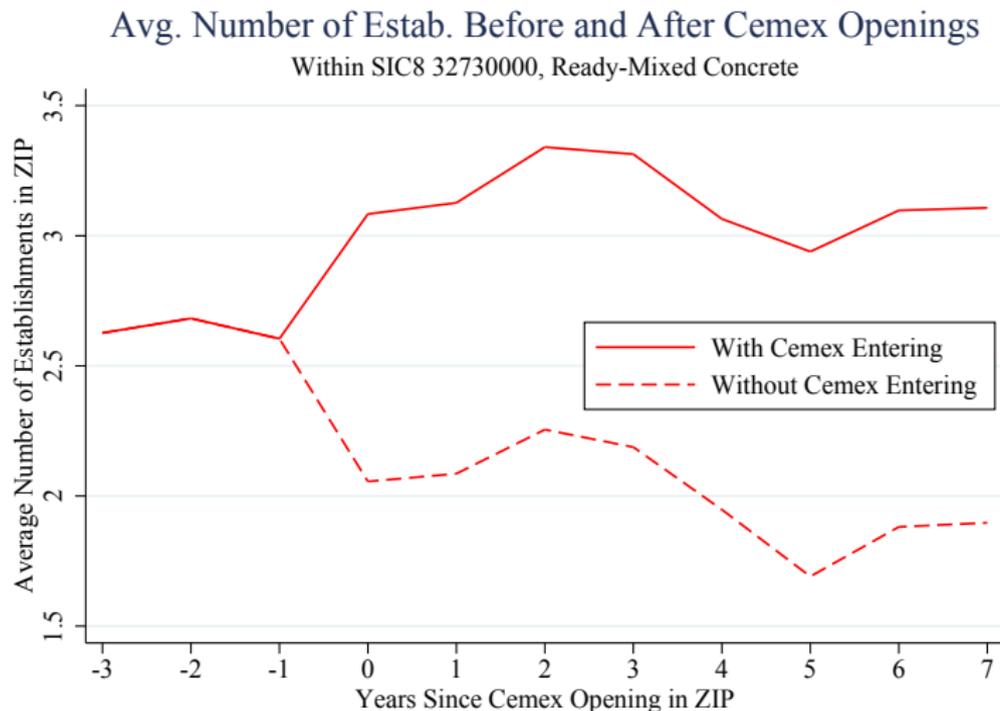
# Number of Establishments and Top Firm Local Entry



# Concentration when Cemex Comes to Town

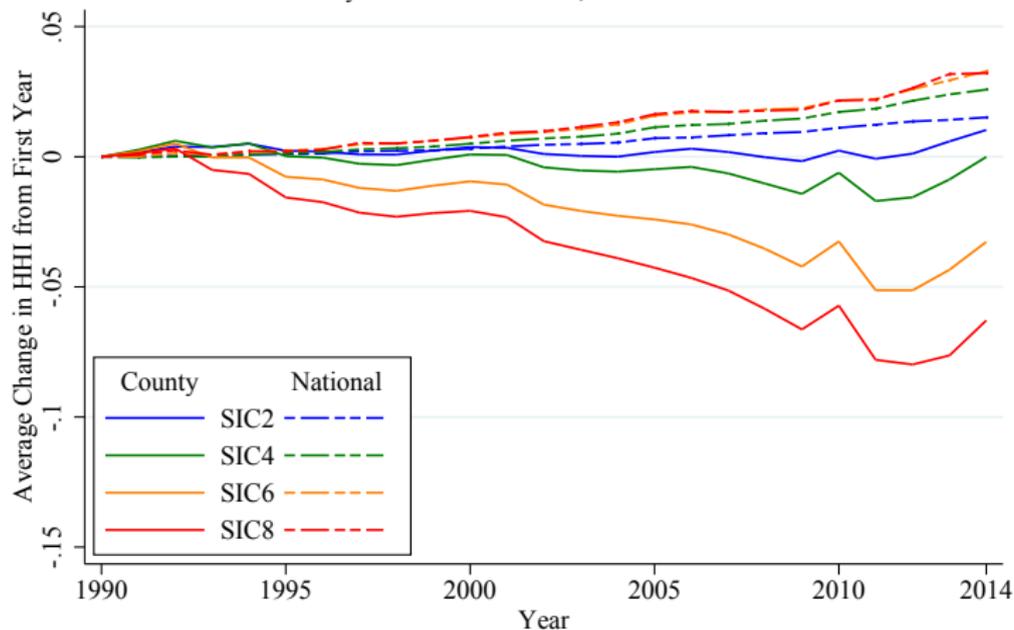


# Number of Establishments when Cemex Comes to Town



# County Sales HHI, Various SICs

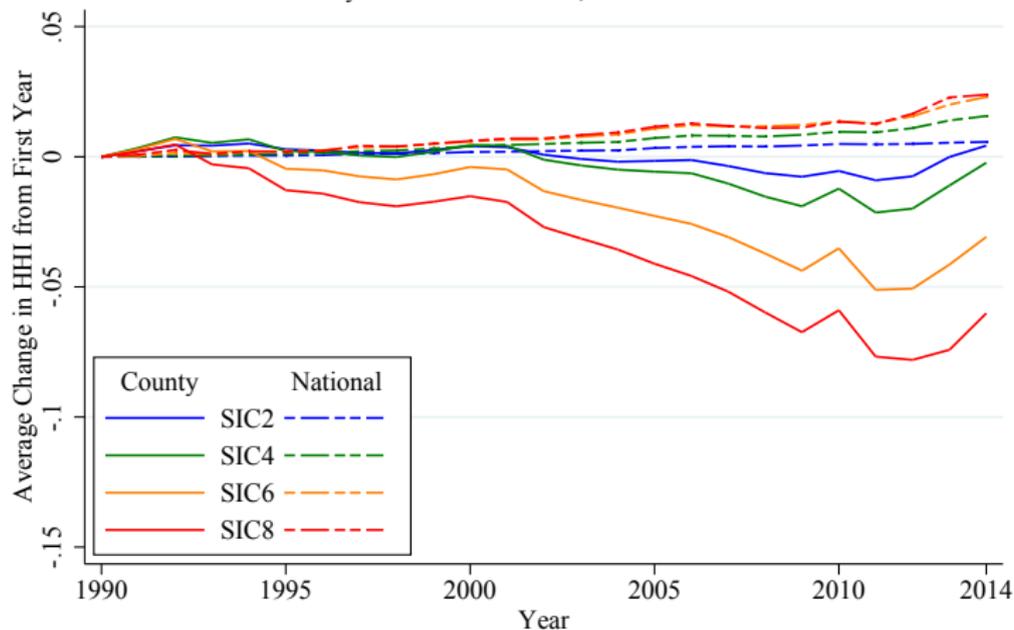
Average Change in HHI from First Year  
County and National Levels, across All Divisions



# County Employment HHI, Various SICs

## Average Change in HHI from First Year

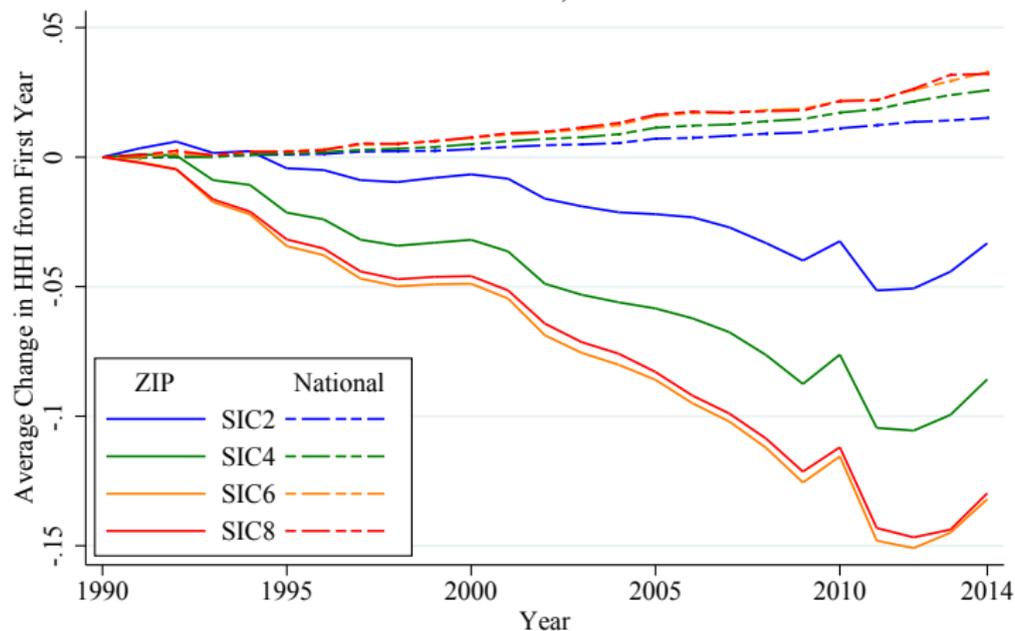
County and National Levels, across All Divisions



# ZIP Sales HHI, Various SICs

## Average Change in HHI from First Year

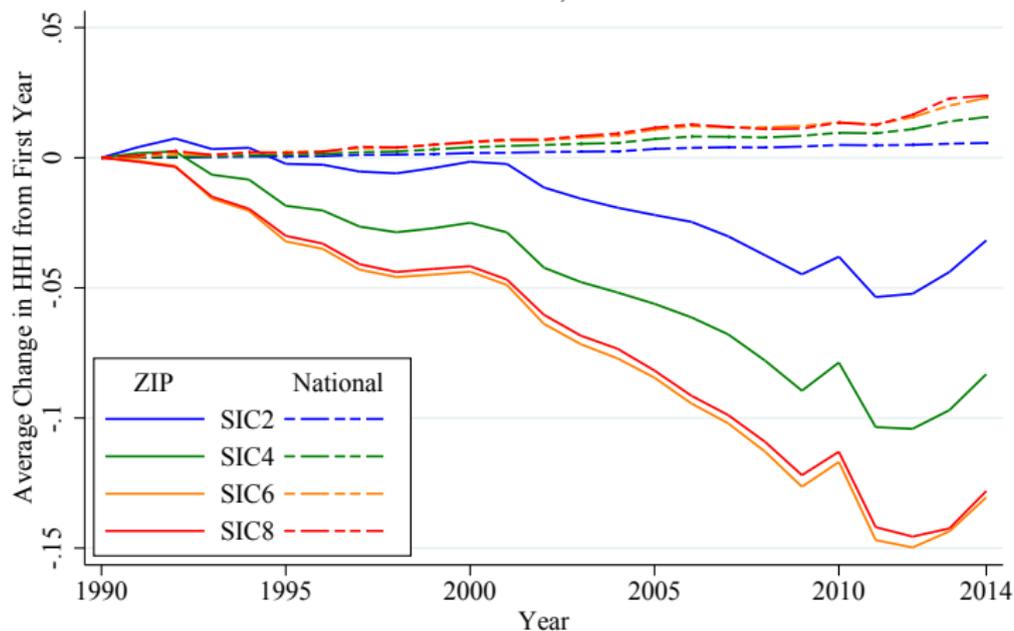
ZIP and National Levels, across All Divisions



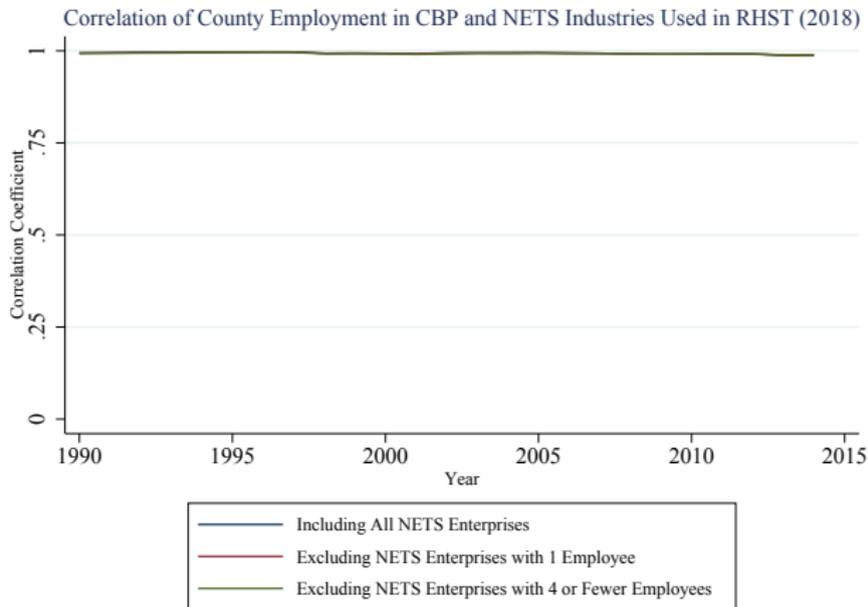
# ZIP Employment HHI, Various SICs

## Average Change in HHI from First Year

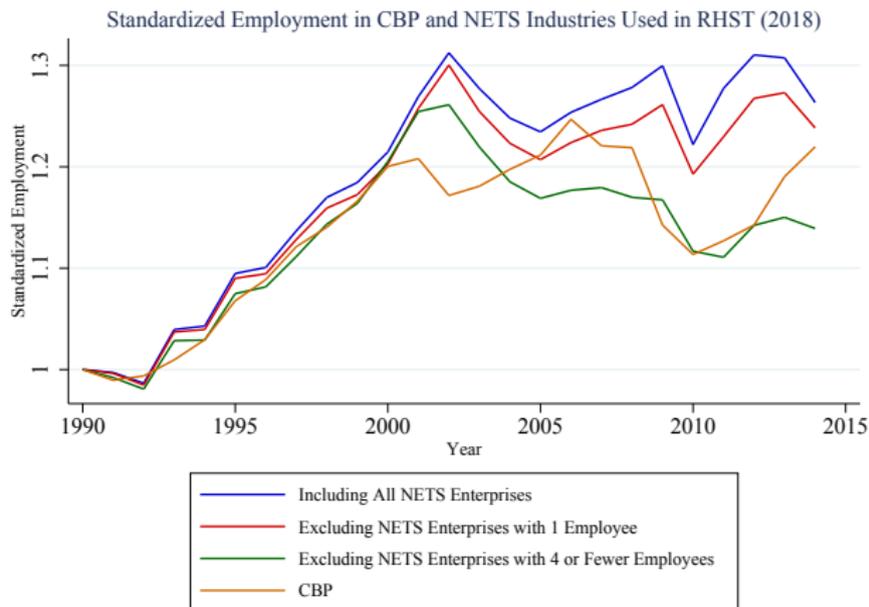
ZIP and National Levels, across All Divisions



# County-Level Employment Correlations in CBP and NETS Industries



# Standardized Employment in CBP and NETS Industries



Data Description