INCENTIVIZING THE MISSING MIDDLE: THE ROLE OF ECONOMIC DEVELOPMENT POLICY

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SHRINKING MIDDLE CLASS

• A wealth of research has documented the hollowing out of the middle class and the increase in income polarization in the United States (Pew Research Center 2015;2016; Reeves et al., 2018; etc.).

• This decline has been linked to losses in middle-skill occupations (Jaimovich and Siu, 2018; Foote and Ryan, 2015; Autor, 2019)
INDUSTRY AND OCCUPATION VARIATION IN JOBS

• Florida et al. (2017) documents the variation across cities in terms of different types occupations
  • Which Florida (2017) links the variation to industry composition across industries.

• Berube (2018) documents the considerable variation in middle-class residents (defined by income) across cities.
WHAT IS THE MIDDLE CLASS?

• Reeves et al. (2018) highlight what has been shown by the previous research
  • That there is no one definition of the middle class

• Three broad definitions arise:
  1. Based on economic resources or income
  2. Based on education or occupation
  3. Based on cultural attitudes, self-definition and behaviors.
ECONOMIC DEVELOPMENT INCENTIVES

• Economic development incentives are the primary policy tool for promoting local economic and employment growth.

• Previous research suggests that incentives have varied effects (Bartik and Erickcek, 2014).
  • Hanson and Rohlin (2011) first put forth the idea of heterogeneous effects
    • They find that the federal Empowerment Zone labor tax credit attracts more labor-intensive businesses at the expense of more capital-intensive businesses.
  • Patrick (2016) demonstrates that capital subsidies result in changes in firm behaviors and local industry composition that limit job creation by shifting the local industry-mix toward capital-intensive industries.
ECONOMIC DEVELOPMENT INCENTIVES

• Freedman (2015), Harger and Ross (2016), and Harger et al. (2018) find that industry-targeted economic development incentives through the New Markets Tax Credit (NMTC) program can cause a sorting of businesses across space
  • However, they are attracting more businesses in the targeted industries.

• Fatehin and Sjoquist (2018) are the first to look potential effects across wage classes
  • Finding that tax policies can cause sorting across wage classes.

• Would other economic development incentives also have distributional effects?
RESEARCH QUESTION

• Are economic development incentives contributing to the hollowing out or decline of the middle class?

• We consider the impact of economic development incentives on employment changes in “middle class” industries.

• We define industries in two ways:
  1. Based on the occupations in that industry
     - Working-class (or middle-skill) is “middle class”
  2. Based on the average wages in that industry
     - Middle-wage is “middle class”
DATA – CLASSIFYING INDUSTRIES BASED ON OCCUPATIONS

• Using data from the Martin Prosperity Institute (MPI)
  • Occupations are classified into four major categories:
    • Creative Class
    • Working Class
    • Service Class
    • Agriculture (not included in our analysis)

• We use 2016 U.S. Bureau of Labor Statistics Industry-Occupation Matrices to link occupations to industries.

• We classify industries as in a category if the highest percentage of jobs is in that occupation category.
Classifying middle class industries is based on the average wage income in that industry using four-digit NAICS data from EMSI, Inc.

Following guidance by the Pew Research Center (2015;2016)
- For each of the 41 household income range categories, we adjust American Community Survey (ACS) we scale the household data based on average household sizes and number of earners.
- We then multiply the individual income for each category by the share of the total number of earners and sum over all categories to get a median income of $30,727.
- Middle class industries include those with incomes between two-thirds to double the median income or within a middle class individual wage range from $20,485 to $61,455 (in 2016 dollars).
DATA – COMPARING INDUSTRY CLASSIFICATIONS

• Middle-wage and working-class industries are not the same.
  • Only about 37% of industries that are working class are also middle wage.

• Some differences include:
  • Administrative and support industries classified as middle wage and service class
    (e.g., skilled nursing facility industry)
  • Industries requiring specialized manual labor classified as working class but high
    wage (e.g., oil and natural gas pipeline industries)
  • High cognitive skill service industries classified as middle wage and creative class
    (e.g., architecture industry and performing arts)
ECONOMIC INCENTIVES DATA

• W.E. Upjohn Institute Panel Data on Incentives (PDIT)
  • Rich data on taxes paid net of taxes and financial incentives across 45 industries (comprising 90% of private sector employment) in 47 cities in 33 states (92% of 2013 private sector GDP)
  • Use the unpublished city-level data
  • Calculate annual 12% discounted net taxes by city and industry as our measure of “incentives”

• Assumptions/Limitations:
  • Assume that city net taxes are representative of MSA net taxes
  • Does not include all industries
  • Does not include all cities
EMPLOYMENT DATA

• From the WholeData Establishment and Employment Database

• Detailed employment data by four-digit NAICS by county from the 47 metropolitan areas, defined by the Core-Based Statistical Areas (CBSAs)
TRENDS IN EMPLOYMENT BY MPI CLASS

- The share of employment in working-class industries is declining.
- The share of jobs in service-class and creative-class industries are increasing.
- Most jobs in service-class, with share of creative-class jobs now higher than working class.
TRENDS IN EMPLOYMENT BY WAGE CLASS

- Largest share of employment in middle-wage industries, but it is declining.
- The share of jobs in low-wage and high-wage industries are increasing.
TRENDS IN INCENTIVES BY MPI CLASS

- Service-class industries face the highest net taxes.
- Here, working-class industries appear to be the most incentivized.
“TARGET” MPI CLASS BY CBSA

2000

2015
• Low-wage industries face highest net taxes.

• Most incentive are high-wage industries.
“TARGET” WAGE CLASS BY CBSA

2000

2015
ANALYTICAL METHODOLOGY – EMPIRICAL DESIGN

• Consider the impact of economic development incentives on employment in specific industries

• Use our typology to classify industries

• Consider the effect on industry-class employment of:
  • The level of incentives in that class
  • The level of incentives in other classes
  • Own-industry incentives relative to other industries

• Empirical Challenge to due endogeneity of incentives
  • Local shocks to industry-class employment may affect incentives
  • Other CBSA level policies may change
  • Other omitted factors influencing industry employment and industry-class incentives?

• Use lagged incentives, CBSA fixed effects, and instrument for lagged incentives.
INSTRUMENTAL VARIABLES

• Incentive Environment Index (IEI) developed by Patrick (2014) and updated.
  • Based on state and local scores on three state constitutional clauses
  • Provide the authority or limit the ability of state and local governments to provide incentives or innovate
  • Most provisions date from the 19th century.

• Bartik-style instruments predicting the employment level in each CBSA in each industry class in each year (using both typologies)

\[ \bar{emp}_{c,k,t} = \sum_{c(i),k(j)} NG_{it} * emp_{i,j,t-1} \]

• Where \( NG_{it} \) is the one-year lagged national employment growth rate by industry \( i \) (four-digit NAICS industry) for each year \( t \) from \( t - 1 \) to \( t \)

• \( emp_{i,j,t-1} \) is the lagged county \( j \) employment in each industry \( i \)

• We sum over all industries \( i \) belonging to class \( c(i) = c \) from all the counties \( j \) in each CBSA \( k(j) = k \) in each year \( t \).
ANALYTICAL METHODOLOGY – INCENTIVES BY CLASS

• For each class $c \in C$, we separately estimate (log) employment in industry $i$ (four-digit NAICS) belonging to class $c(i) = c$ in county $j$ in CBSA $k$ at time $t$ as a function of own-class and other class incentives by:

$$\ln(\text{emp}_{i,c(i),j,k,t}) = \alpha + \sum_{c \in C} \delta_c \text{net taxes}_{c,j,t-1} + \mu_{it} + \vartheta_{kt} + \varepsilon_{i,c(i),j,k,t}$$

Where we instrument for $\text{net taxes}_{c,j,t-1}$
ANALYTICAL METHODOLOGY – RELATIVE INCENTIVES

• For each class $c \in C$, we separately estimate (log) employment in industry $i$ belonging to class $c(i) = c$ in county $j$ in CBSA $k$ at time $t$ as a function of own-class incentives relative to other class incentives using:

$$
\ln(\text{emp}_{i,c(i),j,k,t}) = \alpha + \sum_{c \neq c(i)} \delta_c (\text{net taxes}_{c,j,t-1} - \text{net taxes}_{c(i),j,t-1}) + \mu_{it} + \vartheta_{kt} + \varepsilon_{i,c(i),j,k,t}
$$

Where we instrument for $\text{net taxes}_{c,j,t-1}$ and $\text{net taxes}_{c(i),j,t-1}$
STRONG INSTRUMENTS?

• As shown in paper,
  • Results suggest that the instrumental variables are strong predictors of incentives
## EFFECT OF NET TAXES BY MPI CLASS ON EMPLOYMENT IN MPI CLASSES

<table>
<thead>
<tr>
<th></th>
<th>(1) ln(employment) in service-class industries</th>
<th>(2) ln(employment) in working-class industries</th>
<th>(3) ln(employment) in creative-class industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net-tax rate on service-class industries</td>
<td>-22.63 (28.80) [-0.51%]</td>
<td>-100.6** (41.15) [-2.26%]</td>
<td>0.630 (22.17) [0.01%]</td>
</tr>
<tr>
<td>Net-tax rate on working-class industries</td>
<td>-40.94*** (14.29) [-2.50%]</td>
<td>-53.19*** (17.82) [-3.24%]</td>
<td>-27.81*** (10.68) [-1.70%]</td>
</tr>
<tr>
<td>Net-tax rate on creative-class industries</td>
<td>68.88 (47.00) [2.97%]</td>
<td>169.4*** (57.44) [7.31%]</td>
<td>28.68 (34.84) [1.24%]</td>
</tr>
</tbody>
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## EFFECT OF RELATIVE TAXES ON EMPLOYMENT IN MPI CLASSES

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<tr>
<td>Service class net taxes/Working class net taxes</td>
<td>39.94*** ((13.44)) ([1.54%])</td>
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</tr>
<tr>
<td>Service class net taxes/Creative class net taxes</td>
<td>-64.88 ((43.68)) ([-1.34%])</td>
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<tr>
<td>Working class net taxes/Service class net taxes</td>
<td>103.20** ((40.78)) ([3.97%])</td>
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<tr>
<td>Working class net taxes/Creative class net taxes</td>
<td>-151.50** ((58.92)) ([-2.70%])</td>
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<tr>
<td>Creative class net taxes/Service class net taxes</td>
<td>0.01 ((22.99)) ([0.00%])</td>
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<tr>
<td>Creative class net taxes/Working class net taxes</td>
<td>27.52*** ((10.30)) ([0.49%])</td>
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## EFFECT OF NET TAXES BY WAGE CLASS ON EMPLOYMENT IN WAGE CLASSES

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<th>(1) ln(employment) in low-wage industries</th>
<th>(2) ln(employment) in middle-wage industries</th>
<th>(3) ln(employment) in high-wage industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net-tax rate on low-wage industries</td>
<td>24.34*** (8.71) [0.29%]</td>
<td>28.34*** (10.63) [0.34%]</td>
<td>19.40** (9.63) [0.23%]</td>
</tr>
<tr>
<td>Net-tax rate on middle-wage industries</td>
<td>-6.33 (27.71) [-0.28%]</td>
<td>-46.52** (23.22) [-2.09%]</td>
<td>-33.03 (27.65) [-1.48%]</td>
</tr>
<tr>
<td>Net-tax rate on high-wage industries</td>
<td>-21.41 (29.82) [-1.03%]</td>
<td>40.55 (25.71) [1.96%]</td>
<td>52.03* (29.47) [2.51%]</td>
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## EFFECT OF RELATIVE NET TAXES ON EMPLOYMENT IN WAGE CLASSES

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<tr>
<td>Low wage net taxes/Middle wage net taxes</td>
<td>8.67 (31.15) [0.29%]</td>
<td></td>
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<tr>
<td>Low wage net taxes/High wage net taxes</td>
<td>17.81 (33.95) [0.65%]</td>
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<tr>
<td>Middle wage net taxes/Low wage net taxes</td>
<td>-14.76*** (1.67) [-0.49%]</td>
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<tr>
<td>Middle wage net taxes/High wage net taxes</td>
<td>-9.15 (16.26) [-0.03%]</td>
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<tr>
<td>High wage net taxes/Low wage net taxes</td>
<td>4.34*** (1.28) [0.16%]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High wage net taxes/Middle wage net taxes</td>
<td>-0.28 (15.65) [-0.01%]</td>
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SIZE OF THE EFFECTS?

• Increasing creative-class net taxes by the mean annual change in creative-class net taxes increases employment in working-class industries by 7.31% or about 2,690 new jobs in an average county.

• Increasing incentives for middle-wage industries, increases employment in middle-wage industries by 2.1%, resulting in about 2,467 new jobs in the average county.
WHAT HAPPENS IF A CITY SWITCHES?

• From targeting creative-class industries to targeting working-class industries: San Antonio, TX

• From targeting working-class industries to targeting creative-class industries: Birmingham, AL
WHAT HAPPENS IF A CITY SWITCHES?

Figure 7: Creative-class industry (log) employment trends in San Antonio, Birmingham, and CBSAs with no change in “target” MPI class
Our analysis suggests that economic development incentives are having an effect on the distribution of employment across wage and industry classes.

Using the MPI class definitions,
- Working-class industries face the lowest (on average) next taxes
- This may be good policy, as incentivizing working-class industries can increase working-class jobs as well as employment in other industries
- Thus, one policy may be to increase the taxes on creative-class industries, creating more working-class jobs without negatively affecting service-class or creative-class jobs.

Using the wage-based class definitions:
- High-wage industries are the most incentivized
- But, raising taxes on high-wage industries (or reducing incentives) could potentially increase high-wage jobs and not hurt any industries
- Incentivizing middle-wage industries would have positive employment effects for those industries, without hurting other industries.
POLICY IMPLICATIONS AND NEXT STEPS

• Our results suggest that policymakers can effectively reduce (or worsen) the decline of middle-class jobs through their economic development policy decisions.

• Recent trends toward targeting high-wage or creative-class industries have unintended consequences.
  • And, there is little evidence that such incentives are effective.
  • Additionally, since incentives are not revenue neutral, redirecting incentives away from high-wage and creative-class industries could raise public expenditures for other purposes.

• Future research could help policymakers understand the mechanisms behind these results:
  • Do incentives on creative-class industries hurt working-class industries by putting upward pressure on housing values or input costs?
  • Are the positive (overall) employment effects from lowering net taxes for working-class and middle-wage industries due to their important role in providing intermediate inputs for creative-class and high-wage industries or for driving demand for service-class and low-wage industries?
THANK YOU!

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