Was the Arsenal of Democracy an Engine of Mobility? 
Public Investment and the Roots of Mid-century 
Manufacturing Opportunity

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¹Any views expressed on statistical, methodological, technical, or operational issues are those of the author and not necessarily those of the US Census Bureau. Results disclosed under DRBs #CBDRB-FY20-037 and #CBDRB-FY20-131.
Motivation: Decline in “good-paying” blue collar jobs + economic opportunity in many regions since 1950s

- Potential role for place-based/industrial policy?  (Kline and Moretti, 2014b; Austin et al., 2018; Bartik, 2019; Lane, 2020; Slattery and Zidar, 2020)

Question: What role did WWII government interventions play in creating places with mid-century manufacturing opportunity + upward mobility?

This paper: Study government-financed construction of large new manufacturing plants built for the war

- How did siting affect local development + manuf work opportunity?
- Were plants boons to individuals living in region before war?

Related literature: Effects of WWII on postwar economy (Goldin and Margo, 1992; Fishback and Cullen, 2013; Jaworski, 2017; Brunet, 2018; Bianchi and Giorcelli, 2019; Gross and Sampat, 2020); agglomeration, path dependence, and persistence (Davis and Weinstein, 2002; Greenstone et al., 2010; Ellison et al., 2010; Bleakley and Lin, 2012; Nunn, 2014; Hanlon, 2017; Feigenbaum et al., 2018); place-based and industrial policy (Murphy et al., 1989; Kline and Moretti, 2014a,b; Fan and Zou, 2018; Lu et al., 2019; Bartik, 2019; Lane, 2020); place and intergenerational mobility (Wilson, 1997; Black and Devereux, 2011; Chetty et al., 2016; Chetty and Hendren, 2018a,b)
Industrial mobilization for WWII: Manufacturing output *triples* 1939 - 1942

- Expansion required entirely new plants

Military required large new facilities to be built in secure locations away from major manufacturing hubs (vulnerable to blackout, attack, and congestion)

- But proximate to basic resources (labor, water, electricity)

**Problem:** Often no firm willing to invest in such locations

**Result:** Government paid for plants in locations where firms wouldn’t invest

“*[I]ndustrialists’ reluctance to invest in dispersed plant facilities was at odds with the government’s hope that private capital could finance new inland construction; hence, the war department could carry out its policy only to the extent that the government was willing to put up the money*” - US Air Force Historical Division
Identification Strategy

Among suitable secure locations, siting of government-funded plants was driven by short-run war concerns.

- In the absence of the war, **neither** counties where plants were built, **nor** similarly-suitable sites would have received plants.
Empirical Implementation

Data:

- Newly digitized plant-level investment data from War Production Board
- County-level panel data from Haines/NHGIS/County Data books
- New data on 1970 income rank by 1940 parent earnings rank + location from Massey and Rothbaum (2020) link of 1940 Census and IRS 1040 returns
  - Analogous to regional mobility data from Chetty et al. (2014)
- (Not discussed today: micro-level Social Security data on personal earnings 1978-2016 linked to place of birth and post-1990 CPS ASEC)

Approach:

- Estimate propensity score for siting using 1940 characteristics relevant to wartime siting concerns (access to electricity, water, labor, and basic infrastructure, geography relevant to security)
- Re-weight comparison counties to look like treatment (ATET weights), focus on overlap sample
- Other attributes (income, housing values) are very well balanced
Large, persistent effect on manufacturing output + employment in county
No short-run increase in # establishments
Permanent Boost to Productivity and Pay

Re-Weighting ATET Estimates, Differenced Outcomes

Permanent increase in wage bill per worker
Closely matches output per worker
Permanent Increase in Region Size

Re-Weighting ATET Estimates, Differenced Outcomes

- Employment goes beyond manufacturing (retail, services, etc)
- Median incomes of 1970s/1980s residents are 4% higher
Increased Upward Mobility

Outcome: 1975-1979 Tax Unit AGI Rank

For bottom half, plant is equivalent to having parents 4 percentiles higher

Only find personal earnings rise for white men
Role of Cold War Spending? Two Kinds of Plants

**Ordnance Plant**
Only useful for defense
Post-war mfg driven by defense $$

**General Mfg Plant**
Similar to civilian mfg plants
Post-war mfg *not* driven by defense $$
Large Effects Even Without Postwar Military $\$

Only find growth effects for plants that *could be converted* away from defense.
Only find effects on mobility in places with defense-oriented plants
Plants with largest growth effects not plants with largest benefits for residents
Thanks!

- I hope this was riveting!
References


