Spatially Uneven Pace of Deindustrialization Within A Country

Kozo Kiyota

February 2020

Discussant: Justin R. Pierce, Board of Governors of the Federal Reserve System

Disclaimer

- Any opinions and conclusions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Census Bureau, the Board of Governors or its research staff. All results have been reviewed to ensure that no confidential information has been disclosed.

Brief Summary

- From 1972 to 2012, Japan—as a whole—deindustrialized (i.e. nominal manufacturing value added fell as a share of GDP)
- But the country-level aggregate masks some interesting variation
  - Deindustrialization is concentrated in certain prefectures
  - Some prefectures actually industrialize during this period
- This paper examines why a trend toward deindustrialization differs across regions within Japan
- Provides theory based on models of industry specialization across countries (Redding et al. 2002, 2006, 2008); spatial empirical exercise
- Finds that declines in relative prices for manufactured goods largely explain deindustrialization, offsetting positive effects from TFP growth and capital accumulation
- Contributes to a literature that digs deeper into the effects of deindustrialization to try to understand its implications for adjustment of firms, workers, etc.

Initial thoughts and general comments

- The paper does a nice job of describing the pattern of deindustrialization in Japan over time across prefectures
- We learn that declining relative prices for manufactured goods are behind deindustrialization
- If prices for manufactured goods are determined on a global market, this leaves me wanting to know more about why there are heterogeneous results across regions
- Is variation in deindustrialization simply determined by a shock to prices on the initial (1972) distribution of industries across regions?
- Are there characteristics of regions that make their deindustrialization more/less steep?
  - Demographics (educational attainment, age, etc); Linkages to other regions/sectors (infrastructure); Prefecture-level programs?

Comment 1: Mobility of Manufacturing Sector

- The authors should dig deeper into the extent to which changes in the value added share across prefectures are affected by changes in the composition of activity across regions over the sample period

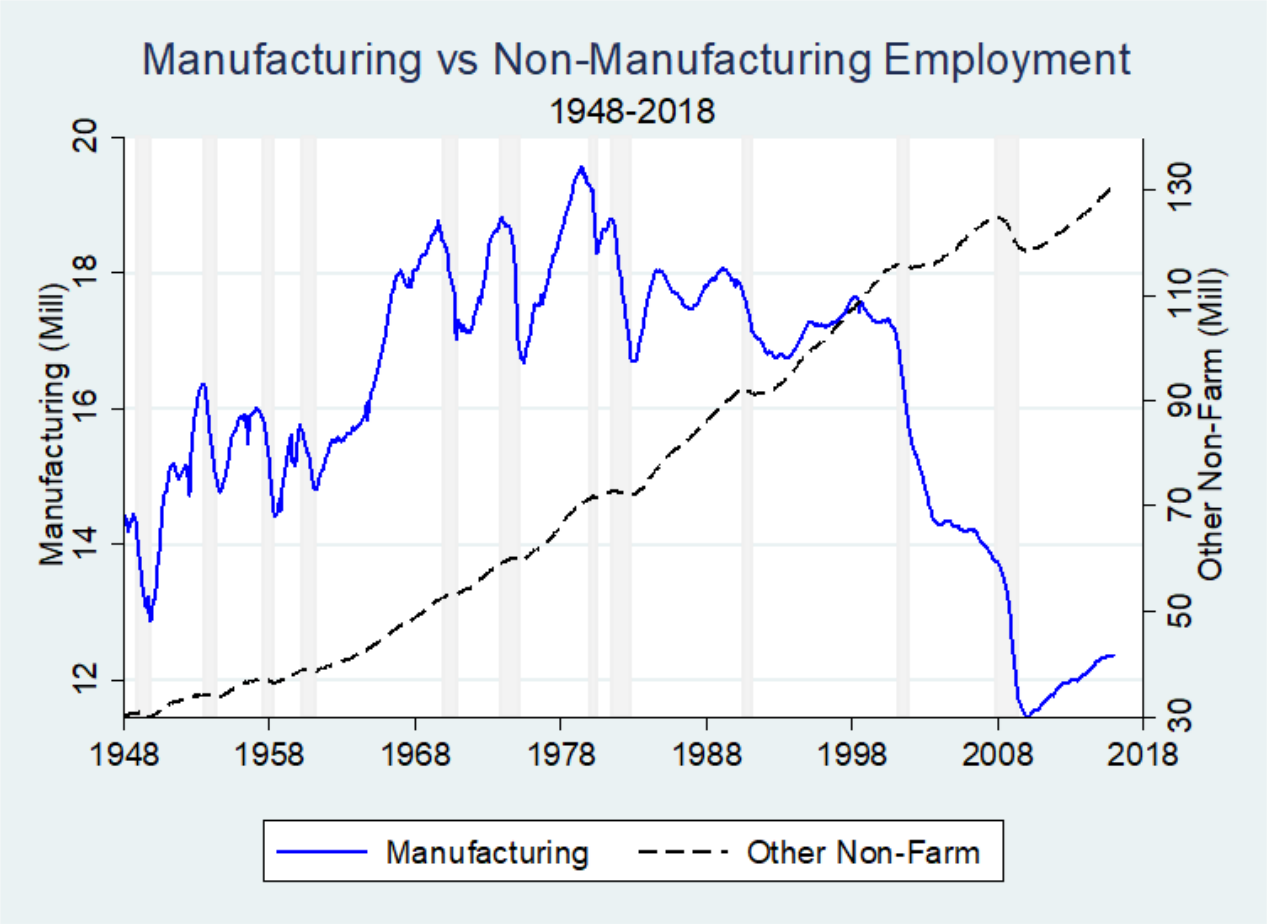
- Does manufacturing activity shift out of high-wage areas (Tokyo, Osaka) toward lower wage areas?

- Policy perspective: Knowing this helps consider effects of adjustment costs to deindustrialization on workers

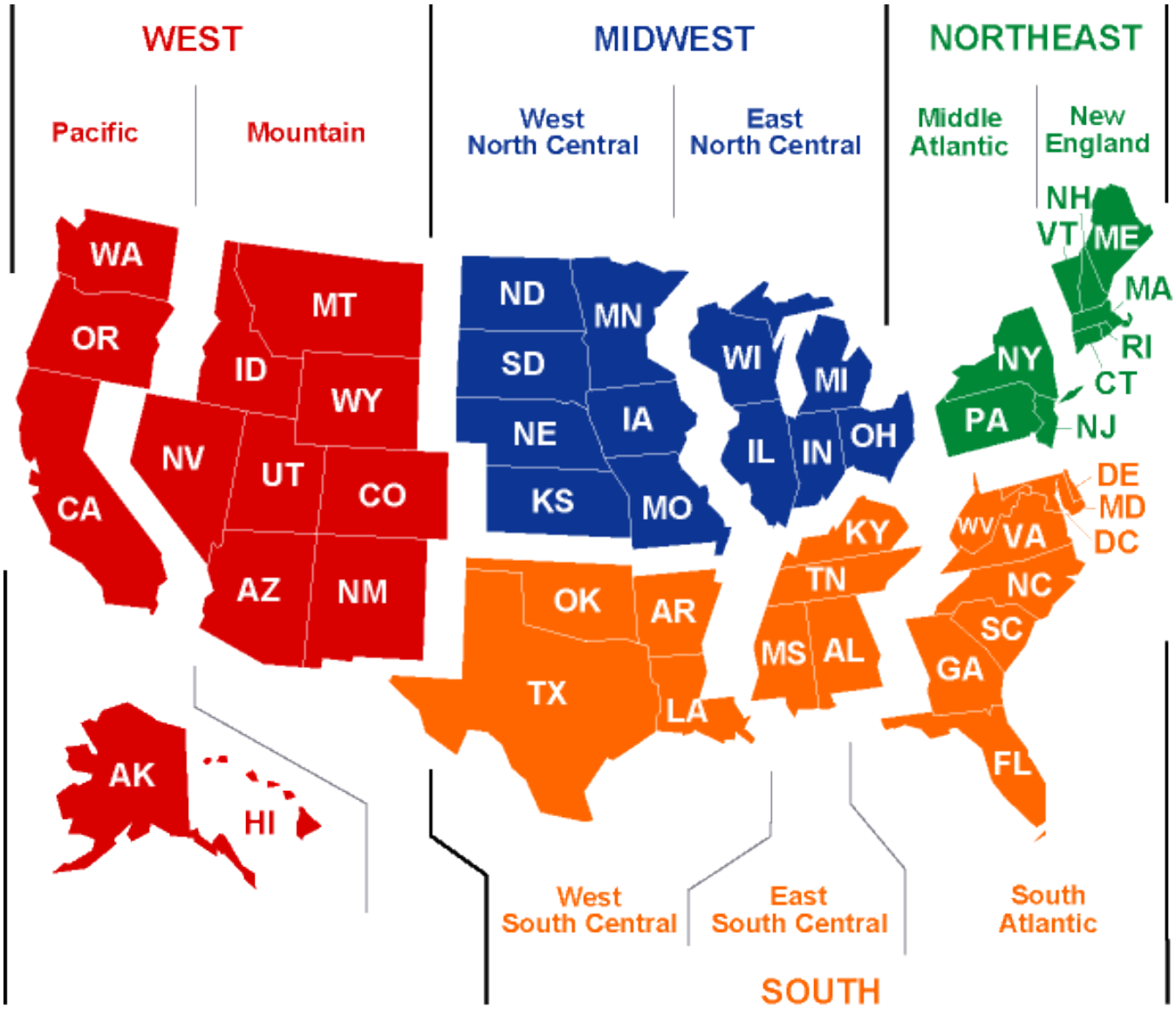
- Measurement perspective: Does the mobility of capital affect measurement of TFP?

- Consider the case of the U.S.

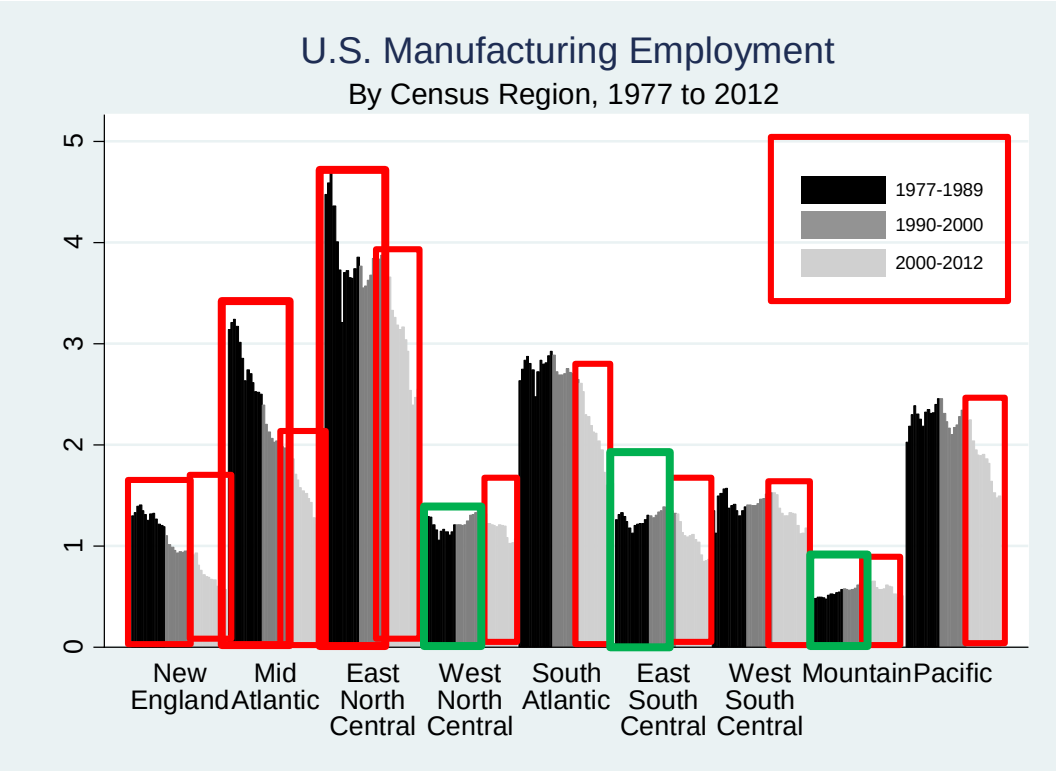
The US Has Also Experienced Deindustrialization



Break the US into Census regions



Manufacturing Employment Across US Regions
Fort, Pierce, and Schott (*JEP* 2018)



- Before 2000:
  - Mfg. employment declines in NE, MA, ENC
  - But increases in south, west
- After 2000: All regions decline
- Some questions raised:
  - Domestic “offshoring”?
  - Effects of post-2000 simultaneous decline on worker adjustment?
- In this paper, how has the pattern of deindustrialization in Japan affected ability of workers to relocate sectors/regions?

Comment 2

- Paper ties nicely into a literature examining the effect of sector-specific trends in productivity on aggregate growth
- The authors could play up this link and potentially contribute to it
- Related papers include Foerster et al. (2020), Fernald et al. (2017)
- Key point of these papers is that a large portion of U.S. aggregate productivity growth is due to sector-specific trends (especially in construction and business services) and that these trends spillover to other sectors
- The authors note the effect of spatial linkages on deindustrialization
- Is deindustrialization the cause or consequence of productivity trends in other sectors?

Comment 3

- Measurement of productivity across industries—always difficult—becomes particularly so when measuring across broad sectors

- Data limitation: Information on two factors of production
  - Physical capital (equipment + structures)
  - Hours worked

- Are we confident we can compare TFP across sectors like business services and manufacturing with these factors of production?

- There are a few measurement concerns that relate specifically to measurement of capital:
  - Equipment and structures are combined
  - Appear to be based on book value
  - Calculation of rental rate could use clarification

Conclusion

- We learn here about some of the driving forces behind deindustrialization in Japan
- There's still interesting work that can be done in exploring the heterogeneity of deindustrialization across regions, and tying the paper to other literatures
- I'd be particularly interested to hear about how the features of Japan's deindustrialization across regions affects success of worker reallocation
- The topic the Kozo explores is important and he has built a solid methodological foundation for considering these issues