Brother, Can You Spare a Manufacturing Job? How Voters React to Deindustrialization

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What led to Donald Trump's surprising 2016 election victory? This paper examines the potential contribution of deindustrialization. Counties differ by exposure to manufacturing, which we use in an instrumental-variable approach to identify the effect of manufacturing job loss on change in Democratic vote share. We find that Democratic vote share falls in counties with high manufacturing job loss since 2004. Disaggregating this result by race shows that the Democratic vote share fell where layoffs affected white populations, and rose where layoffs affected nonwhites. This suggests a racial component to how voters process economic hardship.

I. Introduction

We replicate Baccini and Weymouth (2021), which analyzes the effect of gross manufacturing job losses from 2012 to 2015 on the change in Democratic vote share in the 2016 presidential election.

We extend Baccini and Weymouth's analysis by changing the quantity of interest from **gross** manufacturing job losses to **net** manufacturing job losses. For example, in Baccini and Weymouth's model, if a county lost 400 manufacturing jobs from 2012-2015 and also gained 400 manufacturing jobs over the same period, they would count 400 overall layoffs. Using our measure of *net* manufacturing job losses, we would consider this example a 0 net change in manufacturing employment. Given that job destruction and creation is a natural dynamic within the economy (i.e. seasonal employment, creative destruction), we think that *net* job losses is a more meaningful measure.

Using *net* manufacturing job losses as our outcome, we replicate Baccini and Weymouth's main model, which uses 2012-2015 manufacturing (gross) job losses to explain the change in Democratic vote share in 2016. Using their specifications, we find totally opposite results - that a *net* increase in white manufacturing jobs *increased* Democratic vote share, while a *net* increase in non-white manufacturing jobs *decreased* Democratic vote share.

However, we don't think this is capturing the important dynamic at play. From 2012 to 2015, the national economy experienced a net increase in manufacturing jobs following the 2008 recession (See Figure 1). During this time of recovery,

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counties that experienced the most pronounced manufacturing job losses in prior years were also likely to experience the most pronounced recovery. Because of this v-shaped recovery, focusing only on 2012-2015 job losses/gains paints a distorted picture.

II. Data and Methods

A. Data

Following Baccini and Weymouth (2021), our unit of analysis is the county. This allows us to capture not only the direct effects of deindustrialization on laid-off manufacturing workers, but also on the local economy. The primary outcome variable is the county's change in Democratic vote share between 2012 and 2016. We obtain this from XXXXXXXXX

We want to measure the causal relationship between deindustrialization and the change in vote share. As a measure of deindustrialization, we use the loss of manufacturing jobs as a share of the total beginning-of-period employment in each county. Suppose at the beginning of our period there were 2000 manufacturing workers in a county, and 8000 non-manufacturing workers. At the end there are only 1500 manufacturing workers. This is a loss of $500/10000 = 5\%$.

In this choice we diverge from Baccini and Weymouth (2021), which uses **gross** manufacturing job losses. For example, if a county lost 450 manufacturing jobs from 2012-2015 and also gained 400 manufacturing jobs over the same period, this would be 450 **gross** job losses, but only 50 **net** job losses. The **gross** measure captures several dynamics unrelated to deindustrialization - for example, seasonal unemployment in a food-manufacturing region, or workers moving between jobs. Thus we believe the **net** job losses over a period are the more accurate measure.

Data on job gains and losses are obtained, using an API, from the Census Bureau's Quarterly Workforce Indicators (U.S. Census Bureau (2020)), which contains (among other things) information about employment by industry and county. These statistics are further disaggregated by race and ethnicity. The Census Bureau obtains this data from a combination of sources, such as administrative tax data and the U.S. Census.

XXXXXXXXXXXXXXX sources of other data

B. Methods

We conduct two related tests of our hypothesis. Our first test involves an instrumental-variable approach. A regression of change in Democratic vote share on manufacturing job losses risks endogeneity, in case counties with manufacturing job losses were otherwise predisposed to turn towards Trump (a singular candidate, after all). To mitigate these risks, Baccini and Weymouth (2021) uses a Bartik instrument, which we adapt. This instrument essentially uses the cross-county distribution of manufacturing employment as a source of exogenous variation.

$$b_{j,c} = \frac{\text{Manufacturing Employment}_{j,c} \text{ at } t_0}{\text{Total Employment}_c \text{ at } t_0} * \frac{\text{National Manufacturing Job Change}_{j,c}}{\text{Total National Employment at } t_0}$$

Using this instrument, we then conduct a two stage regression. First we estimate manufacturing job loss with the Bartik Instrument

If we expand our measure of net manufacturing job losses to include the 2004 to 2011 period - which covers most of the period when the U.S. manufacturing economy was hit most intensely (See Figure 1) – we get a result that corroborates the core intuition of Baccini and Weymouth (See Table 4). That is, we find that net white manufacturing job losses decreased Democratic vote share, while net non-white manufacturing job losses increased Democratic vote share.

It is important to highlight the substantive importance of the *timing* of manufacturing layoffs on political outcomes. Whereas Baccini and Weymouth's analysis suggests that economic changes lead to immediate political consequences, our analysis shows that economic changes can have lagged and variable effects on political outcomes. The mechanisms of these lagged effects merit further study.

[Note: to demonstrate our point about **variable** effects, In our next iteration of the analysis, we will show that manufacturing job losses had little explanatory effect on changes in Democratic vote share in other elections (2012 and 2020).]

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REFERENCES

Baccini, Leonardo, and Stephen Weymouth. 2021. "Gone For Good: Deindustrialization, White Voter Backlash, and US Presidential Voting." *American Political Science Review*, 115(2): 550–567. Publisher: Cambridge University Press.

U.S. Census Bureau. 2020. "Quarterly Workforce Indicators, 1990-Present."

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Mathematical Appendix