The Effects of Trade Exposure on Unionization Rates

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ABSTRACT

This paper observes the direct effects of Chinese import competition on the share of labor union participants in American manufacturing. There is substantial evidence that increasing trade with China has led to a faster than expected decline in traditionally labor union-heavy industries such as manufacturing. However, there is limited evidence that this trade shock contributes to the secular decline in the proportion of workers represented by unions. The data and regression on labor union share suggest that trade exposure accounts for only 1.44 percent of the average 15 percent decline. This paper also explores the impact of Right-to-Work laws and the policy implications of these findings.

We pursued the strategy that led to structural trade deficits on purpose, because it pitted the workers of our trading partners against our own, and against each other. For their part, our trading partners short-changed their domestic markets in favor of supplying America, so they, too, pushed weak unions, low wages, artificially cheap currency and subsidies for foreign investment like tax-free export zones.
-Richard Trumka, United States labor leader (2014)

In our glorious fight for civil rights, we must guard against being fooled by false slogans, such as 'right to work.' It is a law to rob us of our civil rights and job rights. Its purpose is to destroy labor unions and the freedom of collective bargaining by which unions have improved wages and working conditions for everyone. Wherever these laws have been passed, wages are lower, job opportunities are fewer and there are no civil rights. We do not intend to let them do this to us. We demand this fraud be stopped. Our weapon is our vote.
- Martin Luther King (1961)

1 Introduction

The American labor movement has fallen far from its glory days of the 1950s. From 1987 to 2007, labor union participation has fallen from around a third of working America to around only 10 percent. Private-sector unionization rates have declined even further to around 6 percent, while public sector unionization rates remain at 35 percent. There is substantial evidence that the decline in labor union participation has been a consistent contributor to the decline in labor share of income and troubling trends in income inequality (Card, 2003). One paper shows that declining labor union participation has contributed to between a fifth and a third of the rise in income inequality during this time period (Gosling and Machin, 1995).

One explanation for the secular decline in aggregate labor union participation rate was exposure to trade, and the ability of multinational enterprises to relocate to

areas with fewer labor protections. It is also thought that trade could be the main driver of the decline in labor union participation within the manufacturing sector. The theory is that global trade forces workers in different nations to compete with each other and that, because union workers demand a higher wage they would be more exposed to import competition than lower-wage non-union workers. One implication of this logic is that Right-to-Work states, which have considerably lower unionization rates and noticeably lower wages, might be less vulnerable to trade exposure, and would therefore see a smaller decline in their manufacturing sector.

This paper seeks to test the validity of this intuition by capitalizing on the heterogeneity created by the China trade shock. I will work through a previously established theoretical model created by Autor, Dorn and Hanson, with some slight modification to include industry sub-sector instead of commuting zones. This model will be contextualized and used to explain the empirical results. I then cover the differential effects created by Right-to-Work status and then move on to discuss the impact these findings could have on policy debates.

China became a major player in the global stage in the late 1990s, and joined the World Trade Organization in 2001. Prior to this inclusion, studying the effects of trade on United States labor outcomes was challenging as imports from low-income counties have been very limited. Although all forms of trade may have some impact on domestic labor, trade with a country that has a significant comparative advantage in unskilled labor, should be more disruptive and have greater distributional consequences. This type of comparative advantage also leads to an unequal burden of free trade agreements and rising inequality.

China's rise to global prominence officers a phenomenal natural experiment in which to study the effects of import penetration on a number of factors, most notably on manufacturing employment. Recently, researchers have begun to measure the exogenous variation in trade exposure on different sub-sections of the manufacturing

industry and exploit this source of heterogeneity to study the effect empirically. This is the primary contribution of Autor, Dorn, and Hanson (2013). Another influential paper by Justin Pierce and Peter Schott uses a different source of variation. In their 2016 paper, they examine the varied effects of tariff predictability on manufacturing employment to determine the empirical relationship. All authors came to the same conclusion: import competition has a strong direct effect on manufacturing employment.

This paper relies heavily on the data provided by David Dorn on import penetration, and as such, the key methods and limitations of their data will be reviewed. I use this data to run a regression on trade exposure and the change in labor union share. I find a small but statistically significant effect consistent with the findings of other papers. Possible explanations for this somewhat surprising result are the focus of the rest of the paper. The primary focus is the effect of state-level labor protections, specifically states Right-to-Work status. This presents another source of heterogeneity that can be used in conjunction with our previously developed trade framework to attempt to explain why manufacturing has fallen much more sharply in Right-to-Work states. This runs contrary to the idea that higher-wage firms will be more vulnerable to import competition.

This paper contributes to three substantial literatures. The first is the papers that present a broader look at possible causes of de-unionization such as Fortin and Lemieux, (1997); Faber and Western (2001); Western (1995); Card (2003); Gaston (2002); Rosenfeld (2014). The most closely related papers are Slaughter, (2007); Baldwin, (2003); Arbache, (2004); Ahlquist and Downey, (2020); and Magnani and Prentice (2003). Most of these papers look at older data sets and lack the specification presented by either Autor, Dorn, and Hanson or Pierce and Schott. Ahlquist and Downey use similar data and methods and come to a similar conclusion.

The second literature studies the effect of the recent trade shock on American

labor markets. Most notably Autor, Dorn, and Hanson (2013), Pierce and Schott (2018), and (2016). Other recent works have continued this trend in utilizing the China shock, such as Lorenzo et al., (2019), Jakubik and Stolzenburg (2020), and Bloom et al., (2019). As unionization relates to inequality, this paper is also speaks to recent studies of the effects of trade on populism such as Rodrik, (2017) and Dorn et al., (2020). If trade exposure has a relationship with unionization, then using connections between union share and income inequality and populism could offer an additional covariate for those studying the ramifications of trade policy.

The third, older group of literature I will be contributing to studies the effect of Right-to-Work laws. These include Farber, (1984); Stevans, (2009); Moore, (1998); Minor, (2012) and Haskett, (2020). States do still occasionally become Right-to-Work states- the most recent of which was Kentucky, which only became one in 2017. While it is not at the forefront of policy debates in most states, the effects are important and interesting to consider. They also provide a natural experiment in which the ties between unionization and other factors such as wages and inequality can be observed. However, the challenge of separating the effects of these laws from the general policy environments in these states presents quite the challenge. It is far simpler to just observe the effects on unionization.

2 Theoretical Motivation

In this section I review theoretical channels in which Chinese import competition affects the demand for domestic goods and how a change in demand could impact collective bargaining. This is mostly following the work in the online appendix provided by Autor, Dorn, and Hanson.

To determine the effects of trade on employment outcomes I use a small two-economy model. I then examine the impact of productivity growth in China on United States wages, traded employment, and non-traded employment. To keep the

analysis simple, I ignore trade barriers and assume the traded sector consists of a single homogeneous industry (products vary in quality). I start with the following equilibrium.

$$W = \eta P_N L_N^{\eta-1}$$
$$P_N L_N^{\eta} = (1-\gamma)(WL + B)$$
$$P = \tfrac{\sigma}{\sigma-1}\beta W$$
$$L = L_N + Ml(1)$$

W is the United States wage relative to China's wage, B is the difference between United States aggregate expenditure and United States aggregate income and the units are China's wage and L is the total sector employment. The final equilibrium condition is that supply equals demand for each quality of traded goods. This is why the product market being heterogeneous is important.

$$x = \frac{P^{-\sigma}\gamma\left(WL + L^*\right)}{M\Phi^{1-\sigma} + M^*\Phi^{*1-\sigma}}$$

For the China portion, there are a corresponding set of equilibrium conditions, where I label China values using an *. Because trade costs are assumed to be zero, $x/x* = (P/P^*)^{-\sigma}$, which together with the price-equals-marginal cost conditions in the U.S. and China imply that $W = (\beta^*/\beta)^{(\sigma-1)/\sigma}$, or that the U.S.-China relative wage is a function of relative labor productivities in the two countries. I can do this because the transportation costs or any other additive costs that could be associated with differences in labor rights or unionization are being ignored.

Combining these conditions in with the corresponding ones for China and incorporating the solutions for W, P, and P^* , we have a system with six equations and six unknowns ($P_N, P_N^*, L_N, L_N^*, M$, and M^*). We assume that the only shocks to the system are productivity growth in traded-good production in China ($\beta^* < 0$) and an increase in the U.S. trade deficit/China trade surplus ($\beta^* < 0$). Log differentiating,

we have that $\hat{W} = \bar{\sigma}\hat{\beta}^*$, where $\bar{\sigma} \equiv \frac{\sigma-1}{\sigma}$, implying that the U.S. relative nominal wage declines in proportion to productivity growth in China The other equilibrium conditions are that:

$$
\begin{aligned}
P_N &= \sigma\hat{\beta}^* + (1-\eta)\hat{L}_N \\
\hat{P}_N^* &= (1-\eta)\tilde{L}_N^* \\
\hat{P}_N &= \rho\sigma\tilde{\beta}^* + (1-\rho)\hat{B} - \eta\dot{L}_N \\
\bar{P}_N^* &= -(1-\rho^*)\hat{B} - \eta\tilde{L}_N^*
\end{aligned}
$$

$$
\begin{aligned}
L_N &= -\tfrac{\delta}{1-\delta}\hat{M} \\
\hat{L}_N^* &= -\tfrac{\delta^*}{1-\delta^*}\dot{M}^*
\end{aligned}
$$

where $\rho = WL/(WL+B)$ is the initial share of labor income in total U.S. expenditure, $(1-\rho) = B/(L-B)$ is the initial ratio of China's trade surplus to its aggregate expenditure, $\delta = Ml/L$ is the initial share of U.S. employment in traded goods, and $\delta = M^*l^*/L^*$ is the initial share of China's employment in traded goods. Solving the system in we obtain

$$
\begin{aligned}
\hat{L}_N &= (1-\rho)\left(\hat{B} - \bar{\sigma}\hat{\beta}^*\right) \geq 0 \\
\hat{L}_N^* &= -(1-\rho^*)\hat{B} \leq 0 \\
\hat{M} &= -\tfrac{1-\delta}{\delta}(1-\rho)\left(\hat{B} - \bar{\sigma}\hat{\beta}^*\right) \leq 0 \\
\hat{M}^* &= \tfrac{1-\delta^*}{\delta^*}(1-\rho^*)\hat{B} \geq 0 \\
\hat{P}_N &= \hat{\beta}^* + (1-\eta)(1-\rho)\left(\hat{B} - \bar{\sigma}\hat{\beta}^*\right)0 \\
\hat{P}_N^* &= -(1-\eta)(1-\rho^*)\hat{B} \leq 0
\end{aligned}
$$

It is the case that productivity growth in the traded sector in China lowers U.S. employment in traded goods and raises U.S. employment in non traded goods, where these results are conditional on the U.S. running an aggregate trade deficit. Because of this spillover the place where these workers ends up will be important to understanding the aggregate effects of trade on aggregate unionization rates. In the

future I would like to incorporate models of collective barraging into this trade model to better understand the effects.

Existing research that suggests higher unionization rates increase productivity and wages (Doucouliagos and Laroche, 2003; Sojourner et al., 2015; Eichengreen, 1987) and more unionized jobs are generally tied to the production of higher quality goods (Clark, 1980; Cooke, 1992: Kugler and Verhoogen, 2011). Because of this it might be the case that even while union firms have higher labor costs they might be less affected by trade. If they find themselves in a heterogeneous goods market with the ability to produce higher quality goods then they might be able to insulate themselves.

3 Sources of Heterogeneity

The source of exogenous variation in manufacturing subsector trade exposure is pulled from Autor, Dorn, and Hanon. David Dorn and Peter Schott both make exposure data available for use. Dorns data is somewhat easier to use, and I find their method more convincing and robust, so that will be my only source for trade data. The primary downside is that this data is only available up until 2011, and only contains exposure data for manufacturing. The impact of trade is felt outside of the manufacturing sector, so returning to this analysis with broader data would strengthen the results of this analysis.

The data on unionization rates is taken from the annualized Current Population Survey that includes the Annual Social and Economic Supplement (ASEC). This micro data is made available through the IPUMS website. The variables include industry employment, union employment and state codes. This data is available every year, so a more sophisticated time series analysis could be used. For simplicity, I will only look at changes from 1990 to 2011, as this is most compatible with the Autor, Dorn, and Hanson data, which also looks at total change during this period

as opposed to year by year changes. The micro data is grouped by industry to give total employment and union employment for n=236 industries. Then, dividing union employment by total employment to find union share for 1990 and 2011, and finally using these two to find percent change in union share. After removing all non manufacturing industries we are left with n=64.

One of the primary challenges in trade-to-labor analysis is translating trade data, which works in goods classifications, to employment data which works in sector classifications. Thankfully, this rather exhaustive process has already been done for manufacturing; however it presents a significant roadblock to generate my own data if I want to look outside of manufacturing, or create a more recent data set.

Another challenge with using these two data sets is that the CPS uses the North American Industry Classification System (NAICS), while Autor, Dorn, and Hanson use the much more specific Standard Industrial Classification (SIC). This presents a data translation issue, as the SIC offers n=357 manufacturing industries. Others who have used these two datasets compress SIC data into NACIS classification using an industry size weighted average. This process was a bit to complex and relied on only weighting by 1990 averages, so instead I expanded NACIS union share data out onto the SIC data. This might not be appropriate, but I'm making the assumption that union share in SIC industries are somewhat homogeneous and relative to their broader NASIC values. Ahlquist and Downey make the opposite assumption; that changes in import exposure can be averaged to NACIS classifications.

4 Threats to Identification

Threats to Identification are very similar to the issues faced by Autor, Dorn, and Hanson in their analysis. This will mostly be a summary of the problems they face, and justifications to their approach. Their tests for identification are complicated, but seem robust. They settle on an instrumental variable approach, and that is also what

I will be using my analysis. Their IV approach identifies rising Chinese productivity and changes to trade costs as components of United States import growth.

The first threat is demand shocks, which may be correlated across all countries used to construct the data set. If this is the case, the IV estimate could be polluted by correlation between import growth and cross country unobserved changes in product demand. This could minimize labor market outcomes of trade exposure. Autor, Dorn, and Hanson conduct robustness checks in which they substitute United States import growth with an estimated change in China's comparative advantage in labor and cross country variation in market access schedules.

The second threat to identification is that skill biased technology change shocks could be driving imports from China. For example, if the United States has strong productivity growth in automobile manufacturing and no productivity growth in textiles, then sales of textiles could fall, causing capital to shift away from that industry, then causing a rise in imports. This possibility can't be fully ruled out, but it's hard to imagine this type of interaction taking place in the context of Chinese and American total factor productivity growth. Brandt, Van Biesebroeck, and Zhang (2012) estimate that from 1998 to 2007, manufacturing TFP growth in China grew 8.0 percent while the BLS estimates that it grew only 3.9 in the United States. This does not rule out the possibility of variance within manufacturing. There is no data on differences in TFP growth within different manufacturing sectors so this could still be an issue. The assumption that TFP growth is somewhat homogeneous for all manufacturing sectors both in China and in the United States isn't one I would like to make.

A third threat to identification is that the growth in imports from China is caused by technology shocks that have occurred in all developed nations. In this case, instead of Chinese import competition pushing high-income nations towards automation, automation has driven import growth from China. This also does not seem likely. Bloom et al., (2011) finds a strong and causal relationship between

import competition and automation that helps dismiss this issue. Autor, Dorn and Hanson find that Chinese trade has grown to take up an overwhelming portion of imports from lower income counties. This growth has been stronger than even low income countries that typically have some sort of trade advantage during this period, such as Mexico through NAFTA. They conduct quite a few robustness checks laid out in their online theory appendix, such as a modified gravity model of trade that help them dismiss this threat. In summary, they feel the best approach is to use their measurements of change in imports per worker as an instrumental variable and conclude that changes in trade level are analogous to changes in productivity.

A final threat specific to this paper is that unionization rates in an industry will have an impact on the change in import penetration. In this case, international firms could look at union density as information driving their choice to outsource or invest directly in other countries. In this way, union share could drive trade and not the other way around. The Ahlquist and Downey paper examines this possibility by including a few key covariates that have a relationship with both trade and unionization: a dummy variable for textiles, capital intensity and skill share. After accounting for these they find that the lagged relationship between 1990's union share and Chinese imports is negated. This analysis in conjunction with the test conducted by Autor, Dorn, and Hanson led me to feel confident treating the change import penetration as an exogenous variable fit for use in this analysis.

5 Results

The result of this paper is an estimation of the effect of Chinese import growth on manufacturing sector labor union share. This finding is shown in the table below. The regression implies that a standard deviation increase in import competition decreases union share by 1.44 percent. For context the average manufacturing industry fell by 13.2 percent during this time.

Table 1: Results

	Dependent variable:
	Change in Union Share
Import Exposure	-0.014***
	(0.003)
Observations	356
R^2	0.050
Note:	*p<0.1; **p<0.05; ***p<0.01

This was quite a surprise to me, as it is to other researchers who came to the same result. Seeing that unionized firms pay higher wages, one might expect industries with higher rates of unionization would be less competitive and more affected by an influx of low-wage labor leading to a stronger effect. Ahlquist and Downey estimates import competition only accounts for 17 percent of the average decline in unionization. A weak or non-existent effect was also found by Slaughter, (2007) and Baldwin, (2003) although their explanations vary.

The primary rationale behind this finding is that perhaps unionized firms don't compete with Chinese firms in the same way non-union firms do. As was cited earlier, there is a fair amount of evidence that unionized firms pay higher wages, and that unionized workers are more productive and product higher quality goods. If we hold to the assumption that labor is generally industry heterogeneous in skill and productivity, why haven't manufacturing firms moved their operations from high union states to states with fewer labor protections? This leads to the explanation that unionized firms are not typically competing in the same low-quality food markets that

Chinese producers operate in.

The Ahlquist and Downey paper uses two primary tests of this theory. The first creates a dummy variable tied to how homogeneous the specific industry is. The idea here is that some industries produce homogeneous goods such as steel or lead, while other industries produce heterogeneous and often branded goods such as computers or shoes. The hypothesis is that if unionized firms tend to produce higher quality goods then they should only be able to do so if they operate in a heterogeneous goods market. Running the regression again, but this time with only heterogeneous industries, they find that one standard deviation in import exposure reduces union density by just 0.8 percentage points. For industries that produce only homogeneous goods, the decline in density is 3.2 percentage points.

This result suggests unionized firms in heterogeneous markets are more protected from import exposure than their homogeneous industry neighbors. It is consistent with the earlier hypothesis that homogeneous goods-producing firms will be unable to create higher quality goods to differentiate themselves from import goods. It also supports the idea that unionized firms produce higher quality goods.

6 Spillover Effects

The case for a relationship between import exposure and labor union share seems weak at this point. However, the broader effects of trade on United States labor should still be considered. It might seem reasonable that the effects are still largely detrimental. If trade has had a negative impact on manufacturing employment and manufacturing accounts for a large portion of United States union workers, then presumably trade has still had a negative effect on aggregate unionization rates. However, this is not the case. United States manufacturing has seen the same general decline in unionization rates that most other private sectors have faced, with current rates as low as 15 percent. If the Autor, Dorn, and Hanson results are correct,

skill-biased technology is the primary reason for the secular changes in manufacturing employment. So in having such a small effect on manufacturing employment which already has a small labor union share, the border effects seem negligible. The Ahpquist and Downey paper strongly emphasizes the importance of spillovers from manufacturing onto other sectors. Unemployed manufacturing workers could be moving to dramatically higher unionization rate industries, such as construction, or they could find a job in the public sector, where unionization remains at around 35 percent. By considering this movement, the authors even go so far as to say the effect of the trade shock on total private-sector unionization has actually been positive.

Another way to analyze the effects in the context of total unionization is to consider the effects on marriage markets. Recently Autor, Dorn, and Hanson, (2019) tested the hypothesis that a contraction in stable, well paying blue-collar employment has dramatically reduced marriage value of young adult men. This trend has only had negative health effects, but has also driven changes in household structure and marriage rates. These changes could be driving trends in female labor force participation, with women disproportionately employed in higher unionized fields such as teaching (35 percent).

There are a few issues with this idea. The first is that the growth in female labor force participation has stagnated, while trends in male labor force participation have continued to trend downwards. Another issue is that while women are very over represented in the field with the highest labor union participation rates, they are also over represented in the fields with the lowest rates, such as textiles and food production. Because of this general female labor union rates (10.5 percent) are slightly lower than men (11 percent).

7 Right-to-Work

Another interesting form of heterogeneity in the existing data is variation in state-level labor protection laws. One clear example is a state's Right-to-Work status. This legal status (unrelated to Louis Blanc's idea) was introduced as a reaction to the National Labor Rights Act of 1935, often referred to as the Wagner Act. This act sought to correct the bargaining power imbalance between firms and labor by providing robust labor protections. In regards to how firms interact with labor and their employees, there are several different legal statuses a firm can choose to adopt. The first is a Closed Shop, in which all employees are required to join the union as a condition of their employment. Secondly, Union Shop allows non-union employees given they agree to join the union in the near future. The third status is an Agency Shop, in which employees are not required to join the union, but must pay union dues. The fourth alternative is an Open Shop where an employee can not be forced to join a union or pay union dues. The Labor-Management Relations act of 1947, better known as the Taft-Hartley act, dramatically amended the Wagner Act and had a large impact on labor power - not only did the bill outlaw Closed Shops and several strategies used by labor unions, it also allowed states to pass legislation banning union and agency shops, this legislation came to be known as Right-to-Work laws.

It is interesting to note the political backdrop surrounding these laws. In the years following the end of World War One, there were a number of great strikes across the United States, with participation estimated at around 5 million workers. To this day, these protests remain the largest strikes in American history. The Taft-Hartley Act was a direct response to these strikes, and to a growing anti-communist sentiment. During early development, politicians utilized segregationist viewpoints to argue in favor of Right-to-Work laws. Many, particularly in the South, felt that members of different races should not belong to the same unions. To this day, all Southern states are all classified as Right-to-Work, and African Americans are still the group most

likely to be represented by a labor union.

The Ahlquist and Downey paper finds important differences in the effect of the trade shock on states manufacturing employment, depending on the state's Right-to-Work status. While both Right-to-Work and non-Right-to-Work states saw similar levels of exposure, on average Right-to-Work states saw a significantly larger trade-induced employment decline (1.2 percentage points) when compared to non-Right-to-Work states (.2 percentage points). They also find that the decline in manufacturing in these states was more dramatic, and the displaced workers were not as effectively absorbed back into the labor market. The primary challenge here is detangling the effects of Right-to-Work status from the general "pro-business" policy environments. These states have lower levels of human capital (i.e. college and high school degree proportion). The faster decline in manufacturing in these states could be due in part to educational attainment differences. One of the key findings from Autor, Dorn, and Hanson (2013), and Bloom et al. (2019), was that the effects of trade on employment were stronger for those with less education so this is a possible source of omitted variable bias.

Another possible issue with this analysis is that different states could have different proportions of product heterogeneity. As mentioned previously, unions will only have the opportunity to produce higher-quality goods in heterogeneous markets. So one issue could be that Right-to-Work states could have started this period producing more homogeneous goods and therefore be predisposed to more severe import competition. The Alquist and Downey paper tests this theory by splitting the earlier regression by Right-to-Work states. They find that both groups had similar initial levels of product heterogeneity but that Right-to-Work states the effective difference between product heterogeneity and homogeneity was stronger, giving more evidence to the arguments that unionized firms tend to produce higher quality goods.

8 Labor Power

In the current policy environment, it is unclear what steps need to be taken to slow domestic trends in unionization and the displacement of workers. While trade does produce gains both domestically and abroad, the consequences to distribution and employment have become increasingly clear. The political backlash has also been palpable: In the United States, the loss of high-paying manufacturing jobs has been a major blow, particularly to rural America. For many Americans, trade is an easy outlet for their frustration. While it has consistently been shown that job loss has been primarily due to changes in technology, trade deficits are a much more tangible policy agenda than slowing down the pace of innovation. The issue with this approach is that the policies are often more politically motivated than economically effective. The Trump trade war had little impact on the trade deficit, and probably did more harm than good for most Americans, even those at risk of outsourcing.

The 1981 book Corporate Flight, written by Barry Bluestone, Bennett Harrison, and Larry Baker, chronicle their predicted and observed effects of outsourcing and the displacement that it would cause. They predicted that for every 1 percent increase in unemployment, 40,000 people would suffer premature deaths from heart disease, substance abuse and several other factors. The predictions of this book have mostly come to pass. Kruger's work on the effects of displacement on mental health and substance abuse make it clear that for many Americans, the cost of unemployment is not only financial, but also psychological. Many displaced Americans make it to retirement by utilizing welfare and benefits programs, disability insurance, in particular, has seen a dramatic uptick, reflecting the fall in prime-age labor force participation and the effects of the opioid crisis.

Kruger also suggests that for a segment of prime age men, the idea of working in a traditionally female-dominated profession such as nursing is so off-putting they would rather stay unemployed. It is also emotionally challenging for many to face the

idea of returning to school. In my experience at a community college, I had classes with older Americans pursuing degrees using lifetime learning credits made available by the federal government. Often they had not completed high school, and returning to that setting was very challenging. Many were facing challenges such as taking math with a thirty year gap in their education, or competing with students half their age who are right out of high school. Older Americans who return to school often report how emotionally challenging this adjustment is, and many more would never consider it. Complaints of ageism are also increasingly prevalent across all sectors. Often, when effects of globalization on distribution are discussed, there is some talk at the end about how displaced workers should be compensated for their losses. Clearly, it is not that simple.

From a policy perspective, this seems like an insurmountable problem. We have seen massive changes in our labor markets in the past, probably more severe than what has happened in the last 30 years. In the past one appealing solution was to fund large public works programs. This has two advantages over direct transfer payments and programs such as Trade Adjustment Assistance. The first is that you might build something that provides value. The second is that you get to provide meaning to the lives of prime-age workers and a chance to contribute to their society. The problem is that compared to displacements of the past this instance skews towards older Americans that might be incapable of the physical work demanded by traditional public works programs. It is unclear to me exactly what they should be doing, but finding something productive and meaningful should be the top priority of policymakers.

It seem as the decline in unionization has also been a major contributor to this displacement and to trends in income inequality. A prospective solution would be a dramatic tightening of United States labor laws, putting them on par with European nations. Counties such as Sweden, Denmark, and Finland have retained 70-80 percent unionization rates due in large part to much stronger labor laws. One

way to fight ageism would be to make it much harder to fire employees, which could also safeguard against trade and technological job loss. The problem with this idea is that by making it dramatically harder to fire employees, it simultaneously makes it harder to get a job. In doing so, you increase the natural rate of unemployment, shifting the displacement burden from older voters to more younger voters. In the United States, we might have to ask ourselves if we would prefer to subject ourselves to younger progressive populists or older conservative populists. In the end, it seems all roads lead to populism. For many young Americans, the self-reinforcing trend towards capital power dominance feels inevitable and the process of swinging it back in the direction of labor feels insurmountable. But if trends in income inequality continue, populism feels inescapable, and the further the trend is allowed to continue, the more dramatic the reaction.

Ity will also be interesting to observe the ways in which labor organization emerge in the future. Ware house jobs might be the next forefront the next American labor movement. Of particular to note is that the recent front page amazon unionization vote happened in Alabama, a Right-to-Work state. Perhaps some unforeseen some tide will turn and lift Labor back to some state of equilibrium.

9 International Labor Laws

A different approach would be to emphasize the power the United States can assert through trade deals. With the Biden administration's trade policy still undetermined, and the trade policies put in place by the Trump administration still largely in effect there exists many questions surrounding the direction we should be taking our trade policy. From the perspective of United States labor, one important policy point could be the globalization of labor standards. In the United States, free trade agreements all include fair labor practices. The issue is that they are often dramatically under enforced (Bello, 2016; Postnikov and Bastiaens, 2014). Standardizing

labor protections across countries could shift some value back to domestic workers. It also could have positive effects for the workers of developing nations in the form of better working conditions. But it could reduce foreign investment and make the climb out of poverty more challenging. In her book the progressive case for free trade Kimberly Clausing discusses this dilemma in greater detail.

Currently, the International Labor Organization monitors working conditions, but it lacks the bite and resources that could be attained with stronger support from developed economies. Another Idea is that multinational corporations could require multinational labor unions to balance power and stop companies from relocating to the country with the lowest wages. However, if history can teach us anything it's that homogeneity might be an unfortunate requirement for collective action of this type (remember the racist union members of the 1940s). It seems unlikely in this current political climate that workers would be willing to cooperate with groups they feel are currently their direct competitors. For the time being the idea of a United States-Mexico labor union remains far-fetched.

10 Conclusion

This paper presents evidence on the effect of Chinese imports on manufacturing labor union share. The results presented here confirm prior analysis of the problem. There seems to be a very minimal relationship between trade penetration and union share in heterogeneous product markets where unionized firms are able to avoid international competition by producing higher quality goods. In homogeneous markets, the effects are more noticeable, but still smaller than expected. The regression suggests that between 1990 and 2010, Chinese import competition is only responsible for 17 percent of the average decline in manufacturing union share. I also provide several potential explanations as to why this effect is so small, such as differences in product quality and education.

The paper then discusses findings on the potential spillover effects caused by the China shock, and the estimations of the broader effect on unionization rates in the United States. These include household effects that might be pushing women into more unionized jobs such as teaching, and the shift of workers out of manufacturing and into more unionized industries such construction. I also discuss possible effects of Right-to-Work laws on both manufacturing employment and differential effects of import competition. As well as providing some historical context for Right-to-Work and their broader effects. I also touch on the ramifications of displacement and the policy that may become an increasing necessity in the future. While the direct effects of free trade on unionization seem negligible it is clear that we should be prioritizing our understanding of the effects of labor protections and their ability to shield United States workers from the effects of import competition.

References

[1] John S Ahlquist and Mitch Downey. "The Effects of Import Competition on Unionization". In: (2020).

[2] Jorge Arbache. "Does trade liberalization always decrease union bargaining power?" In: *University of Brazil Economic Discussion Paper* (2004).

[3] Robert Baldwin. *The decline of US labor unions and the role of trade*. Columbia University Press, 2003.

[4] Nicholas Bloom et al. "The impact of chinese trade on us employment: The good, the bad, and the apocryphal". In: *American economic association annual meetings*. Vol. 2019. 2019.

[5] Lorenzo Caliendo, Maximiliano Dvorkin, and Fernando Parro. "Trade and labor market dynamics: General equilibrium analysis of the china trade shock". In: *Econometrica* 87.3 (2019), pp. 741–835.

[6] David Card, Thomas Lemieux, and W Craig Riddell. "Unions and the wage structure". In: *International handbook of trade unions* (2003), pp. 246–292.

[7] Kim B Clark. "The impact of unionization on productivity: A case study". In: *ILR Review* 33.4 (1980), pp. 451–469.

[8] William N Cooke. "Product quality improvement through employee participation: The effects of unionization and joint union-management administration". In: *ILR Review* 46.1 (1992), pp. 119–134.

[9] H David, David Dorn, and Gordon H Hanson. "The China syndrome: Local labor market effects of import competition in the United States". In: *American Economic Review* 103.6 (2013), pp. 2121–68.

[10] David Dorn, Gordon Hanson, et al. "When work disappears: Manufacturing decline and the falling marriage market value of young men". In: *American Economic Review: Insights* 1.2 (2019), pp. 161–78.

[11] David Dorn, Gordon Hanson, Kaveh Majlesi, et al. "Importing political polarization? The electoral consequences of rising trade exposure". In: *American Economic Review* 110.10 (2020), pp. 3139–83.

[12] Christos Doucouliagos and Patrice Laroche. "What do unions do to productivity? A meta-analysis". In: *Industrial Relations: A Journal of Economy and Society* 42.4 (2003), pp. 650–691.

[13] Barry Eichengreen. "The impact of late nineteenth-century unions on labor earnings and hours: Iowa in 1894". In: *ILR Review* 40.4 (1987), pp. 501–515.

[14] Henry S Farber. "Right-to-work laws and the extent of unionization". In: *Journal of Labor Economics* 2.3 (1984), pp. 319–352.

[15] Henry S Farber and Bruce Western. "Accounting for the Decline of Unions in the Private Sector, 1973–1998". In: *Journal of Labor Research* 22.3 (2001), pp. 459–485.

[16] Teresa C Fort, Justin R Pierce, and Peter K Schott. "New perspectives on the decline of US manufacturing employment". In: *Journal of Economic Perspectives* 32.2 (2018), pp. 47–72.

[17] Nicole M Fortin and Thomas Lemieux. "Institutional changes and rising wage inequality: Is there a linkage?" In: *Journal of Economic Perspectives* 11.2 (1997), pp. 75–96.

[18] Noel Gaston. "The effects of globalisation on Unions and the Nature of collective Bargaining". In: *Journal of Economic Integration* (2002), pp. 377–396.

[19] Amanda Gosling and Stephen Machin. "Trade unions and the dispersion of earnings in British establishments, 1980–90". In: *Oxford Bulletin of Economics and Statistics* 57.1 (1995), pp. 167–184.

[20] Daniel Griswold. "Unions, protectionism, and US competitiveness". In: *Cato J.* 30 (2010), p. 181.

[21] Breon Haskett. "The Right To Work For Less: The Effect of Right-to-Work Laws on Unfair Labor Practice Filing at the NLRB". PhD thesis. 2020.

[22] Adam Jakubik and Victor Stolzenburg. "The 'China Shock'revisited: insights from value added trade flows". In: *Journal of Economic Geography* 21.1 (2021), pp. 67–95.

[23] Maurice Kugler and Eric Verhoogen. "Prices, plant size, and product quality". In: *The Review of Economic Studies* 79.1 (2012), pp. 307–339.

[24] Elisabetta Magnani and David Prentice. "Did globalization reduce unionization? Evidence from US manufacturing". In: *Labour Economics* 10.6 (2003), pp. 705–726.

[25] Darrell Minor. "Poverty, Productivity, and Public Health: The Effects of" Right to Work" Laws on Key Standards of Living." In: *Thought & Action* 28 (2012), pp. 17–29.

[26] William J Moore. "The determinants and effects of right-to-work laws: A review of the recent literature". In: *Journal of Labor Research* 19.3 (1998), pp. 445–469.

[27] Justin R Pierce and Peter K Schott. “A concordance between ten-digit US Harmonized System Codes and SIC/NAICS product classes and industries”. In: *Journal of Economic and Social Measurement* 37.1-2 (2012), pp. 61–96.

[28] Justin R Pierce and Peter K Schott. “The surprisingly swift decline of US manufacturing employment”. In: *American Economic Review* 106.7 (2016), pp. 1632–62.

[29] Dani Rodrik. “Populism and the economics of globalization”. In: *Journal of international business policy* 1.1 (2018), pp. 12–33.

[30] Jake Rosenfeld. *What unions no longer do*. Harvard University Press, 2014.

[31] Matthew J Slaughter. “Globalization and declining unionization in the United States”. In: *Industrial Relations: A Journal of Economy and Society* 46.2 (2007), pp. 329–346.

[32] Aaron J Sojourner et al. “Impacts of unionization on quality and productivity: Regression discontinuity evidence from nursing homes”. In: *ILR Review* 68.4 (2015), pp. 771–806.

[33] Lonnie K Stevans. “The effect of endogenous right-to-work laws on business and economic conditions in the United States: A multivariate approach”. In: *Review of Law & Economics* 5.1 (2009), pp. 595–614.

[34] Bruce Western. “A comparative study of working-class disorganization: Union decline in eighteen advanced capitalist countries”. In: *American Sociological Review* (1995), pp. 179–201.

I had some issues knitting the code so its just copied here

11 Code Appendix

— title: ”econ 183” output: $\text{html}_{d}ocument : defaultpdf_{d}ocument : default --$

—

import labor data

“‘r setup, include=TRUE

library(tinytex) library(dplyr) library(plyr) library(dbplyr)

install.packages('ipumsr')

library(ipumsr)

getwd()

ddi ¡- read$_i pums_d di$(”$cps_0$0005.xml”)

data ¡- read$_i pums_m icro$(ddi)

df = data[with(data, ((dataIND1990 >= 1)|($data$IND1990 ¿= 1))),]

group = ddply(df,.(YEAR, IND1990, UNION),nrow)

group = group[group$UNION$! = 2,]

group = group[group$UNION$! = 3,]

percent = group

percent = percent[percent$YEAR$! = 1995,]

percent = percent[percent$YEAR$! = 2000,]

percent = percent[percent$YEAR$! = 2004,]

percent = percent[percent$YEAR$! = 2015,]

percent = percent[percent$YEAR$! = 2020,]

Y1990 = percent[percent$YEAR$! = 2010,]

Y2010 = percent[percent$YEAR$! = 1990,]

decline ¡- merge(Y1990, Y2010, by=c(”IND1990”,”UNION”))

decline ¡- transform(decline, changeshare = (share.y - share.x) / share.y)

decline ¡- transform(decline, changetotal = (V1.y - V1.x) / V1.y)

decline = decline[decline$V1.x > 50,]

allunion = decline[decline$UNION! = 0,]

nounion = decline[decline$UNION! = 1,]$decline < -decline[-c(2 : 9)]‘‘‘

import penetration data

‘‘‘r

library(tidyverse)

library(haven)

pen = read_data(choose.files())

cross1 = read_data(choose.files())

cross2 = read_data(choose.files())

summary(pen)

‘‘‘

‘‘‘r

install.packages(”crosswalkr”)

library(crosswalkr)

library(dplyr) library(labelled) library(haven)

pen ¡- pen

mer ¡- merge(cross1 ,pen ,by=”sic87”)

mer ¡- mer

penlabor ¡- merge(mer ,decline , by=”IND1990”)

allunion ¡- merge(mer ,allunion , by=”IND1990”)

nounion ¡- merge(mer ,nounion , by=”IND1990”)

allunion$d_i mport_u sch_1 991_2 011$

nona = na.omit(penlabor)

scatter.smooth(x=nounion$changetotal, y = nounion$d$_i mport_u sch_1 991_2 011$)

scatter.smooth(x=nounion$d_i mport_u sch_1 991_2 011, y = nounion$changetotal)

cor(allunion$d_i mport_u sch_1 991_2 011, allunion$changetotal)

summary(lm(changeshare $\sim$ d$_i mport_o tch_1 991_2 011, data = allunion$))

summary(lm(changetotal $\sim$ d$_i mport_o tch_1 991_2 011, data = nounion$))

summary(lm(changetotal $\sim$ d$_i mport_o tch_1 991_2 011, data = penlabor$))

ave = group$_b y(IND1990)$

summary(penlabor)

‘‘‘

‘‘‘r

install.packages(”stargazer”)

library(stargazer)

attitude$high.rating <-(attitude$rating ¿ 70)

stargazer(lin, title=”Results”, align=TRUE)

‘‘‘