Trade Integration and Political Radicalization: German Evidence from the Rise of the East and the Fall of the Wall *

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Preliminary - Comments Welcome

Abstract

Over the last two decades, the dramatic rise of trade with low-wage manufacturing countries has been a major source of labor demand shocks in high-wage countries. The associated economic adjustments have been linked anecdotally with voters' radicalization and alienation from the political mainstream. We identify the causal effect of trade-integration with (import-competition from) Asia and Eastern Europe on voting for far-right parties in German local labor markets from 1987 to 2009. For East Germany in the early 1990s, where integration with West Germany was the dominant shock, we alternatively exploit an exogenous import-competition measure based on West German revealed comparative advantage before reunification. We find large and significant effects of import-competition on voting for far-right parties. These effects are only very partially explained by observed labor market adjustments, suggesting instead psychological factors such as anxiety about the future as an important driver of political radicalization.

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1   Introduction

The last two decades have seen a rise of far right parties with nationalist and protectionist agendas across developed Western economies. The French *National Front*, British *United Kingdom Independence Party*, Italy's *Northern League*, and the Dutch *Freedom Party* (PVV) have all done well in recent national elections. In Austria, the vote share of the far-right Freedom Party went from 5% in 1983 to 27% in 1999, before coming back down in the 2000s (Halla et al. [2012]). Outside of Europe's core, *Jobbik* is the third biggest party in Hungary's parliament, and the neo-Nazi party *Golden Dawn* holds 18 seats in Greece's parliament. Polls suggest that as much as 9% of the popular vote in the upcoming European parliamentary elections may go to right and far-right parties (Economist [2013]). While much of the *recent* rise has been attributed to economic hardship caused in particular by the global financial crisis and its, there has also been a longer-running trend since the 1980s of far-right parties re-gaining legitimacy and voters. This trend has been associated particularly with unemployment, low economic growth, fears of increasing labor market competition due to trade and immigration, and loss of socioeconomic status among segments of the working and lower-middle classes (Arzheimer [2009]).

The recent financial crisis aside, over the last two decades, trade integration has perhaps been the biggest source of economic hardship in high-wage developed countries, particularly for manufacturing workers.[1] U.S. data shows that workers in those industries that were most affected by the rising import competition of the last two decades experience lower earnings, more job loss, and more employer switching; effects that are most pronounced among low skilled workers (David et al. [2013]). Survey-based evidence suggests that the resulting job insecurity, over and above individuals' measurable labor outcomes markets, cause voters to reject the political mainstream (Mughan and Lacy [2002], Mughan et al. [2003]). In this paper, we study the causal effect of trade integration on political radicalization, exploiting an identification framework based on Autor et al. [2013].

To study the effect of trade integration on manufacturing employment in U.S. local labor markets, Autor et al. [2013] (henceforth *ADH*) combine two insights from the trade literature and the labor market literature: First, the increasing share of global trade between high-wage coun-

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[1]Perhaps the other main culprit of economic hardship in developing countries, but one that is perhaps harder to attack politically, has been technological change in the form of automation (Autor and Dorn [2013]).

tries and low-wage developing countries has meant that trade integration since the 1990s has had far more pronounced consequences for local labor demand in developed economies than before (Krugman [2008]). Second, if mobility responses to labor demand shocks across local labor markets are slow and incomplete, then local labor market shocks induced by trade integration will have consequences on local employment and wages (Topel [1986], Glaeser and Gyourko [2005], Notowidigdo [2013]). ADH operationalize the notion of *local* increases in competition from trade-integration by using the interaction of cross-sectional differences in industrial composition with national changes in industry-specific imports from developing countries, specifically China in their case. Following Bartik [1991], the classic *shift-share* approach would be to use this interaction directly as an instrument, if the sector-specific shock was not based on imports, as it is here. Because industry-specific import increases could be endogenous to domestic industry-specific demand shocks, ADH instrument imports from China to the U.S. with from China to other OECD countries, by industry.

We apply the identification approach advanced in ADH to data on changes in voting for far-right parties in German national elections from 1987 to 2009. First, we confirm that the basic results in ADH — that trade integration with the East has had significant effects on local, i.e. sub-national, labor markets — holds similarly in German data. In this, we follow for the most part the specifications suggested in Dauth et al. [2014] (henceforth *DFS*), who replicate ADH for German local labor markets. Our focus is to apply the ADH identification framework to study the effect on voting for far-right parties. We find significant and large effects of the local shocks from trade-integration with the East on changes in the share of votes that went to far-right parties, both in the 1990s and in the 2000s. These effects are robust to many different specifications, clustering and levels of data-aggregation.[2] We verify that the changes in manufacturing employment — the main outcome for ADH — correlate strongly with the changes in the votes-share to far-right parties that is our focus. Next, we ask how much of the effect of trade integration on political radicalization is explained by the changes in manufacturing employment. We find that controlling for changes in manufacturing employment, reduces our baseline effect on political radicalization by about 30%.

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[2]A data innovation is that we have full voting records at the Gemeinde level, the most localized political unit in Germany. In our baseline specification, we therefore report Gemeinde-level results, with a cross-sectional sample-size of about 10,000. Because ADH focus on "commuting zones," which are more akin to the German "Kreis," at which DFS report their replication results, our core results are also for regressions at the level of the Kreis, with a cross-sectional sample-size of about 400.

German voting data is very suitable to the question at hand because Germany has three parties that existed throughout the period we study, and that are unequivocally on the far-right of the political spectrum.[3] Because vote shares to these three parties are typically low and fall frequently below the specific reporting thresholds of German states, a big part of the data collection effort for this paper was filling in all the gaps that were due to censoring in official German records.[4] Importantly, data show that it is exactly those most hurt by import competition — workers, especially with low skills, as opposed to high skill workers, civil servants and the self-employed —, that are most prone to voting for far-right paries in Germany (Stöss [2010, p.88-90]). As noted by Dauth et al. [2014], the ADH approach does not provide a very meaningful measure of trade integration for Eastern Germany in the 1990s. This is because the far more dominant trade integration shock in 1990s Eastern Germany was integration with more productive Western Germany after the fall of the Berlin Wall.[5] DFS therefore run regressions in an unbalanced panel that includes only West Germany in the 1990s. While we adopt this approach, we also recognize that far-right tendencies have been particularly strong in East Germany of the 1990s (Krueger and Pischke [1997]).

We therefore apply a different identification strategy for East Germany in the 1990s. We construct a measure of import competition that is similar to that in ADH in that it applies regional weights to national sector-specific shocks. Specifically, we use the concept of "revealed comparative advantage" (RCA) developed by Balassa [1965], to measure how productive Western Germany was in each sector in 1989.[6] We then compute for each Eastern German region its composite Western German RCA, i.e. a weighted average of Western productivity at the time of reunification. The idea is that before the fall of the Iron Curtain, Eastern German industrial structure was not determined by Western German productivity. An Eastern region that had a high composite Western German RCA was therefore exogenously faced with the stiffest competition from integration with the West after 1990. We then apply basically the same identification strategy to

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[3]These three parties are the "Republikaner", the "Deutsche Volksunion" (DVU) and the "Nationaldemokratische Partei Deutschlands" (NPD).

[4]This data collection effort was a continuation of the data collected for Falck et al. [2014].

[5]The wall effectively "fell" on November 9th 1989, when the German Democratic Republic (GDR) allowed its citizens to visit West Germany. However, this did not imply political and economic union, which, although it happened one year later, still came as a surprise to many. The GDR held its last elections in March 1990. In July, East and West Germany joined in a currency union and in October 1990, the GDR formally joined Western Germany as a country.

[6]RCA compares a Western Germany's share of global exports in industry i to its share across all industries. If that ratio was above one, then Western Germany captured a greater share of global exports in industry i than it does on average, implying that Western Germany had a comparative advantage in producing in industry i in 1989, even relative to its overall export prowess. For a recent publication that uses the concept of RCA, see Berger et al. [2013].

1990s Eastern Germany. We show that RCA had significant detrimental effects on manufacturing employment, controlling for the initial share of manufacturing. We show that RCA also had a significant effect on the change in voting for far right parties, where we use Eastern Germany last elections in May 1990 as our baseline measure. Similar to the core results, controlling for the change in the manufacturing share of employment, shows that this explains a significant chunk, but still less than half, of voters' overall shift towards far-right parties.

Finally, we turn to survey responses as an alternative measure of voters' tilt towards the far right. Recent research has used the German General Social Survey (Allbus) to study Germans' attitudes on right and far-right issues (Voigtländer and Voth [2012], Mocan and Raschke [2014]). Because several waves of the Allbus are available from its inception in 1988 to the present, we can construct measures of attitudinal change in first differences that fit in with our identification framework.

Building on the insights of a long-standing empirical literature on local labor market shocks (Topel [1986], Bound and Holzer [2000], Glaeser and Gyourko [2005], Notowidigdo [2013], Autor et al. [2013]) this paper provides first causal estimates of the effect of trade integration (import competition) on voting for radical, far-right, parties. We first show evidence consistent with Dauth et al. [2014] that rising trade with Eastern Europe and Asia had significant consequences for German local labor market. We then show that the consequences of trade integration are not limited to only the economic sphere, as we find significant increases in voting for far-right parties in the affected labor markets. Controlling for observable labor market adjustment only accounts for about one-third of the effect of trade-integration on votes for far-right parties. This suggests that a large part of the estimated effect on voters' radicalization may be explained by psychological factors such as anxiety the future. This is consistent with existing evidence that much of the effect of globalization goes through increased insecurity about the future (Scheve and Slaughter [2004]), and that this globalization-induced insecurity explains voters' rejection of the political mainstream, over and above measurable short-term impacts of globalization on local labor markets (Mughan and Lacy [2002]). While our evidence is related to findings that political beliefs are shaped by economic hardship (Giuliano and Spilimbergo [2013]), we identify a more instantaneous response because we study the contemporaneous effects of labor market shocks on voting. There is also a literature on the political consequences of economic shocks with a particular

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emphasis ion causing regime changes through altering the balance of power between elites and ordinary people, either by coordinating people or by lowering their opportunity cost of protests and revolt (Acemoglu and Robinson [2001]). Based on this logic, Brückner and Ciccone [2011] find evidence that draughts lead to democratic regime change in Africa, and Chaney [2013] finds a similar mechanism going as far back as medieval Egypt. In relation to Germany, the rise of the Nazi party in 1930s Germany has long been associated with the economic hardship resulting from the repercussions of the 1929 global financial collapse (Fischer and Modigliani [1978], King et al. [2008]). We do speak to this literature, but our focus is on the more mitigated economic hardship in a developed country with a modern welfare state, and voting as a political response within the context of a mature democracy like Germany. Perhaps the paper most related to ours is Bagues and Esteve-Volart [2013], who exploit the effect of exogenous income shocks driven by the Spanish Christmas lottery on voting for incumbent politicians.

The remainder is organized as follows. Section 2 provides some background on far-right attitudes and voting in attitudes in Germany. Section 3 develops the measures of economic shocks, describes the labor market and voting outcomes, and lays out the identification strategy. Section 4 shows our results using the ADH specification for an unbalanced panel that includes West Germany in the 1990s and the whole of Germany in the 2000s. In Section 5 we use a similar framework to study the effect of East Germany's integration with West Germany in the 1990s. In Section 6, we study alternative outcome measures, in particular changes in attitudinal survey-responses about right and far-right issues. Section 7 concludes.

2 Far-Right Parties and Attitudes in Contemporary Germany

German elections follow the principle of proportionality. Still, elections also contain an element of majority vote. While the overall share of parliamentary seats a party gains is determined by its share of votes, voters can to a certain degree decide on individual candidates on a first-past-the-post basis. In federal elections, the electorate can cast a vote on individual candidates (almost exclusively proposed by parties) with a second ballot, ironically called the "primary vote" or *Erststimme*. In every election district, the candidate who wins the majority of these votes is directly elected to the parliament. However, this does not affect the overall share of seats a party wins in

Figure 1: Far-Right Voting in Germany from 1987 through 2009
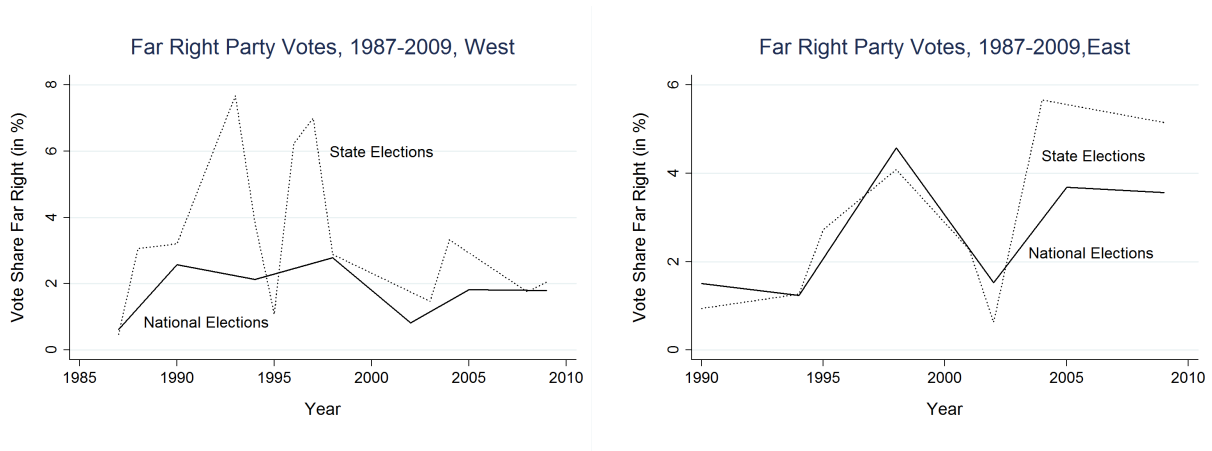
the federal parliament (Spenkuch [2013]). We consider only the main vote, which is the one cast for a party, called the *Zweitstimme*, and which eventually determines the distribution of seats in the Germany's parliament.[7]

We measure the effects of economic integration on votes for the three established far-right parties in Germany, the "Republikaner", the "Deutsche Volksunion" (DVU) and the "Nationaldemokratische Partei Deutschlands" (NPD). These parties from the right fringe of the political spectrum follow nationalist ideologies, are critical of the democratic system and the universal rights granted by the constitution, although they cannot be openly hostile towards it, they polemicize against foreign competition and against outsourcing by German firms, and they agitate against migrants and foreigners (Falck et al. [2014]).

Figure 1 shows votes for far-right parties over the time span 1987-2009. The left panel shows a clear increase in the first decade followed by a slight decline in the second period. The strong increase in the first period is a reflection of an overall European trend where an increasing degree of European (and more general global) integration contributed to a feeling of insecurity, especially among those who considered rising international competition as threat to their socioeconomic status (Arzheimer [2009]). After 1990, the collapse of the eastern bloc led to an additional boost of globalization and with it labor market uncertainty. In these turbulent times, parties on the far right

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[7]Unlike Anglo-Saxon parliamentary elections, mandates to parliaments and councils are distributed according to the principle of proportionality. Consequently, the share of mandates a party wins equals the share of votes it obtains. However, usually a party has to surpass a certain threshold (e.g. 5% of votes in federal elections) to be granted seats in the elected body.

who have traditionally been propagating a strong national state and comprehensive yet exclusive social security systems gained additional support among those who were afraid of being left behind. For example, in 1991, the far right got re-elected into the city-state parliament of Bremen. Far right parties won enough votes to be represented in some state parliaments, Schleswig-Holstein in 1992, and Baden-Wuerttemberg in 1992 and 1996. This pattern is similar to that shown in Halla et al. [2012] for the far-right Freedom Party in Austria, whose vote share went from 5% in 1983 to 27% in 1999, but also fell back down to 10% by 2002.

In East Germany political representation of the far right was limited in the early years after the reunification, because of a lack of "political infrastructure." However, Hagan et al. [1995] argues that GDR immigration policies before reunification kept immigrants distinct and GDR society rather homogenous, and that this later led to more far-right sentiments relative to the West, as witnessed by a higher overall vote share to far-right parties in the East since the 1998 federal elections.[8] This explanation is consistent with Mocan and Raschke [2014] who show that a lack of contact with foreigners is associated with more racist, anti-Semitic and xenophobic feelings.[9] To an extent, the relative drop in far-right votes in the West in the 2000s may also be related to better "political infrastructure" by the mainstream parties there. After the heyday of far-right parties in West Germany from the 1990 to 1998 elections, conservative politicians in West Germany seem to have somewhat towards the direction of the far right. For instance, Juergen Ruettgers (CDU) propagated the notorious slogan "Kinder statt Inder" (children instead of Indians) in his election campaign in North Rhine-Westphalia (Bartlett), while Roland Koch (CDU) petitioning against dual citizenship before the state elections in Hesse, also in 2000.

3 Measurement and Identification

3.1 The Import-Competition Shock of Trade Integration in the Core Data

A standard approach to constructing an instrumental variable for local labor demand shocks, due to Bartik [1991], is to interact cross-sectional differences in industrial composition with national

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[8] In state legislatures, far right parties gained representation in the East German states of Saxony-Anhalt in 1999, Brandenburg in 1999, and Saxony in 2004.

[9] As an aside, Krueger and Pischke [1997] and Falk et al. [2011] note that far-right activities in East Germany often take the form of hate crimes against foreigners. Stöss [2010] relates this to a higher risk tolerance of East German extremists who were previously opposing the GDR police state.

changes in industry employment shares. The equivalent for measure for a local labor demand shocks that is specifically due to rising import competition is to measure the import shock per worker (ΔIPW) as in

$$\Delta IPW_{git} = \sum_j \frac{L_{ijt-1}}{L_{jt-1}} \frac{\Delta M_{gejt}}{L_{it-1}} \tag{1}$$

where i is a sub-national region and j is an industry, and ΔM_{gejt} is the change in imports from the "East" ('e') to Germany ('g'). The impact of the sector-specific import-competition shock ΔM_{gejt} in region i depends on the importance of that sector in that region. To approximate this, each sector-specific shock is weighted by by $\frac{L_{ijt-1}}{L_{jt-1}}$, so that a region's share of that industry's total employment determines how important the shock is. If region i is small, then $\frac{L_{ijt-1}}{L_{jt-1}}$ is small even if sector j is important. The sectoral shock is therefore further weighted by $\frac{1}{L_{it-1}}$, which is bigger in smaller regions.

Autor et al. [2013] note that variation in ΔIPW_{git} stems from two sources: differential concentration of employment in manufacturing versus non-manufacturing activities and specialization in import-intensive industries within local manufacturing. To isolate the effect of import competition, which works through the latter channel, we control everywhere for the initial beginning-of-period share of manufacturing in employment. A concern with ΔIPW_{git} is that ΔM_{gejt} may be correlated with industry-specific import demand shocks. In that case, a higher ΔIPW_{git} reflects more demand for imports in a German region. This may introduce a positive bias in OLS regressions of local labor market tightness ΔIPW_{git}, as it may reflect increased demand for intermediate Eastern inputs due to booming German production in final products.

To identify the foreign-supply-driven component of imports, Autor et al. [2013] instrument of ΔIPW_{git} with

$$\Delta IPW_{oit} = \sum_j \frac{L_{ijt-1}}{L_{jt-1}} \frac{\Delta M_{oejt}}{L_{it-1}}, \tag{2}$$

which is defined the same way except that it reflects rising imports from the East to other ('o') similar high-wage Western economies.[10] This is the approach taken in Autor et al. [2013] for import competition from China to the U.S.

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[10]As in DFS, these are Australia, Canada, Japan, Norway, New Zealand, Sweden, Singapore, and the United Kingdom.

3.1.1 Three Adjustments to Account for Specifics in Germany's Trading Environment

We follow Dauth et al. [2014] (DFS), who make three adjustments to this approach to address differences in how trade integration has affected Germany as opposed to the U.S.: First, DFS document that for Germany, trade with Eastern Europe was just as important, if not more important, than trade with China. As in DFS, we define the "East" therefore as trade with Eastern Europe *plus* China. Second, we relate local labor market outcomes to changes in *net* imports per worker ($\Delta NIPW$), measured as

$$\Delta NIPW_{git} = \sum_j \frac{L_{ijt-1}}{L_{jt-1}} \frac{\Delta M_{gejt}}{L_{it-1}} - \sum_j \frac{L_{ijt-1}}{L_{jt-1}} \frac{\Delta X_{gejt}}{L_{it-1}}, \tag{3}$$

where ΔX_{gejt} are changes in industry j exports from Germany to the East, and the "net-instrument" is analogously defined. While Autor et al. [2013] do show this specification in panel D of their table 10, they prefer to focus on imports alone because the U.S. runs such a large trade deficit with China. However, as Dauth et al. [2014] note, Germany is not only a net exporter overall but its trade even with the export-heavy East is fairly balanced, implying that the positive market-access effects of exports to the East may be of similar importance to German local labor markets as the negative import competition effect. Furthermore, the rise of trade in intermediates makes it likely that $\sum_j \frac{L_{ijt-1}}{L_{jt-1}} \frac{\Delta M_{gejt}}{L_{it-1}}$ and $\sum_j \frac{L_{ijt-1}}{L_{jt-1}} \frac{\Delta X_{gejt}}{L_{it-1}}$ are positively correlated in a region so that ignoring the latter could downward bias the estimated effects on the former. We therefore follow DFS in focusing on net-imports from the East in our core specifications. Third, to capture the rise of the East in the last two decades, ADH focus on a balanced panel of local U.S. labor markets from 1990 to 2007, stacking two first differences, 1990-2000 and 2000-2007. In the German case however, the seminal event of reunification of East and West in October 1990 means that the dominant form of trade-integration for East Germany in the early 1990s was with West Germany and not with the rest of the world. By contrast reunification did not constitute a labor market shock for West German regions, which enjoyed a competitive advantage over the East in every area of manufacturing. We therefore follow DFS in running an unbalanced panel of two first differences, 1988-1998 for West Germany only, and 1998-2008 for all of Germany.

The early 1990s in Eastern Germany are therefore omitted from this exercise. However, much of the political radicalization in Germany in the 1990s occurred precisely in the East, and to a

large extent this seems to have originate in the economic hardships, in particular unemployment, associated with integration with the West (Falk et al. [2011]). We therefore consider an alternative strategy for the 1990s East, which captures the main dominant form of trade-integration, with the West, in a way that follows an intuition that is very similar to the approach pioneered by Bartik [1991].

3.2   The Shock of Trade Integration in 1990s East Germany

The basic idea in the identification approach laid out above is that, once initial manufacturing employment is controlled for, ΔIPW_{git} in equation (1) captures the effect of trade-integration through a weighted index of sector-specific import-competition shocks. To create an analogous approach for East Germany in the early 1990s, we use the concept of "revealed comparative advantage" (RCA), developed by Balassa [1965].[11] We first calculate West Germany's RCA in 1989 in each industry by comparing Western Germany's share of global exports in industry j to its share across all industries:

$$\text{RCA}_j^{WG} = \frac{X_j^{WG}}{\sum X^{WG}} \bigg/ \frac{X_j^{ROW}}{\sum X^{ROW}}. \tag{4}$$

If RCA_j^{WG} is above one, then Western Germany captured a greater share of global exports in industry j than it does on average, implying that Western Germany had a comparative advantage in producing in industry j, even relative to its overall export prowess. We then compute for each East German region i the composite Western German RCA corresponding to its industry structure in 1989, i.e. just before reunification:

$$\text{RCA}_i^{EG} = \sum_j \frac{L_{ij}}{L_i} \cdot \text{RCA}_j^{WG} \tag{5}$$

The logic of RCA_i^{EG} as a measure of Eastern region i's *exogenous* import competition from West Germany after reunification is that the industrial structure of East Germany was entirely geared towards trade behind the iron curtain. As discussed in Redding and Sturm, the border between East and West Germany was "completely sealed and all local economic interactions across the border ceased" (p. 1767). Instead, the former GDR was predominately trading with other Eastern

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[11]For a recent application of the concept of RCA to trade data, see Berger et al. [2013].

bloc countries. This argument finds support in trade statistics (UN Comtrade) for the years 1985-89. On average, 70.3% of all GDR exports were directed to partners in the Eastern bloc who in return supplied 68.8% of all imports. At the same time, there are no reports of trade between the former GDR and West Germany. Because East German industry did not directly compete with West German industry, it was essentially random if East German region i was active in those sectors that West Germany happened to be most productive in at the time of reunification.

3.3 Election Data for the Core Sample

We focus on federal elections (Bundestagswahlen) because the timing of state elections (Landtagswahlen) and local elections (Kommunalwahlen) varies wildly across German regions. There were federal elections in 1987, October 1990, 1994, 1998, 2002, 2005 and 2009. We define the first period as changes in far-right voting from 1987 to 1998, and the second as changes from 1998 to 2009. The timing of federal elections therefore allows us to stay close to the period-cutoffs in ADH and DFS.

3.4 Election Data for East Germany in the Early 1990s

Because the identification strategy in this paper, as in ADH, relies on first differences and we try to estimate the effect of reunification on voting, we require data on voting for far-right parties *before* reunification. Fortuitously, the GDR had its first free elections in May 1990, i.e., half a year before reunification. One important feature of this identification strategy is that we are able to control for prevailing political attitudes in East Germany before the re-unification, by controlling for the results from the first and only round of free elections in East Germany held in May 1990. We also have some socio-economic controls from the GDR statistics provided for the year 1989.

4 Results

4.1 Core Data: Stacked Panel

To identify the effect of increasing economic integration on West German municipalities, we first estimate the effect of trade integration on L_{it}^m, the share of manufacturing employment, which is

the main outcome of interest in ADH and DFS:

$$\triangle L_{it}^m = \alpha_2 + \beta_2 \triangle NIPW_{git} + X'_{i,t-1}\gamma_2 + \tau_t + \rho_r + \epsilon_i \tag{6}$$

Then we estimate the effect of trade integration on the far-right voting, which is our main focus in this paper:

$$\triangle\% \text{ Far-Right Votes}_{it} = \alpha_1 + \beta_1 \triangle NIPW_{git} + X'_{i,t-1}\gamma_1 + \tau_t + \rho_r + \epsilon_i \tag{7}$$

In both (6) and (7), $NIPW_{git}$ is instrumented with $NIPW_{oit}$, as defined in (2) and (3). Because this is stacked panel of two first differences (1987-1998 and 1998-2009), we include period fixed effects τ_t, as in ADH and DFS. Because the panel is unbalanced, as it excludes East Germany in the first period, we also regional fixed effects ρ_r. In our preferred specification, we allow region-specific period fixed effects τ_{tr}, which rules out any confounding role that the panel's unbalancedness could have. Both $\triangle L_{it}^m$ and $\triangle\%$ Far-Right Votes$_{it}$ are observed at the level of the Gemeinde, roughly a municipality, for a total number of observations of 20581 in the unbalanced panel that includes excludes East Germany in period 1. While this level of disaggregation is itself a data innovation, we prefer to run regressions at the level of the Kreis, which is closer in size to the "commuting zones" in ADH, i.e., more closely approximating a local labor market. At the Kreis-level, we have a total of 731 observations in the unbalanced panel. Gemeinde-level results are reported in the Appendix.

Figure 2 gives a preliminary view of the data for West Germany in period 1. The left panel shows Kreis-variation in $\triangle NIPW_{git}$, the middle panel in $\triangle L_{it}^m$, and the right panel in changes in far-right voting. Darker shades mean larger numbers, so that in the middle panel, the lighter shades show the areas where manufacturing employment was more negatively effect. While the scattered distribution of the shock in the left panel makes visual comparison a bit hard, the middle and right panel do show more clearly that areas which saw declining manufacturing, for example the South-West, saw a rise in voting for far-right parties.[12]

Figure 3 shows the relationship between $\triangle NIPW_{git}$ and the two main outcomes more clearly

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[12]We show the graph for period 1, because in period 2, 1998-2009, where East Germany is included, differential level differences between East and West across these three measures confound the visual impression. Figure 4 shows an analogous three-panel breakdown for the alternative shock for East Germany in period 1.

in two added variable plots, which sketch our basic results. The left panel confirms that instrumented net import shocks decrease manufacturing employment. The right panel shows our core result, which is that instrumented net import shocks significantly increase voting for far-right parties.[13]

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[13]Importantly, despite the presence of two relative outliers in figure 3, none of our results are driven by these, as both of these data-points lie practically on the regression line.

Figure 2: West Germany 1987-1998 $\triangle$NIPW$_i$ (Left), $\triangle$ Manuf Empl Share (Middle), and $\triangle$ Voting for Far-Right Parties (Right)
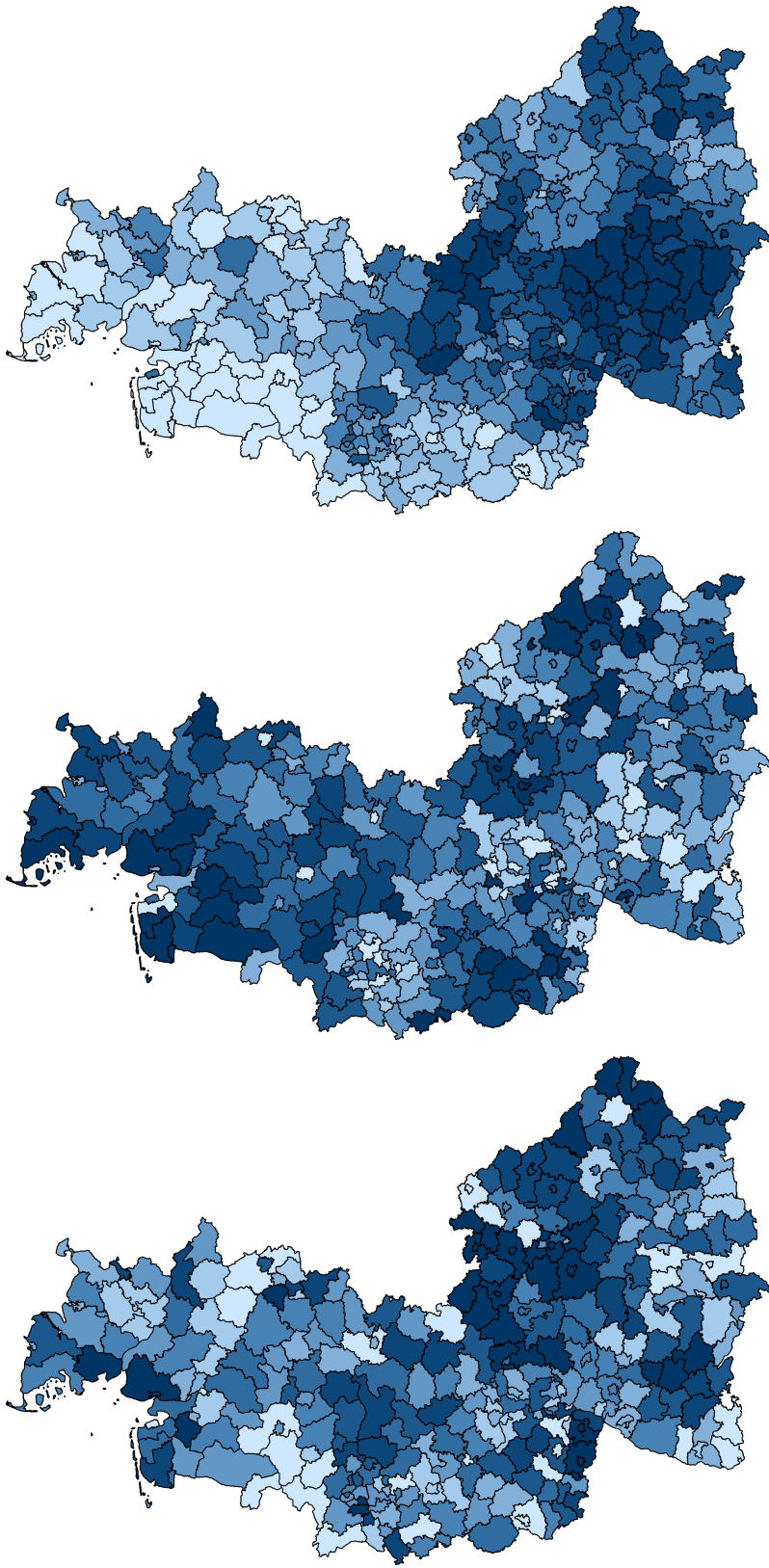
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Figure 3: Effect of $\triangle$NIPW$_i$ on Change in Manufacturing (Left Panel) and on Change in Voting for Far-Right Parties (Right Panel)
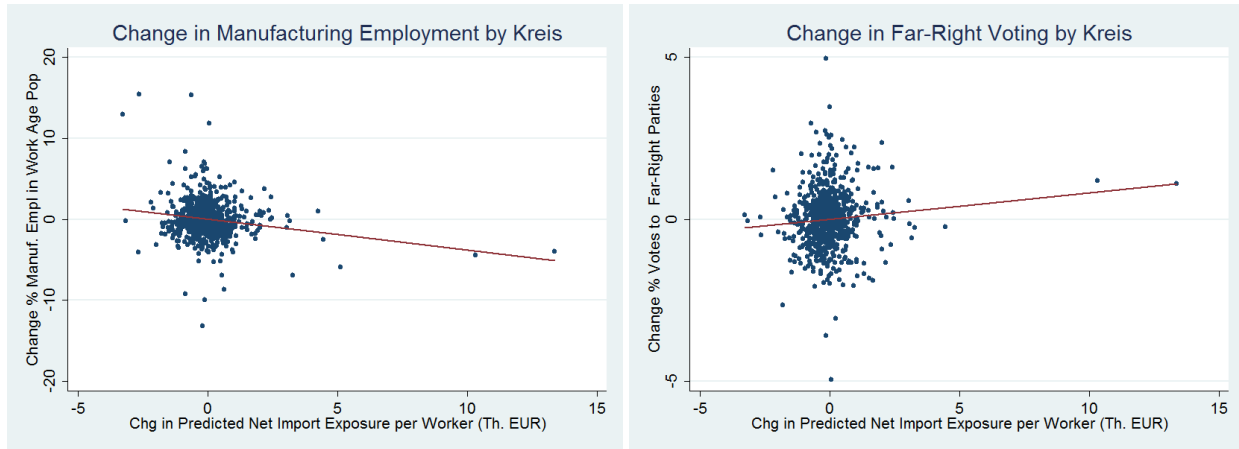

Table 1 reports the results for (6), with changes in the employment share of manufacturing as the outcome. Table 1 reports IV results (in columns 1-4), OLS results (in columns 5-8), as well as the first-stage relation between $\triangle NIPW_{git}$ and $\triangle NIPW_{oit}$ (in columns 1-4 of the bottom panel), and the reduced form relationship between changes in manufacturing employment and the instrument (in columns 5-8 of the bottom panel). each set includes four specifications.[14] As specifications get more conservative from left to right, the R^2 goes up and coefficient estimates on the import competition shock shrink. In the most conservative specification in column 4, €1,000 in $\triangle NIPW_{git}$ reduce the share of manufacturing employment in the working age population by -0.35 percentage points. As the average import exposure per worker increased by €6,147, this reduced the manufacturing employment share by about 2%. Consistent with the identification concern that industry-specific import increases could be endogenous to positive domestic industry-specific demand shocks, the IV results in columns 1-4 are larger in absolute size than the corresponding OLS results in column 5-8. Unsurprisingly, columns 1-4 in the the bottom panel show that the first stage relationship is strong.

Our core result is in table 2, which reports on (7), our key regression, with changes in far-right voting as the outcome. Table 2 replicates only the top-panel of table 1, because the first stage relationship is identical and the reduced form relationship is reported separately in table 3. Table

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[14]These specifications loosely correspond to the main specifications chosen in Table 3 of Autor et al. [2013]. However, the fourth has no equivalent in Autor et al. [2013], because they do not have an unbalanced panel. The fourth specification is the most conservative and the preferred on in Dauth et al. [2014] (Table 1).

Table 1: ADH Results, Change in Manufacturing

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	IV				OLS			
(Net Δ in Import Competition from the East to Germany)/worker	-0.460***	-0.457***	-0.354***	-0.355***	-0.253***	-0.248***	-0.210***	-0.206***
	(-3.335)	(-3.806)	(-3.325)	(-3.372)	(-3.078)	(-3.839)	(-3.975)	(-3.557)
Percentage of employment in manufacturing $_{-1}$	-0.196***	-0.109***	-0.115***	-0.113***	-0.192***	-0.097***	-0.108***	-0.105***
	(-7.895)	(-3.512)	(-3.891)	(-3.864)	(-7.275)	(-2.959)	(-3.386)	(-3.338)
Percentage of college-educated population $_{-1}$		0.005	-0.103	-0.108		-0.019	-0.113	-0.118
		(0.060)	(-0.873)	(-0.913)		(-0.217)	(-0.964)	(-1.011)
Percentage of foreign-born population $_{-1}$		-0.565***	-0.425***	-0.427***		-0.541***	-0.408***	-0.410***
		(-4.979)	(-4.460)	(-4.496)		(-4.980)	(-4.471)	(-4.503)
Percentage of employment among women $_{-1}$		-0.375***	-0.083	-0.073		-0.472***	-0.092	-0.081
		(-2.791)	(-0.566)	(-0.498)		(-3.241)	(-0.608)	(-0.539)
Percentage of employment in routine occupations $_{-1}$		-0.025	0.033	0.035		-0.056	0.026	0.028
		(-0.701)	(0.875)	(0.938)		(-1.535)	(0.668)	(0.715)
R^2					0.297	0.406	0.480	0.500
	FS				RF			
(Net Δ in Import Competition from the East to ``Other")/worker	0.232***	0.230***	0.260***	0.261***	-0.040	-0.047*	-0.080***	-0.084***
	(4.524)	(4.474)	(4.498)	(4.469)	(-1.150)	(-1.784)	(-2.957)	(-3.054)
R^2	0.193	0.253	0.405	0.410	0.262	0.374	0.470	0.492
Observations	731	731	731	731	731	731	731	731
period fixed effects			Yes				Yes	
regional fixed effects			Yes				Yes	
period * regional fixed effects				Yes				Yes

Note: Results for a stacked panel including West Germany in Period 1 (1987-1998) and all Germany in period 2 (1998-2009). The unit of observation is the Gemeinde. T-statistics reported for standard errors, clustered at the level of state, *** p<0.01, ** p<0.05, * p<0.1.

2 includes two additional controls for baseline voting behavior, which is important for the voting outcomes.[15] Again, the R^2 goes up and coefficient estimates on the import competition shock shrink as specifications get more conservative from left to right. The average change in import exposure per worker increased the change in the share of votes to far right parties by about 0.4% (€6,147 · 0.072), relative to an average change that was practically zero over the whole panel.

In Table 3, we ask how much of the effect of import competition on far-right voting is explained by observed adjustments in local markets' manufacturing sector. To do this, we regress changes in far-right voting on the import-competition shock, but controlling for the observable local labor market adjustments $\triangle L_{it}^m$. Since we instrumented $NIPW_{git}$ with $NIPW_{oit}$ in regressions for both outcomes, we cannot use an IV strategy here, because the exclusion restriction would be violated. Instead, we can relate changes in far-right voting directly to the instrument $NIPW_{oit}$, and then ask how much this reduced form relationship changes when we control $\triangle L_{it}^m$. In columns 1-4 of table 3, we estimate the total "reduced form" effect of the instrument $NIPW_{oit}$ on the change in far-right voting. In columns 5-8, we estimate the part of that effect that is not explained by observable local labor market adjustments $\triangle L_{it}^m$. Across specifications, controlling for $\triangle L_{it}^m$ reduces the coefficients

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[15]Our results are stronger when we do not include these additional controls.

Table 2: Main Results, Change in Far-Right Voting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	IV				**OLS**			
(Net Δ in Import Competition from the East to Germany)/worker	0.662***	0.368**	0.067***	0.072***	0.302***	0.165**	0.047*	0.050**
	(2.948)	(2.272)	(3.563)	(3.398)	(3.504)	(2.393)	(1.681)	(2.069)
Percentage of employment in manufacturing $_{-1}$	0.055***	0.005	0.015***	0.014***	0.056***	0.001	0.015**	0.014***
	(4.856)	(0.423)	(2.888)	(2.918)	(4.618)	(0.068)	(2.678)	(2.710)
Percentage of college-educated population $_{-1}$		-0.050	-0.003	-0.019		-0.031	-0.002	-0.017
		(-0.871)	(-0.111)	(-1.007)		(-0.518)	(-0.060)	(-0.881)
Percentage of foreign-born population $_{-1}$		0.028	-0.074	-0.038		0.015	-0.075	-0.040
		(0.437)	(-1.630)	(-1.321)		(0.229)	(-1.618)	(-1.355)
Percentage of employment among women $_{-1}$		0.629***	-0.009	-0.040		0.647***	-0.009	-0.040
		(6.400)	(-0.247)	(-1.617)		(6.416)	(-0.248)	(-1.596)
Percentage of employment in routine occupations $_{-1}$		0.144***	0.009	0.002		0.165***	0.011	0.004
		(5.833)	(0.950)	(0.186)		(6.218)	(1.032)	(0.409)
Percent of votes to far-right parties $_{-1}$	12.473**	14.316**	12.188**	6.180*	13.014**	14.910**	12.153**	6.153*
	(2.220)	(2.525)	(2.226)	(1.762)	(2.190)	(2.521)	(2.171)	(1.712)
Voter turnout $_{-1}$	-0.036	-0.019	-0.007	-0.011	-0.046*	-0.023	-0.007	-0.011
	(-1.417)	(-1.090)	(-0.761)	(-1.197)	(-1.682)	(-1.322)	(-0.771)	(-1.220)
R^2					0.245	0.424	0.761	0.807
Observations	731	731	731	731	731	731	731	731
period fixed effects			Yes				Yes	
regional fixed effects			Yes				Yes	
period * regional fixed effects				Yes				Yes

Note: Results for a stacked panel including West Germany in Period 1 (1987-1998) and all Germany in period 2 (1998-2009). The unit of observation is the Kreis. T-statistics reported for standard errors, clustered at the level of state, *** p<0.01, ** p<0.05, * p<0.1.

by about 30% to 50%. This suggests that a large portion of the overall effect is not explained by directly observable turmoil in local labor markets. This is consistent with existing evidence that much of trade integration goes through increased anxiety about the future (Scheve and Slaughter [2004]), and that this anxiety leads to voters rejecting the political mainstream, over and above measurable impacts on local labor markets (Mughan and Lacy [2002]).

Table 3: Controlling for △ Manufacturing in Effect of $\triangle NIPW_i$ on Far-Right Voting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Net Δ in Import Competition from the East to ``Other")/worker	0.104***	0.047**	0.014***	0.015***	0.085***	0.028	0.007*	0.010**
	(3.304)	(2.158)	(3.908)	(4.168)	(2.960)	(1.444)	(1.927)	(2.566)
Δ in Manufacturing Employment Share					-0.231***	-0.236***	-0.097***	-0.066***
					(-8.289)	(-6.058)	(-4.397)	(-3.555)
R^2	0.228	0.398	0.761	0.807	0.325	0.485	0.773	0.813
Observations	731	731	731	731	731	731	731	731
Initial Manufcturing Employment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Controls		Yes	Yes	Yes		Yes	Yes	Yes
period fixed effects			Yes				Yes	
regional fixed effects			Yes				Yes	
period * regional fixed effects				Yes				Yes

Note: Results for a stacked panel including West Germany in Period 1 (1987-1998) and all Germany in period 2 (1998-2009). The unit of observation is the Kreis. Columns 1 through 4 show the reduced form result (far-right voting on the instrument). In columns 5 - 8, we ask how much of the overall effect of the instrument is explained away by controlling for our main measure of local labor market adjustment. T-statistics reported for standard errors, clustered at the level of state, *** p<0.01, ** p<0.05, * p<0.1.

5 Results East Germany in the Early 1990s

Figure 4 shows the equivalent of Figure 2, but for East Germany from 1990 to 1994. The left panel shows Kreis-variation in RCA_i^{EG} (defined in (5)), the middle panel in $\triangle L_{it}^m$, and the right panel in changes in far-right voting. The RCA_i^{EG} is less spatially scattered than $\triangle NIPW_{git}$ in Figure 2. It is relatively clear that the South-West had an industrial structure that more specialized in areas where West Germany was most productive according to its revealed comparative advantage. Correspondingly, in the South West manufacturing declined the most from 1990 to 1994 and voting for far-right parties increased the most.

Figure 5 again sketches out the identification framework more clearly in two added variable plots, which show the relationship between RCA_i^{EG} and the two main outcomes. The left panel confirms that RCA_i^{EG} decreased manufacturing employment, and the right panel confirms that it significantly increase voting for far-right parties.

The identification approach for East Germany in the 1990s proceeds along similar lines as that in section 4, except that the import competition measure $NIPW_{git}$ is replaced with RCA_i^{EG}, as defined in (5), and that there are fewer specifications because we have a more limited set of baseline controls, and because we only have a single cross-section of first differences from 1990 to 1994. Table 4 tests the equivalents of tables 1, 2, 3, but Furthermore, there is no IV strategy because RCA_i^{EG} is taken to be itself an exogenous local labor demand shock. Columns 1-3 provide the equivalent of table 1, columns 4-6 the equivalent of table 3, and columns 4-6 the equivalent of table 2.

Figure 4: East Germany RCA, (Left), 1990-1994 △ Manuf Empl Share (Middle), and △ Voting for Far-Right Parties (Right)
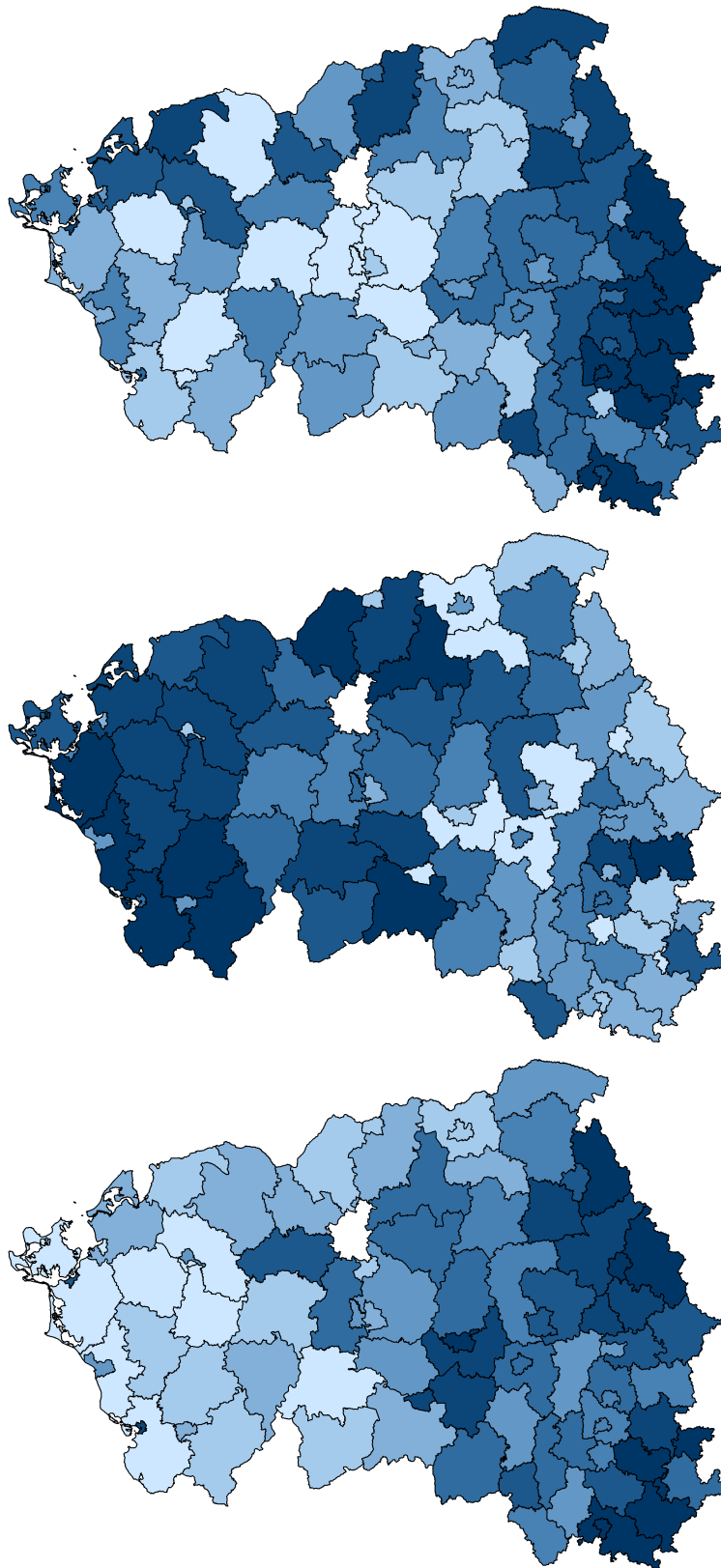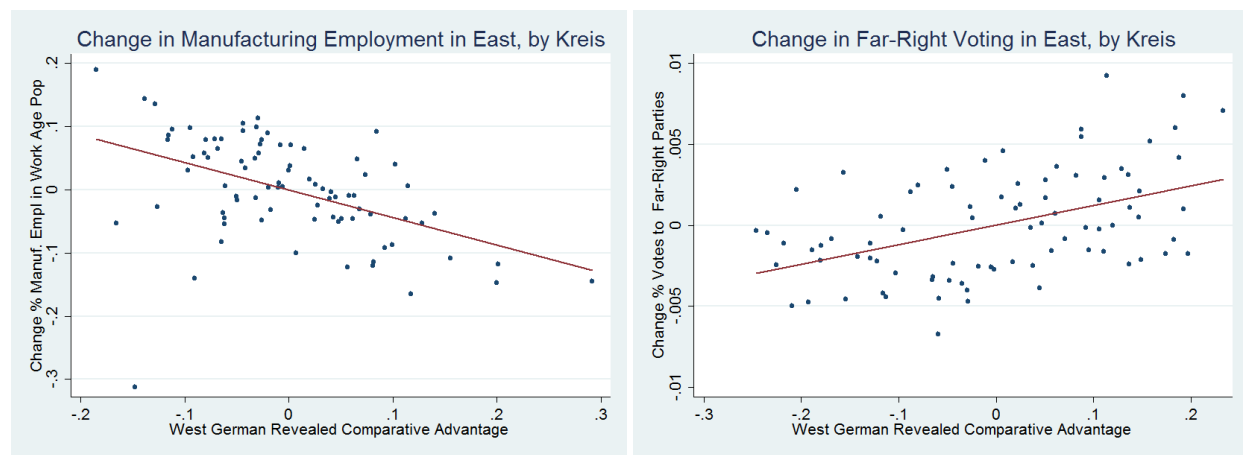
19

Figure 5: Effect of RCA on Change in Manufacturing (Left Panel) and on Change in Voting for Far-Right Parties (Right Panel), Equivalent of Figure 3 for East Germany 1990-1994

6   Results for Attitudinal Data

As documented in Krueger and Pischke [1997] and Falk et al. [2011], specifically far-right crime is an issue in Germany. Far-right crime includes violent acts against foreigners, political graffiti or property damage with a specifically racial or anti-Semitic motive. Data on right and far-right violent crime was documented for the early 1990s in Konkret [1994]. While we are currently collecting this data, a problem is that it is only for a narrow window of three years, which makes it relatively unsuitable for our first-difference identification strategy.

A more promising source of data on right and far-right attitudes is the *German General Social Survey* (Allbus), which asks many questions related to this issue. The first wave of the Allbus started in 1987, and it continues to the present, so that it can be used to generate first-differenced data that can be used in our identification framework. Using Allbus data, Voigtländer and Voth [2012] show that the cohort that grew up under the Nazi regime shows significantly higher levels of anti-Semitism even today. With a focus on contemporary correlates, Mocan and Raschke [2014] show that perceived and actual economic well-being correlate negatively with far-right attitudes such as anti-Semitism. We are also currently collecting this data.

Table 4: $\triangle$% Far-Right Votes$_{it}$ on RCA (col 1-3), $\triangle L^m_{it}$ on RCA (col 4-6), and $\triangle$% Far-Right Votes$_{it}$ on RCA, controlling for $\triangle L^m_{it}$ (col 7-9)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent:			Δ in Far-Right Voting					Δ in Manufacturing Employment	
RCA	0.012***	0.008**	0.007*	0.010***	0.007**	0.006*	-0.120***	-0.071	-0.085*
	(5.061)	(2.277)	(1.901)	(3.799)	(2.015)	(1.674)	(-3.444)	(-1.289)	(-1.895)
Percentage of employment in		0.007	0.005		0.006	0.004		-0.078	-0.075
manufacturing $_{-1}$		(1.564)	(1.153)		(1.398)	(1.046)		(-1.459)	(-1.338)
Percentage of college-educated			-0.012			-0.010			0.251
population $_{-1}$			(-1.105)			(-0.867)			(1.217)
Percentage above age 65 of			0.029*			0.029*			0.015
population $_{-1}$			(1.672)			(1.678)			
Δ in Manufacturing Employment				-0.017	-0.014	-0.008			
Share				(-1.350)	(-1.045)	(-0.595)			
R^2	0.226	0.251	0.300	0.246	0.264	0.304	0.245	0.283	0.336
Observations	85	85	85	85	85	85	85	85	85

Note: Results for East Germany only, where the change is from 1990 (the year of reunification) to 1994. The unit of observation is the Kreis. Columns 1 through 3 show the equivalent to the main voting result in Table 2. Unlike in the identification strategy for the main stacked panel, there is no IV strategy, because RCA is an exogenous local demand shock. Further, there are fewer specifications because this is a singel cross-section of first differences. In columns 4 through 6, we control for observable labor market adjustment, as in Table 3 for the main panel. In columns 7 through 9 we study the effect of the shock on local labor market adjustment, as in Table 1. T-statistics reported for standard errors clustered at the level of state, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

7 Discussion

The goal of this paper is to estimate a plausibly causal effect of trade integration on political radicalization, specifically voting for far-right parties.

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Figure 6: Correlation between Change in Manufacturing and Change in Voting for Far-Right Parties for the Stacked Panel in Section 4.1 (Left), and East Germany 1990-1994 (Right)
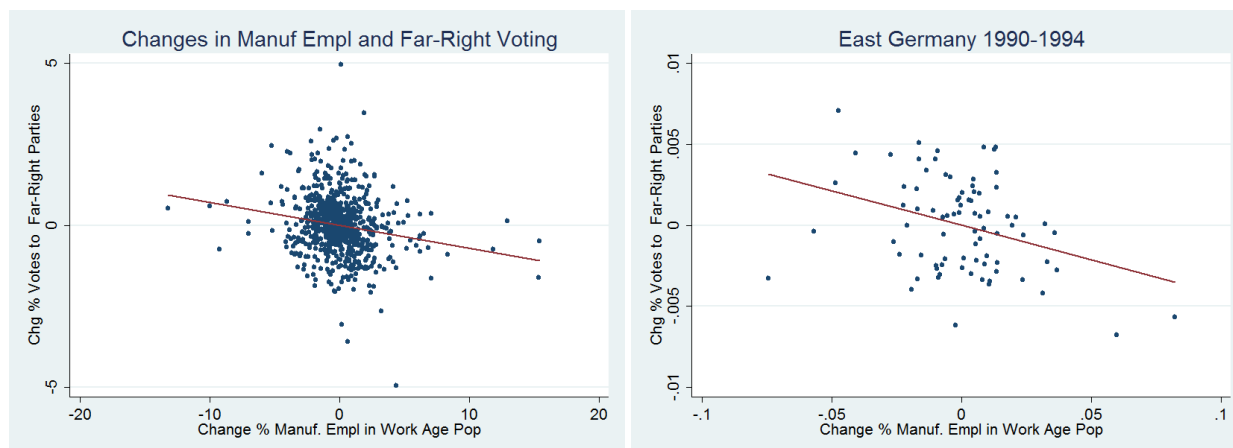

Table 5: ADH Results, Gemeinde-level Equivalent of Table 1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		IV				OLS		
(Net Δ in Import Competition from the East to Germany)/worker	-0.403***	-0.230***	-0.187***	-0.181***	-0.272***	-0.232***	-0.172***	-0.151***
	(-4.633)	(-3.682)	(-3.746)	(-3.809)	(-4.494)	(-4.555)	(-3.882)	(-3.337)
Percentage of employment in manufacturing $_{-1}$	-0.197***	-0.052	-0.057*	-0.050	-0.200***	-0.046	-0.053	-0.045
	(-6.318)	(-1.509)	(-1.830)	(-1.609)	(-6.181)	(-1.346)	(-1.635)	(-1.390)
Percentage of college-educated population $_{-1}$		0.254	-0.344	-0.377		0.231	-0.361	-0.396
		(1.454)	(-1.261)	(-1.372)		(1.243)	(-1.304)	(-1.417)
Percentage of foreign-born population $_{-1}$		-0.662***	-0.402***	-0.397***		-0.629***	-0.385***	-0.380***
		(-5.231)	(-3.621)	(-3.571)		(-5.327)	(-3.490)	(-3.429)
Percentage of employment among women $_{-1}$		-0.071	0.315	0.308		-0.160	0.321	0.315
		(-0.247)	(1.078)	(1.066)		(-0.558)	(1.074)	(1.064)
Percentage of employment in routine occupations $_{-1}$		-0.086**	-0.075*	-0.075*		-0.122**	-0.087*	-0.088*
		(-2.152)	(-1.838)	(-1.826)		(-2.511)	(-1.900)	(-1.875)
R^2					0.297	0.407	0.522	0.543
		FS				RF		
(Net Δ in Import Competition from the East to ``Other")/worker	0.182***	0.163***	0.217***	0.222***	-0.019	0.004	-0.043	-0.051**
	(5.345)	(3.990)	(5.013)	(5.179)	(-0.457)	(0.119)	(-1.675)	(-2.115)
R^2	0.138	0.239	0.427	0.455	0.251	0.377	0.512	0.539
Observations	20,581	20,581	20,581	20,581	20,581	20,581	20,581	20,581
period fixed effects			Yes				Yes	
regional fixed effects			Yes				Yes	
period * regional fixed effects				Yes				Yes

Note: Results for a stacked panel including West Germany in Period 1 (1987-1998) and all Germany in period 2 (1998-2009). The unit of observation is the Gemeinde. T-statistics reported for standard errors, clustered at the level of Kreis, *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Main Results, Gemeinde-level Equivalent of Table 2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	IV				**OLS**			
(Net Δ in Import Competition from the East to Germany)/worker	0.755***	0.557***	0.169*	0.160***	0.422***	0.301***	0.104***	0.060**
	(4.657)	(3.796)	(1.905)	(2.592)	(5.770)	(5.372)	(2.793)	(2.618)
Percentage of employment in manufacturing $_{-1}$	0.095***	0.049*	0.035**	0.024**	0.104***	0.040*	0.032***	0.020**
	(5.469)	(1.751)	(2.510)	(2.498)	(7.096)	(1.948)	(2.692)	(2.468)
Percentage of college-educated population $_{-1}$		-0.432***	-0.107	-0.070		-0.400***	-0.098	-0.055
		(-3.447)	(-1.319)	(-1.163)		(-3.355)	(-1.243)	(-0.947)
Percentage of foreign-born population $_{-1}$		0.145**	0.001	-0.013		0.105	-0.007	-0.027
		(2.223)	(0.015)	(-0.489)		(1.666)	(-0.179)	(-1.037)
Percentage of employment among women $_{-1}$		0.582***	-0.116**	-0.116**		0.698***	-0.121**	-0.123**
		(4.223)	(-2.066)	(-2.503)		(4.300)	(-2.141)	(-2.623)
Percentage of employment in routine occupations $_{-1}$		0.050	-0.000	-0.004		0.097***	0.007	0.006
		(1.176)	(-0.015)	(-0.238)		(3.600)	(0.442)	(0.457)
Percent of votes to far-right parties $_{-1}$	4.401*	5.251**	2.706	2.123*	4.957	5.885**	2.577	2.020
	(1.691)	(2.207)	(0.999)	(1.675)	(1.635)	(2.021)	(0.960)	(1.582)
Voter turnout $_{-1}$	-0.007	-0.016	-0.026	-0.039**	0.005	-0.014	-0.025	-0.039**
	(-0.286)	(-0.629)	(-1.168)	(-2.395)	(0.185)	(-0.508)	(-1.126)	(-2.275)
R^2					0.196	0.291	0.445	0.496
Observations	20,581	20,581	20,581	20,581	20,581	20,581	20,581	20,581
period fixed effects			Yes				Yes	
regional fixed effects			Yes				Yes	
period * regional fixed effects				Yes				Yes

Note: Results for a stacked panel including West Germany in Period 1 (1987-1998) and all Germany in period 2 (1998-2009). The unit of observation is the Gemeinde. T-statistics reported for standard errors, clustered at the level of Kreis, *** p<0.01, ** p<0.05, * p<0.1.