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Local Trade Shocks and the Nationalist Backlash in Political Attitudes: Panel Data Evidence from Great Britain

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Abstract: Is opposition to globalization rooted in economic transformations caused by international trade? To contribute to the ongoing debate on this question, we propose a "nationalist backlash" thesis and test it with panel data on individual political attitudes. We argue that individuals living in regions suffering from stronger import competition develop more nationalist attitudes as part of a broad counter-reaction to globalization. Our analysis of data from the British Household Panel Study (BHPS) finds that respondents from regions exposed to higher imports from low-wage countries – in particular, China – turn more critical of EU membership and international cooperation. Moreover, on an affective level, their nationalist sentiments increase. In contrast, there is no evidence that regional trade shocks cause economic policy orientations to shift leftwards. We thus document a direct individual-level response to import shocks in the form of rising nationalist attitudes that helps to explain these shocks' aggregate electoral consequences in terms of increased vote shares for the radical right.

Keywords: China shock; globalization; import competition; international trade; nationalism; political attitudes; EU support; panel data.

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1. Introduction

In the aftermath of the election of Donald Trump, the June 2016 Brexit referendum in the UK and the parallel electoral gains of right-wing populist parties with anti-globalization platforms in several rich Western democracies, a vivid scholarly debate on the sources behind this nationalist backlash against globalization has set in (e.g. Hobolt 2016; Inglehart and Norris 2019; Mutz 2018; Rodrik 2018). This debate has often been framed around the question of culture vs. economics: Is public opposition to globalization rooted in deep-seated cultural values—such as authoritarianism, xenophobia or nationalism—*or* is it best understood via economic grievances among globalization's material losers? Yet, culture and economics might be more interconnected than implied by this simple juxtaposition (Colantone and Stanig 2019; Gidron and Hall 2017, 2019). Indeed, evidence begins to accumulate that cultural values are affected by economic distress experienced by individuals, with regional disparities playing an important part (Adler and Ansell 2020; Ballard-Rosa et al. 2019, 2020; Broz et al. 2019; Carreras et al. 2019; Guiso et al. 2018). For example, Carreras et al. (2019) document that anti-immigrant and Eurosceptic attitudes are more widespread in British regions suffering from long-run economic decline.

Such economic distress may be a direct consequence of globalization, specifically of the profound redistributive effects of import competition (Acemoglu et al. 2016; Autor et al. 2013, 2016a). Recent research shows that, across Western Europe, parties with nationalist platforms have gained larger vote shares in regions "shocked" by surging Chinese imports (Colantone and Stanig 2018a; Dippel et al. 2015; Malgouyres 2017). This line of research suggests that the nationalist backlash against globalization at the ballot boxes may partly be a direct consequence of the economic transformations caused by globalization itself.

In the present study, we transfer the idea of a nationalist backlash being caused by regional exposure to import competition to the level of *individual* political attitudes. Our key argument

is that individuals living in regions suffering from import competition form more nationalist and isolationist attitudes as part of a broad counter-reaction to globalization. We thus expect them to become more emotionally attached to the nation and less supportive of transfers of political power from the national to the international level.

We test this nationalist backlash hypothesis using data from the British Household Panel Study (BHPS), looking at the evolvement of nationalist attitudes between 1999 and 2008. This period covers China's WTO entry in 2001 and the subsequent surge in imports from China-i.e. the "China shock" (Autor et al. 2016). Like previous work (e.g. Autor et al. 2013; Ballard-Rosa et al. 2019; Colantone and Stanig 2018a, 2018b), we capture changes in region-specific import competition by combining data on increases in Chinese imports across sectors with employment shares of these sectors at the NUTS 3 regional level.¹ Our results indicate that individuals from regions more exposed to import competition turn more critical of international cooperation and EU membership. Moreover, their levels of nationalist sentiment increase. Following work on the "compensation hypothesis" (Cameron 1978; Rodrik 1998) and its individual-level mechanics (Walter 2010; Rommel and Walter 2017; Walter 2017), we also test for an effect of import competition on economic policy orientations. However, we do not obtain any evidence that local import exposure matters in this regard. We thus document a direct individual-level response to regional trade shocks in the form of rising nationalist attitudes—but no rising demand for state intervention in the economy- which helps to explain their electoral consequences in terms of the growing vote shares for parties of the radical right.

Our results corroborate findings from previous research on the electoral consequences of import competition—and the China shock in particular, most notably the pathbreaking studies by Colantone and Stanig (2018a, 2018b). At the same time, our study is innovative in at least three

¹ NUTS stands for "Nomenclature of Territorial Units for Statistics". It is the EU's geographical scheme for subdividing EU member states into regional units for statistical purposes.

important respects. First, in relation to previous research that looks at the impact of trade shocks on aggregate election results (Autor et al. 2017, 2018; Colantone and Stanig 2018a, 2018b; Dippel et al. 2015; Malgouyres 2017), our study produces additional insights on the causal mechanisms that connect trade shocks and voting for nationalist parties. Such a connection may arise from several mechanisms—including a channel that runs through increases in general political disaffection rather than political attitudes shifting genuinely towards positions specific to the radical right. Our results imply support for one straight-forward mechanism: Vote shares of nationalist parties increase because nationalist attitudes increase among voters.

Second, in relation to parallel research that also studies the impact of local trade shocks on political attitudes (Ballard-Rosa et al. 2019, 2020; Colantone and Stanig 2018c; Hays et al. 2019), our work is distinct in studying the impact on attitudes related to national identification and support for international cooperation and integration. We suggest that this may be an important part of the public's response to import shocks. Consider that it is a key tenet of the theory of embedded liberalism (Ruggie 1982)—one of the hallmark paradigms in international political economy—that the economic vagaries resulting from open markets may endanger not only public support for international economic openness (Hays et al. 2005), but for multilateral cooperation more broadly. By investigating the impact of trade shocks on support for nationalist and isolationist ideas, our study goes some way towards putting this idea to a rigorous empirical test.

Third, a critical methodological innovation of our study is the use of individual-level panel data. Our empirical analysis crucially benefits from the fact that the attitudinal items of interest run repeatedly in the BHPS. By controlling for prior attitudes, we leverage intra-individual changes in attitudes over time for a clean identification of the effect of local import shocks. This helps in overcoming the problem of purely cross-sectional designs that import shocks might be correlated with initial differences across regions, be it in voting patterns or political attitudes. In fact, the variation in industry specialization across regions—from which the local import shock is computed—in itself may contribute to differences in political attitudes and behavior across regions, as people's workplaces shape their political preferences (Kitschelt and Rehm 2014). While previous research relying on cross-sectional data draws on a range of techniques to carefully engage with that confoundedness concern, it remains a crucial advantage that individual-level panel data allow us to observe intra-individual change in political attitudes.

The remainder of this paper is structured as follows. In the next section, we discuss previous literature and put forth the hypothesis of a nationalist backlash in individual attitudes. The third section introduces our research design. The fourth section presents our empirical results. A final section summarizes our key findings and discusses limitations as well as potential avenues for future research.

2. Import competition and the nationalist backlash

Our study builds on a growing body of research that examines the effects of trade shocks on voting results at the local level. These contributions are motivated by economic studies revealing large effects of low-cost import competition on economic activity, particularly at the regional level. The seminal contribution is Autor et al.'s (2013) work on the labor market effects of growing Chinese imports in the US. To study the impact of the "China shock", Autor et al. (2013) exploit variation in import exposure originating from initial differences in industry specialization across US commuting zones. This study, and subsequent work (Acemoglu 2016; Autor et al. 2016a), finds large negative effects of exposure to Chinese import competition in terms of higher unemployment, lower labor force participation and lower wages. Given these economic consequences, scholars have turned to the potential political ramifications of trade shocks, investigating how similar measures of local import exposure are related to voting results.

For the United States, Autor et al. (2016b), report a polarization effect according to which tradeexposed districts that were initially Republican become more likely to elect conservative instead of moderate Republicans, whereas Democratic districts would become more likely to elect liberal rather than moderate Democrats. In a follow-up research note, Autor et al. (2017) uncover that the change in the Republican vote share in presidential elections between 2000 and 2016 is positively related to local exposure to Chinese imports (but see Che et al. 2016 for somewhat divergent findings). Their calculations suggest that Donald Trump might not have won the crucial "rust-belt" states in 2016—and accordingly the majority in the Electoral College—had the Chinese import shock been smaller.²

In a similar vein, research on Western Europe reveals that trade shocks are associated with gains for parties of the radical right, both in single and cross-country studies. Relying on data for Germany from 1987 to 2009, Dippel et al. (2015) find that fringe parties of the extreme right profit from local import competition with China and Eastern Europe. Notably, this study obtains similar, albeit smaller, effects on voting for the extreme right for a measure of personal import exposure on the job, computed for sectors of employment. For France, Malgouyres (2017) reports that the far-right Front National (now: Rassemblement National) fares better in localities exposed to low-wage country import competition.

In a path-breaking study of 15 West European countries, Colantone and Stanig (2018a) discover that the higher the exposure of NUTS 2 regions to increasing Chinese imports, the more could parties of the radical right expand their vote shares. Going beyond party families, these authors also consider how nationalist and isolationist parties actually are by counting positive references to a national way of life as well as negative statements towards internationalism and the European Union in their manifestos. Combining parties' resulting nationalism scores and their

² There is also evidence of an anti-incumbent effect from the US case: Using different approaches, Margalit (2011) and Jensen et al. (2017) find that incumbents from both parties lose from negative effects of trade at the local level.

vote shares at the local level into a comprehensive measure of the ideological center of gravity, Colantone and Stanig (2018a) find local party systems to shift in a nationalist direction in response to local exposure to the China shock.

Moving from elections to referendums, a second study by Colantone and Stanig (2018b) demonstrates that NUTS 3 regions affected by imports from China were more likely to vote leave in the Brexit referendum. Finding little heterogeneity in the effect of the China shock across individuals with different socio-economic characteristics in both studies, Colantone and Stanig (2018a; 2018b) conclude that individuals react to economic consequences for their localities in a socio-tropic way.

Taken together, these findings provide compelling evidence that local import shocks affect voting behavior, and that it is nationalist parties of the radical right—who oppose globalization most fiercely, particularly on the cultural dimension of political conflict (Mudde 2008; Kriesi et al. 2008)—that profit most from local trade shocks. However, these results do not reveal which individual-level mechanisms lead to the observed aggregate-level patterns. In other words, it is difficult to infer from voting results why exactly specific parties benefit—and others lose—from increasing import competition. We therefore maintain that studying individuals' political attitudes is a useful complement to existing studies on trade shocks and voting behavior, because they help us understand the attitudinal changes underlying individuals' voting behavior and, eventually, aggregate voting outcomes.

Consider that there are various ways in which import shocks may bring about gains for the radical right. It may seem plausible that radical right parties gain because policy attitudes shift towards their positions. Yet, it may also be the case that they just profit from a general sense of political disaffection caused by frustration with socio-economic conditions in regions suffering from import competition. Perhaps parties of the radical right, with their populist messaging, excel in mobilizing the political potential inherent in such disaffection in the current climate.

But even if one finds that these parties' success is due to shifting policy positions and value orientations, there remains a whole set of possible channels. Our goal is to investigate one seemingly straight-forward—and important, we believe—of these possible channels, namely that the nationalist backlash observed at the polls is a result of a nationalist backlash in individual attitudes.³ We ask whether, in response to local exposure to import competition, individuals' emotional identification with the nation increases, and whether their support for international political cooperation and integration dwindles. In short, do people living in regions affected by stronger import competition turn more nationalist?

There are a handful of contributions—conducted in parallel to this study—that share our belief in the potential of investigations into the effects of import competition on political attitudes, and particularly in their ability to illuminate mechanisms connecting trade shocks and voting. Yet, these studies, all of which rely on cross-sectional data, are concerned with other types of attitudinal responses—which, of course, may also account for gains of the radical right in regions affected by import competition.

Colantone and Stanig (2018c) use pooled data from the European Social Survey (ESS) and the European Values Study (EVS) to study the impact of trade shocks, measured at the level of NUTS 2 regions, on political attitudes. They find that respondents residing in regions with a larger Chinese import shock are less supportive of democracy and more critical of immigration, particularly its cultural aspects. The latter finding is mirrored in Hays et al.'s (2019) study based on the 2016 ESS. Ballard-Rosa et al. (2019, 2020) draw on original surveys conducted in 2017 in the UK and the US, respectively, to study the connection between local trade shocks and authoritarian values. Ballard-Rosa et al. (2019) find local exposure to increasing Chinese imports, measured at the level of UK Travel to Work Areas, to cause authoritarian values, in particular authoritarian aggression. Ballard-Rosa et al.'s (2020) US based study reports an

³ On the connection between nationalist attitudes and voting for the radical right, see Lubbers and Coenders (2017).

interaction between exposure to the China shock, measured at the level of commuting zones, and demographic diversity: Import exposure increases authoritarian values among whites especially in areas with a substantial share of non-whites. If we look for a common theoretical denominator across these studies, it is the notion that threats to and frustrations with one's social status results in a higher demand for norm as well as cultural conformity. This goes along with increased authoritarian tendencies and hostility towards out-groups.

Our own argument is related to this general notion, but emphasizes identification with the nation as a psychological mechanism to cope with threats to one's social status and adds the idea of a broad counter-reaction to globalization. According to this latter idea, those negatively affected by one aspect of globalization, such as trade, may turn critical towards other facets of globalization, such as the transfer of political power from the national to the international level. The basic intuition behind our nationalist backlash hypothesis, thus, amounts to this: Those who lose out from globalization, and import competition specifically, will turn against it and towards an allegiant identification with the nation.

As a starting point, consider the simple baseline expectation that those who are negatively affected by import competition will be more opposed to international trade. This obviously follows from the rationalist assumption that individuals' material self-interest shapes preferences. Research on the determinants of attitudes towards international trade reveals ample evidence for the presence of such economic self-interest considerations (e.g. Mayda and Rodrik 2005; O'Rourke and Sinnott 2001; Scheve and Slaughter 2001), specifically when gains and losses are visible to individuals (Rho and Tomz 2017; Steiner 2018).

The crucial next step in our argument is that we reason the backlash to be not limited to attitudes towards trade, but to extend to a broader nationalist backlash against globalization in its various manifestations. In making this argument, we assume that individuals do not neatly distinguish between the different facets of globalization, but that they are connected within their belief systems. This assumption finds justification in empirical evidence that individuals' attitudes on different facets of globalization, such as immigration, European integration and free trade, are closely related to each other (de Vries 2018; Kriesi et al. 2008; Hellwig 2014; Hillen and Steiner 2019). In a recent study using survey data from Germany, Mader et al. (2019) find that citizens, when repeatedly surveyed, report stable attitudes towards the abstract concept of "globalization". Moreover, these attitudes are closely aligned with orientations towards specific issues related to globalization and independently affect voting decisions. This suggests that globalization may act as an emotionally charged symbol for broad changes in the economic, social and political domain that individuals view either positively or negatively.

Margalit (2012: 487) proposes the metaphor of an "openness package" to denote a similar idea, namely that "people view the material effects of trade as only one component of a broader 'package' of openness that includes processes such as [...] the increasing exposure to foreign influences [or] a shift towards a less traditionalist society". It is because of this mental connection, Margalit argues, that nationalist and ethnocentric sentiments affect support for the prima facie economic issue of international trade—as shown in his study. Our argument is that this logic works in the other direction as well: The material consequences of trade may affect nationalist sentiments and views on the transfer of political power from the national to the international level. We therefore expect that greater exposure to import competition causes an increase in nationalist feelings and a decreasing support for political denationalization.

This expectation finds additional justification from studies on the economic drivers of national identity in the tradition of the social identity paradigm (Tajfel and Turner 1986). According to Shayo's (2009) seminal model, the attractiveness of identifying with the nation increases when the psychological reward from alternative forms of group identification, such as class, erodes due to a decrease in social status of these groups. Shayo uses this reasoning to explain why individuals with lower incomes tend to exhibit higher levels of nationalism, especially so in

countries where the gap between the rich and the poor is large. Obedient attachment to the nation can thus be an attractive social identity for individuals who face economic hardships and status threats. This tendency may be stronger to the extent that international competition is salient rendering "one's membership in the nation a more salient attribute" (Shayo 2009: 155).

These considerations may well apply to individuals living in regions facing relative economic decline due to import competition. We therefore emphasize once more that we expect the counter-reaction to globalization discussed above to not only affect individuals' issue positions on the desired level of international political integration, but to extend to gut-level feelings concerning national identification. More precisely, we expect beliefs in the inherent superiority of one's nation (or "national chauvinism", see: Davidov 2009; Herrmann 2017) and uncritical attachment to it (or "blind patriotism", see: Schatz et al. 1999) to become more widespread where trade shocks hit harder. In short, nationalist sentiment might rise.

Overall, we expect a broad nationalist backlash in political attitudes that manifests itself at different levels. As our goal is to study the nationalist backlash thesis as comprehensively as possible, we formulate three hypotheses on different observable implications of our theory. The first hypothesis deals with the possibility of an increase in gut-level nationalism, the subsequent two with decreasing support for international political cooperation and integration – in general, and specifically in the form of EU membership. Collectively, we will refer to these three attitudes as "nationalist attitudes".

H1: Exposure to import competition increases nationalist sentiment.

H2: Exposure to import competition reduces support for international cooperation.

H3: Exposure to import competition decreases support for EU membership.

When testing these general expectations below, we follow previous research in focusing on (a) exposure to import competition at the *local* level and (b) on imports from China. Before

proceeding to the empirical analyses, we thus need to clarify the relevance of the local context and why we focus on imports from China.

As we focus on a *region's* exposure to low-cost import competition (rather than *individual* exposure), our argument rests on the assumption that the local context is important for individual attitude formation. Several channels might contribute to such a relevance of the local context (also see: Broz et al. 2019). First, there might be direct as well as indirect effects of an increasing exposure to imports on individuals' economic well-being, which then might have repercussions on political attitudes. Most obviously, the likelihood that an individual's wage, employment or job security is negatively affected by foreign low-wage competition increases in the average exposure of the region she or he lives in. Yet, even if an individual is employed in an industry that is not affected by imports—e.g. because she or he is employed by the government or in the services sector—his or her economic well-being might be indirectly affected to the extent that it is sensitive to the state of the local economy. Second, in addition to reacting to the (direct or indirect) effects on individual material well-being, individuals might be socio-tropically motivated and care about their region of residence. Third, the local context might matter because discussions among individuals could lead to a contagion of political attitudes within regions.

Our focus on imports from *China* is motivated by the consideration that rapidly increasing imports from China, especially after its WTO accession in 2001, caused significant structural economic change in many developed countries (Acemoglu et al. 2016; Autor et al. 2013, 2016a). In essence, we are not interested in the repercussions of growing Chinese imports as such. Instead, we leverage the "China shock" as a clearly identifiable case of the general phenomenon of low-wage import competition. This focus on China also spares us the tedious distinction between countries that contributed to low-wage competition and countries that did not. Nonetheless, we would expect the same logic to apply to rising import competition from

other emerging market economies. By contrast, imports from high-income countries, in contrast, are unlikely to induce the same extent of structural change as imports from low-wage countries and, thus, to exhibit similar effects.⁴

3. Data and methods

We test the nationalist backlash thesis using data from the British Household Panel Study (BHPS). This household panel runs from 1991 to 2008, consisting of yearly observations. The survey was designed to include a nationally representative sample of more than 5,000 households and approximately 10,000 individuals within these households. Additional subsamples were added later: Wave 9 (1999) added additional samples from Scotland and Wales, and wave 11 (2001) added an additional sample from Northern Ireland. The interview fieldwork for a wave began in September of the respective year (e.g. 1991 for wave 1), with the bulk of interviews taking place until the end of December, and lasted till the end of April of the following year. We assign to each individual the year of the wave their interview was part of.

As is usual for a household panel study, the data contain rich information on individuals' socioeconomic situation, including their formal education, their labor market status, earnings, etc. This set of questions is part of a core questionnaire included in every wave, i.e. year. We use information on wages to conduct some validity checks, i.e. to validate our measurement of the China shock as well as our modelling strategy.

<u>3.1 Dependent variables</u>

The items on political attitudes which we use to test the nationalist backlash thesis are all part of a so called "rotating core". They were repeatedly included in the BHPS but not in every year and partly in irregular intervals. We measure nationalist sentiment as well as support for international cooperation from a battery of questions on "national identity" administered in

⁴ For robustness checks, we computed alternative versions of the local import shock measure that varied the source countries to test these two ideas.

1999, 2002, 2005 and 2008. Questions on support for membership in the EU were included in 1999, 2002 and 2006. As we are interested in intra-individual change, we can use the first observations from 1999 only to control for lagged values, making 2002 the first year we study as an outcome. We are thus able to study changes in nationalist attitudes in the 2000s – i.e. during a period in which imports from China into the UK surged, following China's entry into the WTO in 2001.

In *Table 1*, we list information on the items we use to measure our three dependent variables. Our measure of nationalist sentiment combines an item on whether individuals "would rather be a citizen of Britain than of any other country in the world" and one on whether "people in Britain are too ready to criticize their country". Both items capture an affective dimension of nationalism in the sense of national pride and an uncritical attachment to one's nation.⁵ Support for international cooperation is measured via agreement with a single statement on whether "Britain should co-operate with other countries, even if it means giving up some independence". For attitudes towards the EU, we combine three different questions that each ask about opinions on British membership in the EU. We run principal component factor analyses to combine these items into single latent scales using the predicted factor scores. The reasonably strong factor loadings, shown in *Table 1*, lend justification to combine the items in this way, though we consider alternatives in robustness checks reported below.

⁵ There is a vivid debate on the measurement of different aspects of national identity. Following this literature, the first item is best conceived of as a measure of "national chauvinism", i.e. the belief in the inherent superiority of one's nation, albeit capturing a relatively weak form of such chauvinism compared to alternative instruments (see e.g. Herrmann 2017: S70). The second is a measure of "blind patriotism", i.e. the "attachment to country characterized by unquestioning positive evaluation, staunch allegiance, and intolerance of criticism" (Schatz et al. 1999: 151). For our purposes, it is key that both items share a focus on an emotional dimension of nationalist attachment. For another study using these two items for a measure of "nationalist sentiment" in Britain see Heath et al. (1999). In robustness checks, we considered alternative scales, including additional items, and found our results to be robust (see below).

Construct	Available	Question/Statement	Scale	Loading	Variance
	years			on factor	by factor
Nationalist	1999,	"I would rather be a citizen of Britain	0-4	0.77	0.60
sentiment	2002,	than of any other country in the world"			
	2005,	"People in Britain are too ready to	0-4	0.77	
	2008	criticize their country"			
Support for	1999,	"Britain should co-operate with other	0-4	single	single
international	2002,	countries, even if it means giving up		item	item
cooperation	2005,	some independence"			
	2008				
Support for	1999,	"Generally speaking, do you think that	0-2	0.89	0.70
EU	2002,	Britain's membership of the European			
membership	2006	Union is a good thing, a bad thing or is			
		it neither good nor bad?"			
		"Taking everything into consideration,	0-1	0.85	
		would you say that Britain has on			
		balance benefited or not from being a			
		member of the European Union?"			
		"Do you think Britain's long-term	0-4	0.77	
		policy should be			
		- to leave the European Union			
		- to stay in the EU and try to reduce the			
		EU's powers			
		- to leave things as they are			
		- to stay in the EU and try and increase			
		the EU's powers or			
		- to work for the formation of a single			
		European government?"			

Table 1: Operationalization of nationalist attitudes in the BHPS

Note: Factor loadings and explained variance are from a principal component factor analysis with the items for the respective construct.

3.2 Model specification

Before we describe in detail how we computed the Chinese import shock for the different NUTS 3 regions, we need to explain our modeling strategy. A crucial component of our strategy to identify the causal effect of exposure to import competition is to control for individuals' prior attitudes, effectively studying changes in attitudes over time. To leverage the panel structure best, we thus focus on two consecutive observations, regressing the level value of an attitude in t on the lagged value of this attitude in period t-x and other covariates, with x indicating the

number of years separating two consecutive observations.⁶ Our baseline specification is given by the following expression:

(1)
$$Y_{ir,t} = \alpha + \rho Y_{ir,t-x} + \beta C S_{r,t} + \sum_{k=1}^{K} \gamma_k x_{ir,t}^k + \xi_t + \varepsilon_r + \varepsilon_{r,t} + v_{ir,t}$$

In (1), *i* indexes individuals, *t* years and *r* regions. We regress the attitude of individual *i* residing in region *r* at time $t(Y_{ir,t})$ on its lagged value $Y_{ir,t-x}$, the corresponding Chinese import shock for the individual's region of residence at time $t(CS_{r,t})$, a vector of individual-level controls $(x_{ir,t}^k)$, and a set of year fixed effects (ξ_t) . In later models, we add further controls at regional levels to equation (1) as explained below.

In addition to error terms at the individual-year level ($v_{ir,t}$), equation (1) includes error terms at the NUTS 3 regional level (ε_r) and at the level of NUTS 3 region-year combinations ($\varepsilon_{r,t}$), treating both as random effects. This is crucial, as our data are characterized by a hierarchical multilevel structure with three levels: Observations of individuals in year *t* (level 1) are nested within NUTS 3 region-year combinations (level 2), and NUTS 3 region-years are nested within NUTS 3 regions (level 3).⁷ The underlying inferential challenge is that we are interested in how the Chinese import shock affects attitudes within a region, yet we only observe a sample of individuals within each NUTS 3 region. The multilevel model incorporates this uncertainty inherent in making inferences from the individual to the regional level (Gelman and Hill 2006).

⁶ Note that such a specification is equivalent to putting the change in the value of an attitude between *t*-*x* and *t* on the left-hand side, while keeping the lagged level value in *t*-*x* on the right-hand side. Both approaches give us the exact same results for the impact of the China shock. From a statistical point of view, it is mandatory to control for the lagged level value in *t*-*x* to capture regression to the mean effects. The presence of regression to the mean effects follows from the fact that the attitudes of interest are measured via response scales with end points. For example, if someone already scores maximally high on nationalist sentiment, nationalist sentiment cannot increase any further. In terms of our estimation equation (1), we would thus expect ρ to take on a value well below 1.

⁷ Note that results are virtually identical when we omit the third level. We nonetheless implement the slightly more complex three-level structure, because it is more appropriate from a conceptual vantage point. In some of the robustness checks, we resort to the simpler specification with two levels, however, to facilitate convergence of the maximum likelihood estimator (see below).

We estimate linear models for all types of dependent variables on our main models—i.e. for the factor scores as well as the single item measure. This facilitates interpretation and comparability, while ordered logit hierarchical models for the ordinal response variable give similar results (see below). Technically, we estimate hierarchical multilevel models with random intercepts for NUTS 3 regions and NUTS 3 region-years via the "mixed" command in Stata 16.1.⁸

3.3 Measuring local exposure to Chinese imports

Our measurement of the Chinese import shocks at the level of NUTS 3 regions is based on the general approach developed by Autor et al. (2013) and combines two pieces of information: The initial employment structure of a region and the increase in imports from China at the industry level. This approach allows computing how strongly regions are affected by increasing imports within an industry, based on how many residents of the region were initially employed in this industry. Quite intuitively, the import shock will be high if many of the jobs within a region were in an industry that subsequently experienced a large increase of imports from China.

We use two versions of operationalizing this general idea that differ in how exactly we compute the change in Chinese imports by sector. The first is identical to the by now canonical measure of Autor et al. (2013), used by Colantone and Stanig (2018a, 2018b) and others. It is based on the increase in imports in real Pound Sterling *per worker* in industry *j*. The formula is effectively a weighted average of these sectoral increases in imports per worker with the weights being sectoral employment shares:

⁸ The fact that the EU support measure was included in irregular intervals poses additional challenges. First, we expect less persistence of the dependent variable between 2002 and 2006 than between 1999 and 2002 because of the longer time span between the two measurements. To model this, we thus additionally included interactions between the lagged dependent variable and the year dummies, allowing ρ to take different values. Second, we took great care to compute the Chinese import shock such that it exactly corresponds to the time structure of our observations on political attitudes, as explained below.

(2)
$$CS_{r,t,increase \ per \ worker} = \sum_{j=1}^{J} \omega_{jr,t-x} \left(\frac{IM_{j,t} - IM_{j,t-x}}{L_{j,t-x}} \right)$$

with *r* indicating regions, *j* industries, and *t* standing for a given year. $IM_{j,t}$ is the real (i.e. nominal value deflated by the Consumer Price Index, with 1995 used as base year) value of UK imports in Pound Sterling from China in industry *j*. Equation (2) computes the difference between imports in year *t* and the base year *t*-*x*. This difference is divided by the total (i.e. countrywide) number of workers in industry *j* in the base year *t*-*x* ($L_{j,t-x}$). The increase in imports per worker is then weighted using $\omega_{jr,t-x}$, i.e. the share of employment for an industry in a region in the base year *t*-*x*. More specifically, it is defined as $\omega_{jr,t-x} = \frac{L_{jr,t-x}}{L_{r,t-x}}$, i.e. as a ratio that divides the number of workers in region *r* and industry *j* at time *t*-*x* by the total number of workers in region *r* in that period.

In addition, we propose a second measure based on *growth rates* of Chinese imports by sector that is otherwise identical to equation (2):

(3)
$$CS_{r,t,growt rate} = \sum_{j=1}^{J} \omega_{jr,t-x} \left(\frac{IM_{j,t} - IM_{j,t-x}}{IM_{j,t-x}} \right) * 100$$

Equation (3) measures the growth in imports as the percentage change of imports from China in industry *j* between year *t-x* and year *t*. There are three main reasons for using this additional measure. The first general reason is that we aim to explore how robust the results are to different versions of calculating regional exposure to increasing imports from China. Second, we suspect that growth rates might capture an important element of the processes underlying the attitudinal response to import shocks better than increases per worker: By definition, growth rates are high if the increase in imports is high relative to the level of imports in the base year *t-x*. They will thus take high values if industries which faced little import competition in the past experience surging imports. In these situations, import competition is especially likely to be perceived as a growing threat for an industry and, hence, likely to trigger an attitudinal response—perhaps

more so than when imports per worker increase substantially, but were already high to begin with. Third, another advantage of the growth rate measure is that they account for industries' "initial labor market relevance", as we explain in the appendix (see appendix section: *A.1 Accounting for "labor market relevance" when computing the China shock*).

For both measures, we computed the China shock measure, such that it corresponds to the time structure of our survey data, with *t-x* being the year in which the lagged dependent variable is measured. For instance, if we predict nationalist sentiment in 2008 by its prior lagged value in 2005, *t* is 2008, *t-x* is 2005 and *x* is 3. This way we explain the change in an attitude over a specific time period with the change in exposure to Chinese imports over the same time period and based on the employment shares at the beginning of this time period. We believe that this approach allows identifying the effects of interest in a clean and conservative way.⁹

Our regional units are NUTS 3 regions in Great Britain according to the 2006 NUTS revision. Due to lacking regional employment data, Northern Ireland could not be included. There are 128 of such NUTS 3 regions, of which more than 120 are usually observed in our models. The data on regional employment shares are from NOMIS (see https://www.nomisweb.co.uk/), the data on regional employment shares are from NOMIS (see https://www.nomisweb.co.uk/), the database on UK labor market statistics of the Office for National Statistics (ONS). NOMIS provides data of the total number of workers (full-time & part-time) per industry (according to SIC 2003) for NUTS 3 regions in the 2003 revision for the years 1998 to 2008. We converted this information to the 2006 NUTS 3 revision.¹⁰ To assign individuals in the BHPS to 2006 NUTS 3 regions, we rely on a (special license) variable on the local authority districts (LADs)

⁹ In a series of robustness checks, we use the — in our view: less appropriate — alternatives that (a) always use employment shares from the base year 1998 or (b) compute changes in imports always relative to 1998.

¹⁰ Note that it is not possible to cleanly convert the regional employment data to more recent NUTS revisions given that some of the NUTS 3 regions were split after the 2006 revision. It is thus best to keep the NUTS 3 regional data in the structure of the 2006 revision.

that households are situated in.¹¹ With rare exceptions, it is unequivocal to assign LADs to 2006 NUTS 3 regions, as the NUTS 3 regions represent a higher level of aggregation and do not cut through LADs.¹²

We obtained data on imports from China by industry from the OECD STAN database (see <u>http://www.oecd.org/sti/ind/stanstructuralanalysisdatabase.htm</u>). This source contains imports by industry according to ISIC revision 3. We transformed this information to SIC 2003 (which conforms to ISIC revision 3.1) distinguishing between 21 industries in the primary and secondary sectors.¹³ Using correspondingly harmonized industry classifications for the regional employment shares, we computed the "China shock" according to equations (2) and (3).¹⁴

3.4 Control variables at the individual level

We selected control variables at the individual level that might influence the nationalist attitudes of interest and are plausibly pre-treatment, i.e. not itself affected by the import shock. We include gender, age (and age squared), education and migration background. Education measures as categories the highest formal qualification obtained, distinguishing between no qualification (used as baseline category), other qualification, GCSE or equivalent, A-level or equivalent, other higher degree, and university degree. We include three dummy variables

¹¹ This assignment of household addresses to LADs is based on the November 2013 version of the ONS Postcode Directory.

¹² Specifically, we used a lookup file from the ONS to assign LADs (as at 31 December 2013) to 2015 NUTS 3 regions (see: https://geoportal.statistics.gov.uk/datasets/local-authority-district-december-2013-to-nuts3-to-nuts2to-nuts1-january-2015-lookup-in-the-uk). Using correspondence tables from Eurostat (see: https://ec.europa.eu/eurostat/web/nuts/history), we then moved backward to convert 2015 NUTS 3 regions to 2010 NUTS 3 regions and then 2010 NUTS 3 regions to 2006 NUTS 3 regions. We lost only few observations along the way. Specifically, three LADs in the (North-)West of Scotland-"Highlands", "North Ayrshire" and "Argyll and Bute"—that cut through NUTS 3 boundaries could not be assigned to a 2015-NUTS 3 region in the first place. ¹³ We list these sectoral classifications in section A.2 Industry classification (SIC 2003) used for computing the *China shock* of the appendix. In the appendix, we also present data on the import shocks at the level of sectors. That is, we show increases in Chinese imports per worker and growth rates of Chinese imports by sector over time, both calculated over the last three years (see appendix sections: A.3 Sectoral increases in Chinese imports per worker (in real British Pounds) and A.4 Sectoral growth rates of Chinese imports (in percent)).

¹⁴ We excluded information for "E-Q other activities" when applying equations (2) and (3). For the measure based on increases per worker (equation 2), it makes little difference whether we include or exclude "E-Q other activities". Given the high value of the denominator, i.e. the number of workers in "E-Q other activities", imports per worker are negligible. Yet, growth rates for "E-Q other activities" are non-negligible. Given the exceptionally high corresponding regional employment shares, they would otherwise dominate our growth rate measure (equation 3) and introduce a lot of noise.

related to migration background that measure (a) whether an individual was born outside of the UK and whether (b) one parent or (c) both of her or his parents were born outside of the UK.

3.5 Control variables at the regional level

Our strategy to deal with confounders at the regional level consists of including both fixed effects and substantive control variables. As an alternative to the year fixed effects of equation (1), we include fixed effects at the level of NUTS 1 region-year and NUTS 2 region-year combinations. These are strong robustness checks that gauge whether the coefficients for the China shocks are robust to controlling for common developments that affect all NUTS 3 regions within a NUTS 1 or NUTS 2 region, in a given year. In other words, these models identify the effects only from variation across NUTS 3 region-years *within* NUTS 1 region-years or NUTS 2 region-years.¹⁵

In addition, we add substantive controls at regional levels in some of our models. We control for the employment share of manufacturing in 1998 (as reported by NOMIS), measured at the level of NUTS 3 regions. The manufacturing employment share is a tough control as it is highly correlated with the China shock. Obviously, increasing imports mainly affect manufacturing. Nonetheless, we try to disentangle the specific impact of the China shock from developments common to regions with a traditional industry structure concentrated in manufacturing. We keep the value fixed at the value from 1998 to avoid post-treatment bias, as changes in the manufacturing share over our observation period might be driven by rising imports from China.

¹⁵ For reasons of consistency, we also use the *2006* NUTS revision for distinguishing NUTS 2 regions. NUTS 1 regions are identical in the 2006 revision and in more recent ones. Excluding Northern Ireland, there are 11 NUTS 1 regions and (in the 2006 revision) 34 NUTS 2 regions. The number of NUTS 3 regions per NUTS 1 region varies between 5 (London) and 20 (Scotland). The number of NUTS 3 regions per NUTS 2 region varies between 1 and 8. In the three cases were this number is one, the NUTS 3 regions do not contribute to our estimate of interest with NUTS 2-year fixed effects included as they are fully accounted for by these fixed effects. The rather low numbers of NUTS 3 regions per NUTS 2 region underscore that including NUTS 2-year fixed effects amounts to a strong test.

We also consider the share of the population born outside of the UK (in addition to including migration background at the individual level). We include this variable both in levels and as changes (in percentage points) between *t-x* and *t*. We compiled and merged these data at the level of Local Area Districts (LADs).¹⁶ This introduces another layer to the data structure. Accordingly, we add random intercepts at the level of LADs-years to the respective multilevel model. Our specification thus amounts to a hierarchical model with individual-years (level 1) nested in LADs-years (level 2), LADs-years nested in NUTS 3 region-years (level 3), and NUTS 3 region-years nested in NUTS 3 regions (level 4).

Finally, to explore potential mediators of the impact of the China shock via regional economic activity we collected estimates of local unemployment rates and regional gross valued added per head, both also measured at the LAD-year level.¹⁷

¹⁶ Recall that our dataset measures the China shock at the level of NUTS 3 regions according to the 2006 revision, which results from the structure of the available data on employment shares (see above). This makes it difficult to obtain and enter controls at the exact same regional level as the employment shares. Given that we have information on residency in LADs it is, however, straightforward, to merge data at this regional level. We obtained estimates for shares of the population born outside the UK in England and Wales based on the Annual Population Survey (from https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/datasets/populationoftheunitedkingdombycountryofbirthandnationality). These data start in 2000 only, which means that the change in percentage points in 2002 only refers to changes from 2000 (not 1999) to 2002. This data source does not provide data for Scottish LADs. For Scotland, we took estimates from the Scottish Census (see https://www.scotlandscensus.gov.uk/census-results) available for 1991, 2001 and 2011 and linearly interpolated values in between. We observe 405 LADs in our merged dataset.

¹⁷ Data on regional unemployment are from: <u>https://www.ons.gov.uk/employmentandlabourmarket/</u><u>peoplenotinwork/unemployment/datasets/modelledunemploymentforlocalandunitaryauthoritiesm01/current</u>. We computed the change (in percentage points) in the unemployment rate between the base year *t-x* and *t*. Data on regional gross valued were taken from: <u>https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/</u><u>regionalgrossvalueaddedbalancedbylocalauthorityintheuk</u>. We computed the difference in gross value added between the base year *t-x* and *t*, and logged this value to account for its skewed distribution. Specifically, we used the "neglog" transformation (Whittaker et al. 2005) and normalized the resulting values to range from zero to one to ease interpretability.

4. Results

Before turning to our main results, we, first, provide descriptive results on the China shock and on changes in the attitudinal variables of interest (section 4.1) and, second, report the results of estimations investigating the impact of the China shock on wages (section 4.2). Third, we present our main findings on the effect of the China shock on nationalist attitudes (section 4.3). Finally, we discuss robustness checks and extensions (section 4.4).

4.1 Descriptive results

To illustrate the geographical pattern of regional differences in exposure to growing imports from China, *Figure 1* shows a map of the China shocks. For this purpose, we focus on a long-run measure that calculates equations (2) and (3) with t=2008 and t-x=1999. These are the end and starting points, respectively, for the observations of nationalist sentiment and support for international cooperation in the BHPS. While the figure on the left-hand side is based on the *increase per worker*-measure of the China shock, the figure on the right-hand side is based on the *growth rate* measure. Both maps reveal roughly similar patterns. For example, we observe large shocks in regions in the Midlands and low values for London regions.¹⁸ There are, at the same time, noticeable differences between the two measures, with, e.g., the increase per worker measure less so. It is also important to recognize the substantial variation across NUTS 3 regions even within broader regions apparent for both measures. Such variation may allow us to obtain efficient estimates of the China shock from models including NUTS 1 and even NUTS 2 region-year fixed effects.

¹⁸ Both measures indicate the smallest shocks for "Inner London – West" (increase per worker: 10.8; growth rate: 111.3). The largest shocks are observed for "West Lothian", located in Central Scotland between Glasgow and Edinburgh, in case of the increase per worker (2151.4), and for "Solihull" in the West Midlands in case of the growth rate (303.7).



Figure 1: Chinese import shocks for NUTS 3 regions in 2008 with 1999 as base year

Figure 2: Chinese import shocks in NUTS 3 regions, increase per worker vs. growth rate



Raw measures

Note: Linear fit lines added to scatterplots. Pearson correlation coefficient (r) listed below plots.

In *Figure 2*, we show scatterplots that compare both measures of the import shocks, this time looking at the data we actually use for the panel data analysis of nationalist sentiment and support for international cooperation: We present data for 2002 with 1999 as base year, for 2005 with 2002 as base year, and for 2008 with 2005 as base year. The upper panel, plotting the raw data, shows that both measures are correlated. Yet, we observe skewed distributions for both variables and heavy outliers that drive the correlation downwards. This is especially apparent for 2005.

To deal with these skewed distributions, we logged the original values. Specifically, we calculated:

(4)
$$CS_{r,t,m}^{log} = \ln(CS_{r,t,m} + 1),$$

with *m* representing either *increase per worker* or *growth rate*. The log transformation is crucial to address concerns that our results are driven, or distorted, by a few heavy outliers. We then normalized $CS_{r,t,m}^{log}$ to range from zero to one in the observed data, in order to make a rough interpretation and comparison of effect sizes more accessible.¹⁹ The lower panel displays these transformed measures. The association between the two measures is now notably higher, ranging from 0.59 for 2005 and 0.77 for 2008. These correlations are high enough such as to not result in dramatically different pictures of which NUTS 3 regions are heavily exposed to growing Chinese imports. Still, it could well make a difference for (some of) the regression results how exactly the import shock is measured—and it is sensible to test that.

As our analysis aims to identify the effect of the China shock from within-individual variation in nationalist attitudes over time, it is instrumental to check how much attitudinal change is

¹⁹ More generally, we use the "neglog" transformation (Whittaker et al. 2005) to transform all trade shock measures, including the ones used in robustness checks reported below, which sometimes contain negative values. The "neglog" transformation is meant to handle skewed data with both positive and negative values. It is defined as $-\ln(-x+1)$ if x<=0 and as $\ln(x+1)$ if x>0. Because the main measures of the China shock contain only positive values, the "neglog" transformation simplifies to equation (4). We also normalized all additional trade shocks to range from zero to one.

observed in the data. We thus computed the difference in our three dependent variables for all two subsequent observations. *Figure 3* plots the distributions of these first differences. The figure reveals much stability in the political attitudes of interest. Yet, we do observe a reasonable amount of change that we leverage below.



Figure 3: Histograms with change in nationalist attitudes over time

4.2 The effect of the China shock on wages

In this section, we report the results of regressing individual income on regional exposure to Chinese import competition. We are interested in the income effects for substantive reasons, yet also use this exercise as a check on the validity of our identification strategy and model specification. We thus adopt equation (1) and the same time structure as for our models on nationalist sentiment and support for international cooperation, i.e. we predict income in 2002, 2005 and 2008, using lagged income from 1999, 2002 and 2005 and from the China shock computed with x = 3. Individual income is measured via a variable that records "usual net pay per month in current job" in British Pounds. The results are displayed in section *A.5 Regressions for monthly net pay* of the appendix.

For the increase per worker measure, we obtain substantially and statistically significant negative coefficients across all model specifications. The effect is weaker once we include NUTS 1 region-year fixed effects, but it is still statistically significant with p<0.10. Importantly, the effect remains similar in magnitude when we exclude individuals employed in the primary

and secondary sectors. This suggests that those employed in the tertiary sector, who are largely shielded from the direct effects of import competition, are still indirectly affected via general equilibrium effects on local economic activity.

Because shocks to regional economic activity may affect which goods are imported to the UK, regressing income on the import shocks raises an endogeneity concern. We thus adopted the instrumental variable strategy proposed by Autor et al. (2013). Specifically, we replaced Chinese imports to the UK in equation (2) with the sum of Chinese imports to other advanced economies—namely the USA, France, Germany and Japan—to construct an instrument for $CS_{r,t,increase \ per \ worker}$. The two-stage-least-square (2SLS) regressions (with standard errors clustered at the level of NUTS 3 region-years) result in similar, even marginally stronger effects of the China shock on individuals' net wages.

The findings are a bit more mixed when we use the growth rate measure instead. The coefficients are always negative, as expected, and indicate economically meaningful effects. Yet, the estimates are too imprecise in some of the model specifications that include NUTS 1 region-year fixed effects to achieve statistical significance. Again, the results are stronger when using the instrument. Importantly, we do obtain a substantially and statistically significant negative effect from the 2SLS regressions when excluding individuals employed in the primary and secondary sectors.

Overall, these results support the notion that Chinese import competition affected regional variation in wage development and did so even for service workers who were only indirectly affected by the impact of the China shock on the local economy. Previous studies have established such negative effects of import competition on local wages using aggregate data at the regional level (Autor et al. 2003). The fact that we are able to replicate such effects in an analysis of individual-level panel data confirms our confidence in the general viability of our identification strategy and specification. The findings are a bit more consistent for the increase

per worker measure than for the growth rate measure (though the estimated effects are not necessarily larger). This may indicate that the former is better suited to capture economic effects of exposure to import competition. It does not necessarily imply, however, that the same is true for the attitudinal response to the China shock. With these insights in mind, we turn to the main results on the effects of the China shock on nationalist attitudes.

4.3 Main results on the effects of the China shock on nationalist attitudes

We begin with a scatterplot that visualizes the association between estimated changes in attitudes for NUTS 3 regions-years and the China shock. These scatterplots in *Figure 4* also illustrate how the multilevel model works. To construct this figure, we estimated a slightly simplified version of equation (1): We estimated multilevel models with observations nested in NUTS 3 region-years, controlling for the lagged dependent variable, demographic variables and year fixed effects, but not the China shock. We then saved the estimated random intercepts from these regressions. These "region effects" can be interpreted as estimates of how living in the different NUTS 3 region-years affects (changes in) individual attitudes. *Figure 4* plots these random intercepts against the two versions of the China shock.

The substantial standard errors around the point estimates for the random intercepts underscore the uncertainty inherent in drawing inferences on regional-level effects from individual-level survey data. Nonetheless, the scatterplots still largely support the nationalist backlash thesis. Higher China shocks tend to be associated with positive region effects on nationalist sentiment and negative region effects on support for international cooperation and EU membership, as expected. Apart from the increase per worker measure and support for international cooperation, all correlations at least border on conventional levels of statistical significance. While this two-step procedure shows how the expected patterns emerge from the data, it is statistically more efficient to directly include the China shock in the multilevel models.





Note: Shown are estimated random intercepts (with error bars +/- one standard error) from multilevel models with observations nested in NUT3-years, controlling for the lagged dependent variable, demographic variables (gender, age, age², education, migration background) and year fixed effects. Pearson correlation (r) between estimated random intercepts and exposure to increasing Chinese imports displayed on top of each graph.

We present our main regression results that do so in three tables.²⁰ *Table 2* studies nationalist sentiment, *Table 3* support for international cooperation and *Table 4* support for EU membership. In each case, we report results for both versions of measuring the China shock across six types of model specifications. The first three models do not yet contain substantive controls at the regional level, but different types of fixed effects: The first model contains year fixed effects, the second NUTS 1 region-year fixed effects and the third NUTS 2 region-year fixed effects. The fourth model adds the 1998 manufacturing employment share to the specification with NUTS 1 region-year fixed effects. The fifth model further adds the level of the share of the population born outside of the UK and its percentage point change. The sixth model estimates this model with NUTS 2 region-year fixed effects.

For nationalist sentiment we consistently obtain statistically significant positive effects for both measures of the China shock across model specifications, in line with our expectations (see *Table 2*). The coefficients tend to get larger in more saturated models while the standard errors slightly increase. The effect sizes are roughly similar across the two measures, indicating that nationalist sentiment is predicted to be higher by around 0.2 when comparing individuals in a NUTS 3 region-year with a minimum shock (=0) to one with a maximum shock (=1). This is a substantially meaningful effect, also relative to the observed standard deviation of nationalist sentiment (=1.00) and of its first difference (=1.01).²¹ Overall, we obtain strong support for the expectation that feelings of uncritical attachment to one's nation increase in regions more heavily exposed to import competition.

²⁰ We present fuller versions of these tables in the appendix, including the coefficients for individual-level control variables (see appendix section: *A.6 Extended version of tables for main models*).

²¹ One should also bear in mind that, within the panel data set-up we consider, the China shock hits three times and not just once. The effects might thus cumulate over time, though the persistence of any shock is limited, as indicated by the coefficient for the lagged dependent variable (=0.45). If we compare one NUTS 3 region that is hit by a shock of 0.75 in the 1999-2002, 2002-2005 and 2005-2008 intervals with another region that is hit by a shock of 0.25 in these intervals, and if we use the estimated coefficient of 0.2, nationalist sentiment in 2008 is predicted to be higher by 0.17 (=0.5*0.2+0.45*(0.5*0.2)+0.45*(0.5*0.2)) for an individual living in the region with the larger shock than for an individual in the region with the smaller shock. However, we are reluctant to draw strong inferences on long-run dynamics, as the limited number of observed periods naturally limits our ability to do so with accuracy.

The findings regarding the effect of the China shock on support for international cooperation differ across the two measures (see **Table 3**). For the increase per worker-measure all estimated effects are statistically indistinguishable from zero. In case of the growth rate measure, however, the evidence overall supports the idea that a larger China shock decreases support for international cooperation among individuals living in the respective NUTS 3 region. The coefficient is not significant at conventional levels with NUTS 2 region-year fixed effects in the specification without regional level substantive control variables. However, when substantive control variables at the regional level are added, the effects are sizeable and statistically significant with p<0.10 for both models with NUTS 1 region-year fixed effects and models with NUTS 2 region-year fixed effects. The estimated effect sizes are in the area of - 0.2, indicating a meaningful effect, considering the observed standard deviation of support for international cooperation (=1.04) and of its first difference (=1.06).

For EU membership support, the findings for the two versions of the China shock measure again point in a similar direction (*Table 4*). There is strong and consistent evidence that support for EU membership decreases for individuals residing in NUTS 3 regions which were more heavily exposed to rising imports from China. While one out of the twelve coefficients is not significant at accepted levels of statistical significance (see model 12 in *Table 4*), this appears to be just a result of the loss in precision caused by the inclusion of NUTS 2 region-year fixed effects and regional substantive controls. The coefficients indicate negative effects of, again, roughly around -0.2 for both measures. Relative to the observed standard deviation of support for EU membership (=1.00) and of its first difference (=0.84), the estimates point to substantially meaningful effect sizes.

		Increa	se in real ir	nports per v	vorker				Growth rat	e of real im	ports	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Nationalist sentiment _{t-3}	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)	0.45^{***} (0.0058)
Chinese import shock	0.092*	0.12**	0.12**	0.17*	0.17*	0.17*	0.12*	0.20**	0.19*	0.22*	0.23*	0.26+
Manufacturing share ₁₉₉₈	(0.042)	(0.044)	(0.043)	(0.074) -0.14 (0.17)	(0.079) -0.096 (0.18)	(0.076) -0.083 (0.17)	(0.062)	(0.069)	(0.075)	(0.100) -0.052 (0.14)	(0.10) -0.017 (0.15)	(0.14) -0.043 (0.19)
Foreign born population					0.25	0.37*					0.30^{+}	0.35*
Change in foreign born population					(0.16) 0.035 (0.41)	(0.18) -0.23 (0.41)					(0.15) -0.061 (0.40)	(0.18) -0.24 (0.41)
Demographic controls	\checkmark	\checkmark	\checkmark	\checkmark	$\overline{\mathbf{V}}$	$\overline{\mathbf{V}}$	\checkmark	\checkmark	\checkmark	\checkmark	(UTIC)	\checkmark
Fixed effects												
Year	\checkmark						\checkmark					
NUTS 1-Year		\checkmark	_	\checkmark	\checkmark	_		\checkmark	_	\checkmark	\checkmark	_
NUTS 2-Year			\checkmark			\checkmark			\checkmark			
Random intercepts	_	_	_	_	_	_	_	_	_	_	_	_
NUTS 3										\checkmark		
NUTS 3-year level	\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
LAD-year level					\checkmark	\checkmark					\checkmark	
Observations												
NUTS 3	123	123	123	123	123	123	123	123	123	123	123	123
NUTS 3-year	366	366	366	366	366	366	366	366	366	366	366	366
LAD-year					1039	1039					1039	1039
Individual-year	24726	24726	24726	24726	24726	24726	24726	24726	24726	24726	24726	24726
BIC	62472.8	62750.2	63406.3	62759.6	63018.8	63442.1	62473.6	62750.2	63407.7	62760.2	62784.1	63444.0

Table 2: Regressing nationalist sentiment on local Chinese import shock

Note: Results from linear multilevel models. Standard errors in parentheses. Significance levels: $^+p < 0.10$, $^*p < 0.05$, $^{**}p < 0.01$, $^{**}p < 0.001$.

Table 3:	Regressing	support for	[.] international	cooperation of	n local	Chinese im	port shock
I UDIC CI	Tree coome	Supportion	inter national	cooperation of	i iocai	Chinese hin	por e snoen

		Increa	se in real ir	nports per v	worker			Gi	rowth rate c	of real impo	rts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Support for international cooperation _{t-3}	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***}	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***} (0.0055)	0.45^{***} (0.0055)
Chinese import shock	-0.040	-0.011 (0.053)	-0.028 (0.047)	0.018 (0.087)	(0.023) (0.087)	-0.048 (0.085)	-0.19^{*}	-0.15^+	-0.11	-0.23^{*}	-0.21^+ (0.12)	-0.29^+ (0.16)
Manufacturing share ₁₉₉₈	(0.000)	(0.000)	(0.017)	-0.086	-0.059 (0.20)	0.11 (0.20)	(0.070)	(0.002)	(0.001)	0.18 (0.17)	(0.12) (0.19) (0.17)	(0.10) 0.33 (0.21)
Foreign born population				(0.20)	0.14	0.16				(0.17)	(0.17) (0.11)	0.13
Change in foreign born population					(0.17) -0.094 (0.43)	(0.15) -0.15 (0.44)					(0.17) -0.055 (0.43)	(0.15) -0.14 (0.44)
Demographic controls	\checkmark	\checkmark	\checkmark	\checkmark	(0.4 <i>3)</i>	(0.44) I	\checkmark	\checkmark	\checkmark	\checkmark	(0.43)	(0.44) I
Fixed effects												-
Year	\checkmark						\checkmark					
NUTS 1-year		\checkmark		\checkmark	\checkmark			\checkmark		\checkmark	\checkmark	
NUTS 2-year			\checkmark			\checkmark			\checkmark			\checkmark
Random intercepts												
NUTS 3 level	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
NUTS 3-year level	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LAD-year level					\checkmark	\checkmark					\checkmark	\checkmark
Observations												
NUTS 3	123	123	123	123	123	123	123	123	123	123	123	123
NUTS 3-year	366	366	366	366	366	366	366	366	366	366	366	366
LAD-year					1040	1040					1040	1040
Individual-year	24546	24546	24546	24546	24546	24546	24546	24546	24546	24546	24546	24546
BIC	63520.5	63781.6	64430.9	63791.6	63805.9	64465.3	63515.1	63778.5	64429.6	63787.4	63802.7	64462.3

Note: Results from linear multilevel models. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p

Table 4: Regressing support for EU membership on local Chinese import shock

		Increas	se in real in	nports per v	worker			Gr	owth rate c	rate of real imports				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		
Support for EU membership _{t-3/4}	0.65 ^{***} (0.011)	0.65 ^{***} (0.011)	0.65^{***} (0.011)	0.65^{***} (0.011)	0.65 ^{***} (0.011)	0.65^{***} (0.011)	0.65 ^{***} (0.011)	0.65 ^{***} (0.011)	0.65 ^{***} (0.011)	0.65 ^{***} (0.011)	0.65^{***} (0.011)	0.65^{***} (0.011)		
Support for EU membership.t-3/4 * year=2006	-0.041**	-0.042**	-0.044**	-0.042**	-0.042**	-0.044**	-0.041**	-0.042^{**}	-0.043**	-0.042^{**}	-0.042**	-0.043**		
Chinese import shock	(0.013) -0.14 [*] (0.068)	(0.013) -0.16^{**} (0.060)	(0.013) -0.15^{**} (0.057)	(0.013) -0.21^{*} (0.098)	(0.013) -0.21^{*} (0.099)	(0.013) -0.25^{*} (0.098)	(0.013) -0.12 ⁺ (0.064)	(0.013) -0.17^{**} (0.066)	(0.013) -0.12 ⁺ (0.064)	(0.013) -0.24* (0.11)	(0.013) -0.24 [*] (0.11)	(0.013) -0.16 (0.13)		
Manufacturing employment share ₁₉₉₈				0.18 (0.24)	0.16 (0.24)	0.27				0.18 (0.24)	0.17 (0.24)	0.086		
Foreign born population				(0.2.)	0.069	0.042				(0.2.)	0.023	0.052		
Change in foreign born population					(0.23) -0.82 (0.56)	-0.57					-0.78	-0.58		
Demographic controls	\checkmark	\checkmark	\checkmark	\checkmark	(0.30)	(0.38) 🗹	\checkmark	\checkmark	\checkmark	\checkmark	(0.30)	(0.38)		
Fixed effects														
Year	\checkmark						\checkmark							
NUTS 1-year		\checkmark		\checkmark	\checkmark			\checkmark		\checkmark	\checkmark			
NUTS 2-year			\checkmark			\checkmark			\checkmark					
Random intercepts	_	_	_	_	_	_	_	_	_	_	_	_		
NUTS 3 level	\checkmark		\checkmark						\checkmark		\checkmark			
NUTS 3-year level	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		
LAD-year level					\checkmark	\checkmark					\checkmark	\checkmark		
Observations														
NUTS 3	122	122	122	122	122	122	122	122	122	122	122	122		
NUTS 3-year	240	240	240	240	240	240	240	240	240	240	240	240		
LAD-year					663	663					663	663		
Individual-year	9556	9556	9556	9556	9556	9556	9556	9556	9556	9556	9556	9556		
BIC	21483.1	21614.8	22004.9	21623.4	21646.8	22038.8	21483.8	21614.5	22008.6	21623.1	21646.2	22043.5		

Note: Results from linear multilevel models. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p < 0.01, p < 0.01.

Overall, we obtain broad support for the nationalist backlash thesis. The findings are especially clear for the growth rate measure. Across three different dependent variables, we find that individuals located in regions with stronger exposure to growing imports from China become more "nationalist" over time: Their nationalist sentiment increases and their support for both international cooperation in general, and EU membership specifically, decreases. For the increase per worker measure, we equally obtain strong evidence for increasing feelings of attachment to the nation and decreasing support for EU membership, yet no clear evidence for the expected negative effect on support for international cooperation.²²

4.4 Robustness and extensions

We extended our baseline analyses in several directions and report the results in this section. In the first subsection (4.4.1), we describe the results of several robustness checks. Second, we explore whether and how the impact of the China shock might be mediated by the state of the local economy (4.4.2). Third, we discuss the results from regression analyses in which we tested whether the marginal impact of the China shock might be dependent on individual characteristics (4.4.3). Fourth, we study whether the attitudinal response to the China shock goes beyond the nationalist backlash, wondering whether there is an effect on demand for compensation, i.e. whether it shifts *economic policy orientations* to the left (4.4.4).

4.4.1 Robustness of the nationalist backlash effect

We report the results of (most of) our robustness checks in a condensed format in *Table 5*, mostly listing only the coefficient for the import shock variable. To allow for a quick comparison, entry (1) reproduces the coefficients from models 2 and 8 of Tables 2 to 4, the

²² One potential reason why we obtain weaker evidence in case of international cooperation is methodological: We have to rely on agreement with a single—rather abstract—statement, while the two other outcome variables are factor scores built from more than one item. This may increase measurement error and limit our ability to accurately capture real change in the underlying latent attitudes over time. We investigated into this possibility as part of our robustness checks reported in the next section.

specification with NUTS 1 region-year fixed effects, which we used as baseline specification for the robustness checks. Entry (2) shows how these coefficients change when excluding all individuals with any recorded changes in residence in NUTS 3 region between *t* and *t-x*, thus limiting the analysis to those who constantly lived in the region during the time period for which the import shock was calculated. The coefficients remain stable, though the standard errors increase slightly—presumably due to the reduced number of observations. This causes the effect of the growth rate measure on support for international cooperation to fall below the p<0.10 significance threshold. All effects on nationalist sentiment and support for EU membership remain significant with p<0.05.

Entry (3) in *Table 5* excludes individuals working in the primary and secondary sectors. Entry (4) includes only individuals working in the tertiary sector and thus additionally excludes those who miss sector information because they do not work. Our results are similar, even in the face of the drastic sample reduction that comes with looking only at tertiary sector workers. For support for international cooperation, the negative effect then even becomes clearer and stronger. While we address effect heterogeneity in later extensions in a more encompassing way, this already goes to show that—like the effects on wages discussed above—the effects on nationalist attitudes are not limited to those who are, at least potentially, directly affected by import competition by way of working in one of the broad sectors exposed to trade in goods.

Entries (5) and (6) in *Table 5* consider how modifications to the China shock measures as described by equations (2) and (3) affect the results. Entry (5) uses a version of the China shock measure that uses employment shares from the initial year 1998 for all years (instead of shifting the base year for employment shares over time to *t*-*x* as in equations (2) and (3)).

	Natio	onalist	Suppo	ort for	Suppo	ort for
	senti	iment	interna	ational	E E	U
			coope	ration	memb	ership
	Incr. p.	Growth	Incr. p.	Growth	Incr. p.	Growth
	worker	rate	worker	rate	worker	rate
(1) Coefficient from baseline model	0.12**	0.20^{**}	-0.011	-0.15+	-0.16**	-0.17**
	(0.044)	(0.069)	(0.053)	(0.082)	(0.060)	(0.066)
(2) Excluding movers	0.12*	0.19^{**}	0.022	-0.11	-0.14*	-0.14*
	(0.046)	(0.072)	(0.057)	(0.086)	(0.063)	(0.069)
(3) Excl. primary and secondary sector workers	0.12*	0.19^{**}	0.0073	-0.10	-0.16**	-0.17**
	(0.046)	(0.072)	(0.054)	(0.084)	(0.061)	(0.067)
(4) Including only tertiary sector workers	0.095	0.16^{+}	-0.082	-0.26**	-0.25***	-0.20^{*}
	(0.058)	(0.092)	(0.060)	(0.096)	(0.075)	(0.083)
(5) Fixed employment shares from 1998	0.13*	0.12^{*}	0.0037	-0.066	-0.18**	-0.16*
	(0.053)	(0.061)	(0.059)	(0.066)	(0.067)	(0.064)
(6) Increase/growth relative to 1998	0.28*	0.23^{*}	-0.0032	-0.014	-0.38*	-0.26^{+}
	(0.12)	(0.089)	(0.13)	(0.11)	(0.15)	(0.14)
(7) Imports from China and other EMEs	0.14**	0.15^{*}	-0.048	-0.16*	-0.17**	-0.19*
	(0.048)	(0.071)	(0.054)	(0.077)	(0.063)	(0.081)
(8) Imports from other EMEs only	0.12	0.13^{+}	-0.055	-0.19*	-0.0058	-0.14^{+}
	(0.072)	(0.070)	(0.074)	(0.076)	(0.078)	(0.083)
(9) Additional control for incr. in all imports	**	**			**	
Coefficient for Chinese import exposure	0.12	0.23	-0.013	-0.21+	-0.17**	-0.12
	(0.044)	(0.083)	(0.054)	(0.11)	(0.060)	(0.091)
Coefficient for general import exposure	-0.011	-0.070	-0.025	-0.068	-0.18	-0.077
	(0.060)	(0.089)	(0.068)	(0.11)	(0.091)	(0.097)
(10) Additional control for incr. exports to						
China	0.12*	0.00*	0.010	0.20*	0.1.6*	0.10*
Coefficient for Chinese import exposure	0.13	0.20	-0.010	-0.20	-0.16	-0.19
	(0.049)	(0.086)	(0.054)	(0.097)		(0.085)
Coefficient for Chinese export exposure	0.025	-0.019	-0.0013	0.11	0.00066	0.056
	(0.057)	(0.10)	(0.057)	(0.11)	(0.059)	(0.14)
(11) Chinese imports in other adv. economies	0.39	0.19	-0.0/2	-0.10	-0.16	-0.13
(instrument, reduced form)	(0.15)	(0.073)	(0.18)	(0.082)	(0.067)	(0.074)
(12) Predicted value from instrument	0.12	0.27	-0.023	-0.15	-0.14	-0.12
(1 st stage: bivariate OLS)	(0.049)	(0.11)	(0.059)	(0.12)	(0.059)	(0.066)
(13) Instrumental variables regression (2SLS)	0.11	0.23	-0.032	-0.11	-0.14	-0.12*
	(0.048)	(0.094)	(0.058)	(0.10)	(0.058)	(0.073)
(14) Additional control for economic mediators	0.002	0.1.4+	0.016	0.00*	0.1.(*	0.17*
Coefficient for Chinese import exposure	0.082	0.14^{+}	0.016	-0.22	-0.16	-0.17
	(0.050)	(0.075)	(0.060)	(0.11)	(0.076)	(0.077)
Change in manufacturing employment share	-0.73	-0.82	0.37	0.22	0.13	0.21
	(0.55)	(0.51)	(0.58)	(0.57)	(0.67)	(0.64)
Change in gross value added per head	0.18	0.18	0.21	0.20	-0.38	-0.32
	(0.15)	(0.15)	(0.16)	(0.16)	(0.30)	(0.29)
Change in unemployment rate	0.59	0.60	-0.57	-0.51	-0.34	-0.27
	(0.90)	(0.90)	(0.96)	(0.95)	(1.12)	(1.12)

Table 5: Results from robustness checks and extensions

Note: Results for coefficients for main variables of interest in linear multilevel models (with random intercepts at NUTS 3 level and NUTS 3-year level) with NUTS 1-year fixed effects in entries (1) to (10) and (12). Coefficient in entry (11) is from a 2SLS regression estimated by Stata-ado "ivreg2" with standard errors clustered at NUTS 3-year level. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p < 0.01, p < 0.01.

The measure used in entry (6) additionally calculates the increase in imports or its growth rate,

respectively, as compared to 1998 for all years (and not relative to *t-x*). We believe that it is

more adequate to use the versions as described by equations (2) and (3), because they are closer to what happens in the regions in the period of interest. Nonetheless, the effects on nationalist sentiment and support for EU membership are robust to using these modified measures, only the negative effect of the growth rate measure on support for international cooperation is no longer statistically significant.

Next, we varied the source countries used for calculating the import shock. The measure employed in entry (7) in Table 5 utilizes the sum of imports from China and five other emerging market economies (EMEs) (India, Malaysia, Turkey, Poland and the Czech Republic). The results are robust to using this measure—if anything, they are marginally stronger than when looking at Chinese imports only. The measure included in entry (8) considers imports from the five other EMEs only. The signs of the coefficients are all preserved, and for the growth rate measure all three coefficients are statistically significant. Interestingly, we now observe the most pronounced effect on support for international cooperation, which strengthens this particular result. These two sets of findings suggest that the effects observed in the main models are not specific to Chinese imports, but rather seem to reflect a general reaction to low-cost import competition. In contrast, we do not find consistent effects of a measure that considers all imports into the UK, whereas the effects of the China shock are largely robust to including this covariate (see entry (9)). The latter also holds when additionally including a measure that calculates equations (2) and (3) with respect to UK exports to China (see entry (10)). Theoretically, some regions might profit from increased exports to China, but such "winner" effects seem of rather limited relevance as compared to "loser" effects from low-cost import competition. The absence of any statistically significant effects of the export measure confirms this expectation.

In entries (11) to (13) of **Table 5** we draw on an instrument that replaces Chinese imports to the UK in equations (2) and (3) with the sum of Chinese imports to other advanced economies

(USA, France, Germany and Japan) following the strategy proposed by Autor et al. (2013). Entry (11) directly plugs this measure into our multilevel regressions. Entry (12) instead draws on predicted values (from a simple bivariate regression) for the China shock from these instruments. Entry (13) reports results from a proper 2SLS instrumental variables regression with standard errors clustered at the level of NUTS 3 region-years. The coefficient for the effect of the growth rate measure on support for international cooperation remains largely similar in magnitude as compared to the baseline model, but is estimated with less precision and therefore no longer statistically significant. The effects on nationalist sentiment and support for EU membership are all statistically significant in these regressions.

Further robustness checks showing that our results are not driven by how specifically we measure the dependent variables are reported in section *A.7 Additional robustness checks for the nationalist backlash effect* of the appendix. *Table A 5* makes use of the individual items (rather than the factor scores) for a set of ordered logit multilevel regressions. The individual coefficients are all in the expected direction and statistically significant for at least some of the constituent items.²³ In *Table A 6* we vary the items we condense into a measure of nationalist attitudes via factor analysis. We lump the two items on nationalist sentiment and the one on support for international cooperation together and we add two further items included in the "national identity" module of the BHPS in different combinations. We obtain statistically significant positive effects on all four new factors for both measures of the China shock. The conclusion that the China shock increases nationalist attitudes in affected regions thus does not hinge on exactly how such attitudes are measured.

²³ In case of nationalist sentiment, we obtain significant positive effects for the item on whether people would be too ready to criticize their country for both measures of the China shock. For EU membership support, we obtain significant and strong negative effects for the two questions recording evaluations of Britain's EU membership, again for both measures of the China shock.

To sum up, the overall claim that local exposure to (Chinese) import competition causes a nationalist backlash in political attitudes is robustly supported by these analyses. One might debate whether the findings on support for international cooperation alone are sufficiently robust, yet it is worth emphasizing that we find largely similar and robust effects across three different dependent variables that are all connected to the nationalist backlash thesis. We believe that the findings back up each other. It is also worth re-iterating that our results largely hold robustly for two versions of the import shock measure. Nonetheless, there are some indications of the growth rate measure showing more consistent effects in contrast to the increase per worker measure, it results in evidence of a negative effect on support for international cooperation as well, and it shows much clearer effects when looking at imports from other EMEs. While we cannot be entirely sure about this, the stronger influence of the growth-rate based China shock may reflect this measure's ability to better capture instances in which import competition is perceived as a growing threat, as argued above.

4.4.2 Mediation of the nationalist backlash effect

In the last entry of *Table 5* (entry 14), we report results from models that additionally control for indicators of changes in local economic activity. The goal is to explore a possible mediation sequence in which the China shock affects the state of the regional economy, and the regional economy then affects nationalist attitudes. To this end, we added the following regional-level variables to the model: the (percentage point) change in the manufacturing employment share, the (percentage point) change in the local unemployment rate and the logged difference in gross value added per head (all between *t* and *t-x*). As we might not have enough statistical power to reliably detect mediation effects, we need to interpret the detailed results of these models cautiously.

Nonetheless, we can draw one negative conclusion with high certainty: The findings do not suggest that the effect of the China shock is *fully* mediated by its impact on the local economy.

None of the potential mediators is statistically significant. The coefficients of the China shock measures become smaller only with regard to nationalist sentiment, whereas the other coefficients do not. There may be hints that point to possible *partial* mediation. For example, the coefficient for the change in the manufacturing employment share suggests that when the manufacturing employment shares falls (possibly due to the China shock²⁴), nationalist sentiment goes up and support for international cooperation goes down, as does support for EU membership. A similar pattern emerges for the change in the unemployment rate. Yet, none of this is statistically reliable.

It appears that declines in local economic activity as such do not seem to trigger a strong nationalist backlash, yet local exposure to import competition does. The nationalist backlash is thus not a mere reaction to changes in local economic activity, be they caused by import competition or other phenomena. It seems to matter what the source of threats for local economic activity is; (only) when it is import competition, this seems to result in a nationalist backlash.

4.4.3 Individual heterogeneity in the nationalist backlash effect

Next, we investigated whether the marginal effect of the China shock depends on individual attributes. Such heterogeneity may arise as some individuals feel the impact of the China shock more strongly than others. First, it could be that those who are active in the labor force react more strongly to the China shock than those who are currently not in the labor force. Second, one might suspect that individuals working in manufacturing, and perhaps those working in the primary sector as well, are more directly affected and therefore react more strongly to local exposure to import competition than service workers. Third, one might expect that the low-skilled react more strongly as their labor market prospects are more directly

 $^{^{24}}$ Note that there is a negative association between the China shock and the change in the manufacturing share. For d=3 and computed at the NUTS3-level, the correlation is -0.28 for the change per worker measure and -0.47 for the growth rate measure.

affected by the effects of low-cost import competition compared to individuals with higher skill levels. While all these expectations may seem plausible at first sight, they are in tension with the idea of a genuinely socio-tropic reaction: If individuals' reactions are shaped by the consequences of import competition for the local economy, we may see little such heterogeneity.

To explore what is the case, we estimated a set of multilevel regressions with (cross-level) interactions between the China shock and three individual-level moderators: Current labor market status, sector of employment, and education. The results are shown as conditional effect plots in section *A.8 Individual heterogeneity in the nationalist backlash effect* of the appendix. The first general observation to note is that the estimates of the conditional effects are often very noisy, especially when conditional effects for smaller groups are concerned (such as the unemployed or those working in the primary sector). This limits our ability to draw strong inferences on how effects differ across groups, as the confidence intervals often overlap substantially. Yet we can draw one key negative conclusion with reasonable certainty: There is, overall, little evidence that the strength of the effect of the China shock varies along the lines suggested above.

The strongest hints towards effect heterogeneity in the expected direction are obtained for current labor force status: The China shock indeed has the clearest effects among employees. Yet, the effects are not limited to employees, and some of the point estimates are even stronger within some of the inactive groups (such as the strong positive effect of the China shock on nationalist sentiment among students). Regarding sector of employment, we see that the China shock shows (most of) the expected effects among those working in manufacturing, but these conditional effects do not consistently stand out from the conditional effects for other groups. If any group stands out with respect to education, it is the high-skilled group of those with a tertiary degree rather than the low-skilled: Here we observe that all six coefficients run in the

expected direction and are rather precisely estimated—including statistically significant negative effects on support for international cooperation for both measures of the China shock.

4.4.4 Effects of the China shock on economic policy attitudes

While this contribution is primarily dedicated to the question whether import shocks cause a nationalist backlash in individual attitudes, this is not the only potential attitudinal consequence. One additional possibility worth investigating is an effect on demand for compensation. This idea builds on the logic behind the well-known compensation hypothesis: As globalization increases economic risks, it leads to demands for economic safeguarding in terms of government spending, which in turn results in a positive macro-level association between trade openness and the size of government (Cameron 1978; Rodrik 1998). Studies on the micro-level mechanism underlying the compensation hypothesis reveal that those individuals who are (negatively) exposed to international economic competition feel more economically insecure, demand stronger welfare state policies and, as a result, are more likely to vote for left-wing parties who advocate such policies (Walter 2010; Rommel and Walter 2017; Walter 2017). The same could be true for local exposure to import competition. Local import shocks may cause rising demands for redistribution to the economically disadvantaged, for risk insurance through welfare state policies, and for generally more state intervention in the economy. In short, individuals living in regions exposed to growing import competition may move to the left on economic policy.

The BHPS incorporates a set of questions in a "rotating core" on individuals' attitudes towards economic policy that allow us to test these conjectures. We focused on a similar time period as for the analysis of nationalist attitudes, analyzing data on economic policy orientations in 2004 and 2007, while controlling for their lagged values in 2000 and 2004, respectively. In section *A9. Effects of the China shock on economic policy attitudes* of the appendix, we present the results from a set of multilevel model estimations that follow equation (1). We

experimented with different ways of combining the six different items, collapsing them to broader (a factor from all six items; a factor from all four items that deal with economic policy in a more narrow sense) or narrower factor scores (a factor summarizing two items on economic injustice; a factor combining two items on state ownership), and also analyzed two of the single items separately (a statement on whether it's the government's responsibility to provide jobs; support for strong trade unions).

In none of the cases did we obtain an effect even close to conventional levels of statistical significance; all coefficients are close to zero. This clear nil finding regarding demand for compensation stands in stark contrast to the strong results we obtain for the nationalist backlash thesis. We believe that this is an important non-result. In combination with the strong support for the nationalist backlash thesis it helps to understand why previous studies have found that it is not left parties who profit from local exposure to import competition, but parties of the nationalist right (Colantone and Stanig 2018a; Dippel et al. 2015; Malgouyres 2017).

5. Discussion

This paper has addressed the question whether intensifying exposure to low-wage import competition at the regional level induces individuals to adopt an increasingly nationalist attitude. Answering this question is important for understanding the sources behind the antiglobalization backlash recently observed in Western democracies. While previous studies have provided evidence that exposure to import competition contributes to the success of nationalist parties, our study of the consequences of import shocks has studied political attitudes directly and should help us better understand why we observe these effects on voting behavior. To present clean evidence on this matter, we combined data on regional exposure to the surge in imports from China with panel data from the British Household Panel and focused on changes over time for identification. Our results are broadly supportive of the nationalist backlash thesis. To begin with, our findings corroborate the findings of Colantone and Stanig (2018b) on the Brexit referendum in that we find regional exposure to Chinese imports to be associated with growing opposition to EU membership. Importantly, we have provided evidence that this effect is not limited to attitudes towards the EU but extends to people's views on the trade-off between international cooperation and national independence more generally. At the same time, we observe an increase in nationalist sentiment in regions hurt by China's exports. These results are consistent and back each other up.

Our results are somewhat stronger when focusing on sectoral growth rates of Chinese imports rather than changes per worker, in particular regarding the effect on support for international cooperation. Yet, the effects on the other two outcomes are similar no matter which of the two shock measures we use. More generally, our results are stable across a range of demanding robustness checks. Taken together, the presented findings strongly support the nationalist backlash thesis. We thus conclude that the China shock has caused individuals' attitudes to shift into a nationalist direction—at least in the country and period we have studied.

In stark contrast, we obtained no evidence for a leftward shift in economic policy positions. This pattern of results helps us better understand why it is mostly not left parties who profit from attracting globalization losers, but parties of the nationalist right.

Our findings are thus in line with the central tenet of the theory of embedded liberalism that compensating globalization's losers might be necessary to sustain public support for an open world order based on multinational cooperation. At the same time, we do not necessarily observe that losers from international trade demand such compensation, they seem to rather turn against globalization itself.

One obvious limitation is that our results are from a single country. It is unclear how generalizable they are. There are reasons to expect relatively pronounced effects of import

competition in the British case. First, the British welfare state provides only limited compensation to globalization losers. As suggested by the theory of embedded liberalism (Ruggie 1982) and the compensation hypothesis (Cameron 1978; Rodrik 1998), in more generous welfare states—like the social-democratic welfare regimes in Scandinavian countries—effects of import competition might be muted as the welfare state dampens the economic distress caused by trade shocks. Second, the UK is a country with exceptionally diverse economic developments across regions. From this perspective, the UK constitutes one among the more likely cases for finding local trade shocks to cause a nationalist backlash. To investigate how our results might be sensitive to such context conditions, future work might extend this line of research to other countries.

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Appendix

A.1 Accounting for "labor market relevance" when computing the China shock

As explained in the main text, the "growth rate" measure of the "China shock" we use is given by

(A.1)
$$CS_{r,t,growt rate} = \sum_{j=1}^{J} \omega_{jr,t-x} \left(\frac{IM_{j,t}-IM_{j,t-x}}{IM_{j,t-x}} \right) * 100,$$

with *r* indicating regions, *j* industries, and *t* standing for a given year. $IM_{j,t}$ is the real (i.e. nominal value deflated by the Consumer Price Index, with 1995 used as base year) value in UK imports in Pound Sterling from China in industry *j*. The weights $\omega_{jr,t-x}$ denote the employment shares for an industry in a region in the base year *t*-*x*. More specifically, they are defined as $\omega_{jr,t-x} = \frac{L_{jr,t-x}}{L_{r,t-x}}$, i.e. as a ratio that divides the number of workers in region *r* and industry *j* at time *t*-*x* by the total number of workers in region *r* in that period. Conversely, the measure used by Autor et al. (2013) as well as Colantone and Stanig (2018a, 2018b) is defined as

(A.2)
$$CS_{r,t,increase\ per\ worker} = \sum_{j=1}^{J} \omega_{jr,t-x} \left(\frac{IM_{j,t}-IM_{j,t-x}}{L_{j,t-x}} \right) *100$$

where the change in imports is divided by the country-wide number of workers in industry *j* at *t*-*x*, $L_{j,t-x}$. We can link the two expressions by writing

(A.3)
$$CS_{r,t,growth \, rate} = \sum_{j=1}^{J} \omega_{jr,t-x} \, \boldsymbol{\varphi}_{j,t-x} \left(\frac{IM_{j,t}-IM_{j,t-x}}{L_{j,t-x}} \right) * 100,$$

with $\varphi_{j,t-x} \equiv \frac{L_{j,t-x}}{IM_{j,t-x}}$ reflecting the "*initial labor market relevance*" of industry *j* imports – i.e. the employment in industry *j* at time *t-x* relative to the value of imports in that industry at time *t-x*. We argue that augmenting the standard China shock variable by these weights is important, since this transformation gives a larger weight to those import-competing industries that employed a larger number of people in the initial time period. Compare imports of jewelry and imports of textiles: while $(IM_{jewelry,t} - IM_{jewelry,t-x})/L_{jewelry,t-x}$ may be high, its "labor market relevance" – i.e. the number of people employed relative to the monetary value of imports – is likely to be low. Conversely, $(IM_{textiles,t} - IM_{textiles,t-x})/L_{textiles,t-x}$ is likely to be low, due to large-scale initial employment in the textiles industry. This, however, makes it necessary to account for the "labor market relevance" of imports by pre-multiplying this expression with $\varphi_{textiles,t-x}$. Note, also, that it is the industries with high initial employment and low initial imports – i.e. large values of $\varphi_{j,t-x}$ – that are most likely to trigger the massive structural change that changes individuals' political attitudes.

Given these arguments, we decided to augment the (standard) *increases per worker*-based measure of the China shock by a *growth-rates*-based measure.

CODE	INDUSTRY
А	AGRICULTURE, HUNTING AND FORESTRY
В	FISHING
С	MINING AND QUARRYING
15+	Manufacture of food products and beverages;
16	manufacture of tobacco products
17+	Manufacture of textiles, wearing apparel;
18+	aressing and dycing of fur, tanning and dressing of featurer;
19	Manufacture of wood and products of wood and cork except furniture: manufacture of articles of straw
20	& plaiting materials
21+	
22	Manufacture of pulp, paper & paper products, publishing, printing & reproduction of recorded media
23	Manufacture of coke, refined petroleum products & nuclear fuel
	Manufacture of basic chemicals, manufacture of pesticides and other agro-chemical products;
	manufacture of paint, varnish & similar coatings, printing inks & mastics; manufacture of soap and
24	detergents, cleaning and polishing preparations, perfumes and toilet
25	Manufacture of rubber and plastic products
26	Manufacture of other non-metallic mineral products
27	Manufacture of basic metals
28	Manufacture of fabricated metal products, except machinery & equipment
29	Manufacture of machinery and equipment not elsewhere classified
30	Manufacture of office machinery and computers
31	Manufacture of electrical machinery & apparatus not elsewhere classified
32	Manufacture of radio, television, communication equipment & apparatus
33	Manufacture of medical, precision and optical instruments, watches and clocks
34	Manufacture of motor vehicles, trailers and semi-trailers
35	Manufacture of other transport equipment
36	Manufacture of furniture; manufacturing not elsewhere classified

A.2 Industry classification (SIC 2003) used for computing the China shock

A.3 Sectoral increases in Chinese imports per worker (in real British Pounds)

Figure A 1: Increase in imports per worker over last three years (common y-scale)



Figure A 2: Increase in imports per worker over last three years (separate y-scales)



Increase in real imports per (initially employed) worker over last three years by sector

A.4 Sectoral growth rates of Chinese imports (in percent)

Figure A 3: Growth rates in Chinese real imports over last three years (common yscale)



Figure A 4: Growth rates in Chinese real imports over last three years (separate yscales)



Growth in real imports from China over last three years by sector

year

A.5 Regressions for monthly net pay

Table A 1: Regressing monthly net pay on Chinese import shock

		Inci	ease in real ir	nports per wo	rker				Growth rate of	of real imports	3	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Nationalist sentiment _{t-3}	0.81***	0.81***	0.80^{***}	0.82^{***}	0.81^{***}	0.80^{***}	0.81***	0.81***	0.80^{***}	0.82^{***}	0.81^{***}	0.80^{***}
Chinese import shock	(0.0000) -128.5^{***} (30.3)	(0.0007) -49.3 ⁺ (29.1)	(0.0074) -56.0 ⁺ (32.6)	(0.000) -127.7*** (34.0)	(0.001) -62.3* (29.1)	-73.0* (33.6)	(0.0000) -164.2*** (43.9)	(0.0007) -24.2 (46.1)	(0.0074) -68.9 (52.1)	-357.1*** (81.6)	-85.4 (54.6)	(0.009) -136.5* (62.9)
Demographic controls	(30.3) ☑	(2).1)	(32.0) ☑	(34.0) I	(2).1)	(35.0) I	(45.5)	(40.1) ☑	(J2.1) I	(01.0) ☑	(J4.0) Ø	(02:)) ☑
<i>Fixed effects</i> Year	\checkmark			\checkmark								
NUTS 1-year		\checkmark	\checkmark		\checkmark	\checkmark		\checkmark	\checkmark		\checkmark	\checkmark
Model type Linear multilevel model	\checkmark	\checkmark	\checkmark	57			\checkmark	\checkmark	\checkmark			
2SLS with SEs clustered for NUTS 3-years			2	V	V	 √			1	V	V	
Observations			V			V			V			
NUTS 3-year	364	364	362	364	364	362	364	364	362	364	364	362
Individual-year	12378	12378	10190	12378	12378	10190	12378	12378	10190	12378	12378	10190
BIC	184969.8	185169.6	153100.0	185028.4	185151.3	153082.0	184973.6	185172.2	153101.2	185000.2	185155.8	153084.7

Note: Results from linear multilevel models and two-stage least square regressions. Linear multilevel models contain random intercepts at the level of NUTS 3 region-years. Instrument in twostage least square regressions is constructed from Chinese imports to other advanced economies (USA, France, Germany and Japan) and then transformed via the "neglog" transformation (Whittaker et al. 2005) and normalized to range from zero to one in the observed data. Instrumental variable regressions are estimated with standard errors robust to clustering of errors at NUTS 3-years. Demographic controls are gender, age, age squared, education, migration background (own and parents). Very high incomes above £ 7500 excluded from the estimation. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p < 0.001.

A.6 Extended version of tables for main models

	Table	A	2:	Regress	ing na	ntionalist	sentiment	on local	Chinese	import	shock	ζ
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0			Increase in rea	l imports per wo	orker				Growth rate	e of real imports		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Nationalist sentiment _{t-3}	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***
	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0058)
Chinese import shock	0.092^{*}	0.12**	0.12**	0.17^{*}	0.17^{*}	0.17^{*}	0.12^{*}	0.20^{**}	0.19^{*}	0.22^{*}	0.23^{*}	0.26^{+}
	(0.042)	(0.044)	(0.043)	(0.074)	(0.079)	(0.076)	(0.062)	(0.069)	(0.075)	(0.100)	(0.10)	(0.14)
Manufacturing share1998				-0.14	-0.096	-0.083				-0.052	-0.017	-0.043
				(0.17)	(0.18)	(0.17)				(0.14)	(0.15)	(0.19)
Foreign born population					0.25	0.37^{*}					0.30^{+}	0.35*
					(0.16)	(0.18)					(0.15)	(0.18)
Change in foreign born					0.035	-0.23					-0.061	-0.24
					(0.41)	(0.41)					(0.40)	(0.41)
Other qualification	-0.069**	-0.069**	-0.066**	-0.069**	-0.068**	-0.066**	-0.069**	-0.070**	-0.067**	-0.070^{**}	-0.069**	-0.066**
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
GCSE etc	-0.075***	-0.075***	-0.073***	-0.075***	-0.074***	-0.072***	-0.075***	-0.076***	-0.074***	-0.076***	-0.075***	-0.073***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
A-level etc	-0.093***	-0.093***	-0.092***	-0.093***	-0.092***	-0.091***	-0.092***	-0.093***	-0.092***	-0.093***	-0.091***	-0.091***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Other higher degree	-0.10***	-0.10***	-0.10***	-0.10***	-0.10***	-0.100***	-0.10***	-0.10***	-0.10***	-0.10***	-0.10***	-0.10***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Degree	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***	-0.16***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)
Male	0.0044	0.0042	0.0045	0.0042	0.0045	0.0047	0.0043	0.0041	0.0045	0.0041	0.0043	0.0046
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Age/100	0.047	0.041	0.038	0.044	0.058	0.060	0.051	0.041	0.036	0.043	0.057	0.055
	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)
(Age/100) ²	0.52**	0.52**	0.53**	0.52**	0.51**	0.52**	0.52**	0.52**	0.54**	0.52**	0.51**	0.52**
	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)
Not born in UK	-0.093**	-0.093**	-0.091**	-0.093**	-0.094***	-0.092**	-0.093**	-0.093***	-0.091**	-0.093**	-0.095***	-0.092***
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
One parent not born in UK	-0.052*	-0.053*	-0.052*	-0.054*	-0.055*	-0.053*	-0.052*	-0.053*	-0.052*	-0.053*	-0.055*	-0.053*
•	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Both parents not born in UK	0.0047	-0.00016	-0.0010	-0.00096	-0.0098	-0.011	0.0046	0.00090	-0.00070	0.00072	-0.0085	-0.0096
1	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)
Year=2005	0.011	· · · ·	· · · ·	· · ·	· · ·	· · · ·	0.021	. ,	× ,	, ,	. ,	
	(0.016)						(0.016)					
Year=2008	-0.065***						-0.041*					
	(0.017)						(0.016)					
Constant	-0.12*	-0.075	-0.10	-0.071	-0.098	-0.13	-0.14*	-0.12	-0.15	-0.12	-0.15^{+}	-0.19^{+}
	(0.051)	(0.078)	(0.095)	(0.078)	(0.081)	(0.097)	(0.057)	(0.082)	(0.10)	(0.083)	(0.084)	(0.11)
Fixed effects		× /	× /									
Year	Yes						Yes					
NUTS 1-year		Yes		Yes	Yes			Yes		Yes	Yes	
NUTS 2-year			Yes			Yes			Yes			Yes
Random intercept standard deviations												
NUTS 3	0.0000016***	0.00011	1.1e-09***	0.000014^{***}	0.000077***	8 2e-10***	0.00000023***	0.000016***	1.2e-09***	0 0000024***	0.0000016***	$34e-10^{***}$
NUTS 3-year level	0.050***	0.037***	6.5e-09***	0.037***	0.040***	6.3e-09***	0.049***	0.035***	6.0e-09***	0.035***	0.00019***	3.4e-09***
LAD-year level	01000	01007	0.0000	01057	0.044***	0.00000064***	01015	01055	0.00 0)	01022	0.045***	0.000000027***
Observations					01011	510000001	<u> </u>				01010	5.00000027
NILITS 3	123	123	123	123	123	123	123	123	123	123	123	123
NUTS 3-year	366	366	366	366	366	366	366	366	366	366	366	366
I AD-year	500	500	500	500	1039	1039	500	500	500	500	1039	1039
Individual-year	24726	24726	24726	24726	24726	24726	24726	24726	24726	24726	24726	24726
BIC	62472.8	62750.2	63406 2	62759.6	63018.8	63442.1	62473.6	62750.2	63407.7	62760.2	62784.1	63/1/1 0
DIC	02+/2.0	02/30.2	00-00.5	04/39.0	00010.0	03442.1	027/3.0	02/30.2	05407.7	02/00.2	02/04.1	0.7777.0

Note: Results from linear multilevel models. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p < 0.01, p < 0.01.

Table A 3: Regressing support for international cooperation on local Chinese import shock

			 In	crease in real imp	orts per worker					Growth rate of re	al imports	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	***	***	***	***	***		***		***	***	***	***
Support for intern. cooperation _{t-3}	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45***	0.45	0.45***	0.45***	0.45***	0.45***
Chinese investational	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)	(0.0055)
Chinese import shock	-0.040	-0.011	-0.028	0.018	0.023	-0.048	-0.19	-0.15	-0.11	-0.23	-0.21	-0.29
Manufacturing share 1000	(0.030)	(0.055)	(0.047)	(0.087)	(0.087)	(0.085)	(0.076)	(0.082)	(0.084)	(0.11)	(0.12)	(0.10)
Wanutacturing share1998				(0.20)	(0.20)	(0.20)				(0.17)	(0.17)	(0.21)
Foreign born population				(0.20)	0.14	0.16				(0117)	0.11	0.13
6 F - F					(0.17)	(0.19)					(0.17)	(0.19)
Change in foreign born					-0.094	-0.15					-0.055	-0.14
					(0.43)	(0.44)					(0.43)	(0.44)
Other qualification	-0.035	-0.034	-0.033	-0.034	-0.033	-0.033	-0.035	-0.033	-0.033	-0.033	-0.033	-0.032
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
GCSE etc	-0.054**	-0.053**	-0.053**	-0.053**	-0.052*	-0.053**	-0.054**	-0.053**	-0.053**	-0.052*	-0.052*	-0.052*
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
A-level etc	(0.029	(0.029	0.028	(0.029	0.030	0.028	0.028	0.029	0.028	0.029	(0.029	0.028
Other higher degree	(0.023)	(0.023)	-0.0015	(0.023)	(0.023)	-0.00088	(0.023)	(0.023)	-0.0016	(0.023)	(0.023)	-0.00069
Other higher degree	(0.018)	(0.018)	(0.018)	(0.018)	(0.012)	-0.00088	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Degree	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***	0.21***
8	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
Male	0.078 ^{***}	0.079* ^{***}	0.079* ^{***}	0.079***	0.079 ^{***}	0.078***	0.079***	0.079***	0.079 ^{***}	0.079 ^{***}	0.079***	0.078***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Age/100	-0.50**	-0.51**	-0.51**	-0.51**	-0.51**	-0.51**	-0.49**	-0.51**	-0.51**	-0.51**	-0.51**	-0.50**
((0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)
$(Age/100)^2$	0.54	0.55	0.54	0.55	0.55	0.54	0.53	0.54	0.54	0.54	0.55	0.54
Not home in UK	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)
Not born in UK	(0.036)	(0.034)	(0.036)	(0.034)	0.035	(0.035)	(0.036)	(0.034)	0.035	(0.034	(0.035)	(0.034)
One parent not born in UK	0.087***	0.091***	0.091***	0.091***	0.090***	0.090***	0.086***	0.090***	0.091***	0.090***	0.089***	0.090***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Both parents not born in UK	0.13***	0.13***	0.14***	0.13***	0.13***	0.13***	0.13***	0.13***	0.13***	0.13***	0.13***	0.13***
1	(0.035)	(0.035)	(0.035)	(0.035)	(0.036)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.036)	(0.035)
Year=2005	-0.067***						-0.074***					
	(0.017)						(0.016)					
Year=2008	-0.082***						-0.10***					
-	(0.018)						(0.017)					
Constant	1.05	1.03	1.17	1.03	1.01	1.15	1.13	1.10	1.21	1.10	1.08	1.24
Final affects	(0.057)	(0.085)	(0.10)	(0.085)	(0.087)	(0.11)	(0.064)	(0.091)	(0.11)	(0.091)	(0.094)	(0.12)
rixeu ejjecis Veor	Vas						Vec					
NUTS 1-year	1 05	Ves		Ves	Ves		1 05	Ves		Ves	Ves	
NUTS 2-year		105	Yes	105	105	Yes		105	Yes	105	105	Yes
Random intercept standard deviations												
NUTS 3	0.052^{***}	0.036***	0.020***	0.036***	0.023***	0.0000070^{***}	0.053***	0.038***	0.020^{***}	0.038***	0.026***	0.0000086^{***}
NUTS 3-year level	0.051***	0.039***	0.00000016***	0.039***	0.00000039***	0.00000030***	0.049^{***}	0.036***	0.00000013***	0.035***	3.2e-09***	0.00000023***
LAD-year level					0.073***	0.048^{***}					0.071***	0.047***
Observations												
NUTS 3	123	123	123	123	123	123	123	123	123	123	123	123
NUIS 3-year	366	366	366	366	366	366	366	366	366	366	366	366
LAD-year Individual-year	24546	24546	24546	24546	24546	24546	24546	24546	24546	24546	1040	1040
BIC	63520.5	63781.6	64430.9	63791.6	63805.9	64465 3	63515.1	63778 5	64429.6	63787.4	63802.7	64462.3
DIC	05520.5	05/01.0	0.00.7	05771.0	05005.7	0.100.0	05515.1	05770.5	01127.0	05707.4	05002.7	02.5

Note: Results from linear multilevel models. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p < 0.001.

Table A 4: Regressing support for EU membership on local Chinese import shock

			Increase in re	eal imports per wor	ker				Growth rat	te of real import	s	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Support for EU membership _{t-3/4}	0.65***	0.65***	0.65***	0.65***	0.65***	0.65***	0.65***	0.65***	0.65***	0.65***	0.65***	0.65***
Support for EU memb.1-3/4 X Year=2006	(0.011) -0.041 ^{**} (0.015)	(0.011) -0.042** (0.015)	(0.011) -0.044 ^{**} (0.015)	(0.011) -0.042** (0.015)	(0.011) -0.042** (0.015)	(0.011) -0.044** (0.015)	(0.011) -0.041** (0.015)	(0.011) -0.042** (0.015)	(0.011) -0.043** (0.015)	(0.011) -0.042** (0.015)	(0.011) -0.042** (0.015)	(0.011) -0.043** (0.015)
Chinese import shock	-0.14* (0.068)	-0.16** (0.060)	-0.15**	-0.21* (0.098)	-0.21* (0.099)	-0.25* (0.098)	-0.12^+	-0.17** (0.066)	-0.12^+	-0.24* (0.11)	-0.24* (0.11)	-0.16
Manufacturing share ₁₉₉₈	(0.000)	(0.000)	(0.057)	0.18	0.16	0.27 (0.24)	(0.004)	(0.000)	(0.004)	0.18	0.17	0.086
Foreign born population				(0.2.1)	0.069 (0.23)	0.042 (0.26)				(*-= !)	0.023 (0.23)	0.052
Change in foreign born					-0.82 (0.56)	-0.57 (0.58)					-0.78 (0.56)	-0.58 (0.58)
Other qualification	-0.031 (0.035)	-0.028 (0.035)	-0.026 (0.035)	-0.028 (0.035)	-0.029 (0.035)	-0.026 (0.035)	-0.031 (0.035)	-0.027 (0.035)	-0.025 (0.035)	-0.027 (0.035)	-0.028 (0.035)	-0.025
GCSE etc	0.038 (0.028)	0.042 (0.028)	0.043 (0.028)	0.042 (0.028)	0.041 (0.028)	0.043 (0.028)	0.038 (0.028)	0.042 (0.028)	0.044 (0.028)	0.043 (0.028)	0.042 (0.028)	0.044 (0.028)
A-level etc	0.082** (0.032)	0.087** (0.032)	0.084** (0.032)	0.087** (0.032)	0.086** (0.032)	0.085** (0.032)	0.082*	0.087** (0.032)	0.085** (0.032)	0.087** (0.032)	0.086** (0.032)	0.085** (0.032)
Other higher degree	0.12*** (0.025)	0.12*** (0.025)	0.12*** (0.025)	0.12*** (0.025)	0.12*** (0.025)	0.12*** (0.025)	0.12*** (0.025)	0.12*** (0.025)	0.12*** (0.025)	0.12***	0.12*** (0.025)	0.12*** (0.025)
Degree	0.32*** (0.029)	0.32*** (0.029)	0.32*** (0.029)	0.32*** (0.029)	0.32*** (0.029)	0.32*** (0.029)						
Male	0.015 (0.015)	0.016 (0.015)	0.018 (0.015)	0.016 (0.015)	0.015 (0.015)	0.018 (0.015)	0.015 (0.015)	0.016 (0.015)	0.018 (0.015)	0.016 (0.015)	0.016 (0.015)	0.018 (0.015)
Age/100	-0.21 (0.29)	-0.18 (0.29)	-0.20 (0.29)	-0.19 (0.29)	-0.20 (0.29)	-0.22 (0.29)	-0.21 (0.29)	-0.18 (0.29)	-0.20 (0.29)	-0.19 (0.29)	-0.20 (0.29)	-0.21 (0.29)
(Age/100) ²	0.057 (0.28)	0.029 (0.28)	0.044 (0.28)	0.034 (0.28)	0.042 (0.28)	0.060 (0.28)	0.058 (0.28)	0.027 (0.28)	0.042 (0.28)	0.032 (0.28)	0.042 (0.28)	0.052 (0.28)
Not born in UK	0.079 (0.049)	0.075 (0.049)	0.078 (0.049)	0.074 (0.049)	0.075 (0.049)	0.079 (0.049)	0.079 (0.049)	0.074 (0.049)	0.077 (0.049)	0.074 (0.049)	0.075 (0.049)	0.078 (0.049)
One parent not born in UK	0.00061 (0.034)	0.0045 (0.034)	-0.00030 (0.034)	0.0049 (0.034)	0.0045 (0.034)	0.00051 (0.034)	0.00063 (0.034)	0.0037 (0.034)	0.00090 (0.034)	0.0037 (0.034)	0.0034 (0.034)	0.0011 (0.034)
Both parents not born in UK	0.072 (0.048)	0.082^+ (0.049)	0.087^+ (0.049)	0.083 ⁺ (0.049)	0.083^+ (0.049)	0.088^+ (0.049)	0.073 (0.048)	0.082^+ (0.049)	0.088 ⁺ (0.049)	0.082^+ (0.049)	0.083 ⁺ (0.049)	0.088 ⁺ (0.049)
Year=2006	-0.21*** (0.022)	-0.067 (0.077)	-0.19 (0.24)	-0.055 (0.079)	-0.053 (0.079)	-0.16 (0.25)	-0.22*** (0.019)	-0.092 (0.076)	-0.18 (0.24)	-0.088 (0.076)	-0.086 (0.076)	-0.17 (0.25)
Constant	0.030 (0.082)	-0.047 (0.11)	0.070 (0.13)	-0.053 (0.11)	-0.041 (0.11)	0.066 (0.13)	0.017 (0.080)	-0.049 (0.11)	0.047 (0.13)	-0.056 (0.11)	-0.040 (0.11)	0.052 (0.13)
Fixed effects Year	Yes						Yes					
NUTS 1-year NUTS 2-year		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Random intercept standard deviations	0.049***	0.0000027***	7.6e-10***	0.0000020***	0.0000023***	0.00000032***	0.054***	0.000031***	2 2e-09***	0.000011	0.0000021***	0.00000024
NUTS 3-year level	0.066***	0.047***	1.9e-09***	0.046***	0.017	0.000000032	0.064***	0.047***	6.8e-09***	0.046***	0.011	0.000000024
Observations	100	100	100	100	100	100	100	100	100	100	100	122
NU1S 3 NUTS 3-year	122 240	122 240	122 240	122 240	122 240	122 240	122 240	122 240	122 240	122 240	122 240	122 240
LAD-year	0556	0556	0556	0556	663	663 0556	0556	0556	0556	0556	663	663
BIC	21483.1	21614.8	22004.9	21623.4	21646.8	22038.8	21483.8	21614.5	22008.6	21623.1	21646.2	22043.5

Note: Results from linear multilevel models. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p < 0.001.

A.7 Additional robustness checks for the nationalist backlash effect

	Rather be a citizen of Britain than of any other		People too ready to criticize their country		Cooperate	e with other	Evaluation of Britain's membership of the EU		Benefited or not from being a member of the		Britain's long-term policy toward EU	
					countries ev	ven if it means						
	country				giving up some independence				EU?			
	Incr. p. Growth		Incr. p.	r. p. Growth In		Growth rate	Incr. p.	Growth	Incr. p.	Growth	Incr. p.	Growth
	worker	rate	worker	rate	worker		worker	rate	worker	rate	worker	rate
Chinese import shock	0.069	0.22	0.28**	0.42^{**}	-0.052	-0.30^{+}	-0.43**	-0.36*	-0.38*	-0.40^{+}	-0.057	-0.066
-	(0.10)	(0.16)	(0.090)	(0.14)	(0.10)	(0.16)	(0.14)	(0.15)	(0.19)	(0.21)	(0.12)	(0.13)
											1	

Table A 5: Ordered logit results with single items

Note: Results for coefficient of Chinese import shock in binary (benefited from membership) and ordered (all other items) logit multilevel models with NUTS 1-year fixed effects; models are estimated with two levels (random intercepts at NUTS 3-year level); standard errors in parentheses; $^+p < 0.10$, $^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

	Table .	A 6	5: R	lesults	using	alternative	factors f	for me	easuring	nationalist	attitudes
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	Natio	onalist	Natio	onalist	Natio	onalist	Natio	onalist	Nation	nalism,
	sentiment		sentiment &		sentiment		sentiment		br	oad
	(baseline)		int. coop.		(broader)		(broader) &			
							int. coop.			
	Factor built		Factor built		Factor built		Factor built		Factor built	
	from		from		from		from		from	
	(with l	oading)	(with loading)		(with loading)		(with loading)		(with loading)	
I would rather be a citizen of Britain than of any other country in the world	☑ (0.77)		☑ (0.76)		☑ (0.73)		☑ (0.74)		☑ (0.73)	
People in Britain are too ready to criticize their country	☑ (0.77)		☑ (0.65)		☑ (0.62)		☑ (0.58)		☑ (0.48)	
Cooperate with other countries even if it means giving up some independence			☑ (-0.49)				☑ (-0.36)		☑ (-0.47)	
Government should do everything it can to keep all parts of Britain together					☑ (0.68)		☑ (0.64)		☑ (0.53)	
Britain has a lot to learn from other countries in running its affairs									☑ (-0.49)	
Variance in items explained by factor	0.60		0.42		0.46		0.36		0.30	
	Incr.	Growth	Incr.	Growth	Incr.	Growth	Incr.	Growth	Incr.	Growth
	p.w.	rate	p.w.	rate	p.w.	rate	p.w.	rate	p.w.	rate
Coefficient of Chinese import shock	0.12**	0.20^{**}	0.11*	0.21^{**}	0.12**	0.23***	0.11*	0.24^{***}	0.082^{+}	0.21^{**}
	(0.044)	(0.069)	(0.045)	(0.071)	(0.043)	(0.067)	(0.043)	(0.067)	(0.045)	(0.070)

Note: Results for coefficient of Chinese import shock in linear multilevel models (with random intercepts at NUTS 3 level and NUTS 3-year level) with NUTS 1-year fixed effects. Standard errors in parentheses. Significance levels: p < 0.10, p < 0.05, p < 0.01, p < 0.001.

A.8 Individual heterogeneity in the nationalist backlash effect



Figure A 5: Conditional effects of local Chinese import exposure

Moderator: sector of employment





Note: Conditional marginal effects from linear multilevel models (with random intercepts and random slopes at NUTS 3-year level) with NUTS 1-year fixed effects. Moderators tested in separate models. Lines indicate 95% and 85% confidence intervals around point estimate. Non-overlapping 85% confidence intervals approximately correspond to statistical difference with p<0.05.

A9. Effects of the China shock on economic policy attitudes

	Overall economic ideo	factor for teft-right	Factor policy	from all v items	Factor economic	r from c injustice ms	Factor fr ownersh	om state ip items	Govern response provid	nment's ibility to e a job	Strong uni	g trade ons
	Facto	r built	Facto fror	or built n	Facto	r built	Factor	r built	Singl	e item	Single	e item
Ordinary people get their fair share of the nation's wealth	(with foading) (-0.57)		(with loading)		(with loading) ☑ (-0.83)		(with loading)					
There is one law for the rich and one for the poor Private enterprise is the best way to solve Britain's economic problems	✓ (0.63)✓ (-0.58)		☑ (-0.61)		☑ (0.83)		☑ (-0.79)					
Major public services and industries ought to be in state ownership Government's responsibility to provide a job for everyone who wants one		56) 58)					☑ (0.79)					
Strong trade unions needed to protect working conditions and wages		50)	☑ (0.70)								\checkmark	
Variance in items explained by factor	0.	34	0.	42	0.	70	0.0	62	Singl	e item	Single	e item
	Incr.	Growth	Incr.	Growth	Incr.	Incr.	Growth	Growth	Incr.	Growth	Incr.	Growth
	p.w.	rate	p.w.	rate	p.w.	p.w.	rate	rate	p.w.	rate	p.w.	rate
Coefficient of Chinese import shock	0.013 (0.042)	0.050 (0.055)	0.011 (0.046)	0.054 (0.060)	0.019 (0.047)	0.036 (0.061)	-0.013 (0.049)	-0.029 (0.063)	0.011 (0.055)	0.059 (0.071)	-0.0085 (0.087)	0.071 (0.10)

Figure A 6: Regressing economic policy attitudes on local Chinese import shock

Note: Results for coefficient of Chinese import shock in linear multilevel models (with random intercepts at NUTS 3 level and NUTS 3-year level) with NUTS 1-year fixed effects. These regressions regress economic policy attitudes in 2007 and 2004, controlling for the respective economic policy attitudes in 2004 and 2000, respectively. Standard errors in parentheses. Significance levels: $^+p < 0.10$, $^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.