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Low-wage import competition and populist backlash: The case of Italy

Guglielmo Barone and Helena Kreuter♦

Abstract. This paper studies empirically the role of trade globalization in shifting the electoral base towards populism. We proxy the trade shock with swiftly rising import competition from China and compare voting patterns at the national parliamentary elections from 1992 to 2013 in about 8,000 Italian municipalities differently exposed to the trade shock. We instrument import competition from China with Chinese export flows to other high-income countries and estimate the model in first differences. Our results indicate that trade globalization increases support for populist parties, as well as invalid votes and abstentionism. To rationalize these findings, we offer evidence that import competition worsens local labor market conditions – higher unemployment, lower income and durable consumption – and increases inequality. Finally, we point out that local public expenditure may play a role in mitigating the political consequences of the trade shock, arguably because it alleviates economic distress.

Keywords: trade globalization, populism, local public spending.
JEL classification: D72, F60, R51.

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1. Introduction

In many developed Western societies, populism is on the rise. The outcome of the Brexit referendum and the election of Donald Trump in the US are the most eye-catching examples of this phenomenon, but several other countries are witnessing similar tendencies. The growing concern about such a political development has prompted a widespread debate on its economic causes. Trade globalization is one of the key candidate economic determinants, the channels at work being labor market adjustments. The underlying idea, consistent with a widely held perception, is that trade globalization has had redistributive effects *between* countries, with developed economies being the losers and low-wage developing exporters the winners (the "Great Convergence", Baldwin et al. 2016). On the other hand, theory also posits redistributive effects *within* (developed) countries (the parallel "Great Divergence": Moretti 2012, Rodrik, 2018). Against this theoretical background, populism can be rationalized as the reaction of globalization losers to rising economic insecurity.

The present paper contributes to the understanding of populism's determinants as well as of its remedies along three lines. First, we add new empirical evidence on the role of trade globalization in moving the equilibrium of the political game towards populism. Specifically, we compare voting patterns at the Italian national parliamentary elections over the 1992-2013 period (starting from the trade globalization take-off) in about 8,000 municipalities differently exposed to the trade shock. The model is estimated in first differences so as to control for municipality-level time-invariant idiosyncratic shocks, while a full set of time fixed effects accounts for country-level time-varying perturbations. Following the literature pioneered by Autor et al. (2013, 2020), Chinese import competition proxies for trade globalization. The populist vote is computed by relying on the classification of populist parties provided in Inglehart and Norris (2016). The identification of the causal effect of trade shock on voting behavior requires dealing with the potential endogeneity of import exposure. We address this issue by instrumenting Italian imports from China with Chinese exports to a set of non-euro high-income countries that account for a small share of Italy's total trade. The instrument is intended to capture only the push factor underlying Chinese export performance; at the same time, it involves economies weakly connected to Italy in terms of trade, so minimizing the risk of invalidating the exclusion restriction assumption.

Our first result indicates that exposure to Chinese import competition strengthens support for populist parties: according to the IV preferred specification, a one standard deviation increase in the annual change of imports from China (about 145 dollars per worker at 2000 prices) entails a rise in the annual change of the populist vote share equal to 0.4 percentage points, about one third of the average value of the dependent variable and one tenth of its standard deviation. The magnitude of the impact is non-negligible, especially if one takes into account that the vote response regards *all* voters and not just those working in the tradable sectors. This result is robust to a number of sensitivity checks, pertaining, among others, to the measurement of the trade shock, the classification of populist parties, and the potential confounding role of immigration and the introduction of the euro. Moreover, we find that voters' protest reaction also takes the form of an increase in invalid (blank and null) ballot papers and a drop in voter turnout.

Second, we focus on the economic effects of the China shock. By means of a very similar empirical strategy, we find that Chinese import penetration negatively affects employment, income and durable consumption (proxied by new car sales), so signaling that trade globalization has a redistributive role *between* countries, and has a positive effect on income inequality, which hints at the emergence of winners and losers from globalization also *within* cities. This bundle of results on real outcomes suggests that, in the case under scrutiny, populist backlash can be linked to the worsening of economic conditions due to the globalization.

Third, we complete the picture by examining whether local public spending intervention can mitigate the short-term economic costs of globalization, so exerting a counteracting effect on populism. Absent official figures on public expenditure at the municipality level, we resort to three proxy variables. The first is defined as the interaction between the total national public expenditure figure and a measure of local specialization in government consumption; the second is analogous to the first one, except that it takes into account only national welfare expenditure; the third is given by the expenditure of municipal governments. As for the latter, endogeneity is tackled by instrumenting expenditure of municipal governments with the Internal Stability Pact, a set of rules for stricter fiscal discipline that the central government imposed in some years on larger municipalities. We provide evidence that local public expenditure partially offsets the China shock. This suggests that, at least in the short term, public protection policies are likely to be an effective tool for mitigating the negative consequences of low-wage import competition.

The rest of the paper is organized as follows. The next Section provides a brief overview of the related literature, while Section 3 discusses data and measurement issues. Section 4 lays out our empirical strategy. In Section 5, we present our core findings on the effect of trade shock on populism (and other forms of protest vote). Section 6 is devoted to the results on the economic effects of the China shock. In Section 7, we consider the role of public expenditure, and Section 8 concludes.

2. Literature review

Our paper is mainly related to the empirical literature on the determinants of populist voting. While some scholars propose a cultural backlash hypothesis to explain today's success of populist parties in the Western World (e.g. Ingelhart and Norris, 2016), others trace it back to economic insecurity (Dal Bò et al., 2018), resulting especially from globalization (e.g. Guiso et al. 2017; Rodrik, 2018 and 2020), from unemployment (Lechler, 2019), and the 2008-2013 financial crisis (e.g. Guiso et al., 2019; Algan et al., 2017; Dustmann et al., 2017).[1] As to the role of globalization on electoral outcomes, Autor et al. (2020) is the seminal paper. They show that: (i) the China shock affects the ideological composition of the US Congress, with politicians moving toward the very left or the very right of the political spectrum; (ii) in presidential elections the Republican candidate benefits from greater trade exposure. Subsequent contributions essentially apply the same empirical methodology to other countries. Dippel et al. (2017) study German NUTS 3 regions from 1987 to 2009; Malgouyres (2017b) focuses on small French communities from 1995 to 2012; Caselli et al. (2019) use Italian labor market areas (over 600 units) as main unit of analysis from 1994 to 2008; Colantone and Stanig (2018) combine district-level voting data and European

[1] Gozgor (2020) shows that also economic uncertainty plays a role.

NUTS 2 region-level trade data between 1988 and 2007. They all share the result that low-wage import competition increases voting for far-right parties.[2] The first contribution of this paper – showing that rising imports from China increase populism – can be viewed as a new application to the Italian case of the same idea. We also speak to two other streams of literature. As far as the redistributive effects of trade shocks are concerned, we refer to the literature pioneered by Autor et al. (2013), who outline a simple theoretical trade model based on monopolistic competition and heterogeneity in industry labor productivity across countries, according to which positive shocks to low-wage countries' export supply can cause employment in the traded-good sectors of developed countries to contract on net as long as trade is not balanced. Empirically, they find that import competition harmed US local labor markets. Subsequent studies also assess labor market adjustment costs, both in terms of job displacements and reduced earnings (Dauth et al., 2014; Malgouyres, 2017a; Branstetter et al., 2019). Our analysis of the compensatory function of local public expenditure is related, instead, to the literature on the political consequences of fiscal austerity: Fetzer (2019) shows that fiscal austerity correlated with support for the UK Independence Party, first, and with the victory of the Leave campaign, then.

We depart from the existing literature in many respects. First, we consider the Italian case, which has two interesting features: (i) Italy displays by far one of the highest vote shares for populist parties among large rich countries (see Figure 1); (ii) ahead of the trade shock, the Italian product specialization model was more heavily centered on the less technologically advanced sectors (e.g., textile, apparel, leather, footwear, furniture) compared to its Western competitors, so making the country, from an *ex ante* perspective, more vulnerable to the China shock: Figure 2 illustrates that, in 1992, the expenditure in R&D (as a ratio of GDP) in Italy was lower than in other highly industrialized countries and that, at the same time, the Italian loss in worldwide export market shares over the 1992-2013 period was larger than the average. Second, we take into account the fact that, besides a shift to populism, import competition might also have triggered other forms of protest vote. In particular, we look at invalid ballot papers and voter turnout as additional voting outcomes. Third, we show that our data are consistent with the worsening of economic conditions as a result of globalization. In addition to labor market variables (employment and income), we also cover durable consumption proxied by new car sales: to the best of our knowledge, no other paper has so far shown the impact on consumption. Fourth, we explicitly address the role of local public spending: given that the trade shock is spatially differentiated, fiscal stimulus seems a good candidate as a relief factor. Our paper is the first to show that local public expenditure can help mitigate voters' reaction at the polls. Unlike Fetzer (2019), we find that this result holds for general elections spanning over more than a decade, rather than just for a one-off and unique event such as the Brexit referendum.[3]

3. Data and measurement issues

[2] Bergh and Gustafsson (2019) cover 33 European countries over the 1980-2016 period. Contrary to the within-country studies outlined above, they find no evidence of a positive association between economic globalization and populism.

[3] Caselli et al. (2019) analyzed the effects of the China shock on electoral dynamics in Italy. However, they do not examine the impact on different forms of protest vote, nor the economic outcomes, nor the role of local public intervention.

Measuring exposure to import competition. To measure the exposure of Italian municipalities to import competition from China, we use the index developed by Autor et al. (2013), which maps sector-specific national import shocks to local units on the basis of their initial industry specialization:

$$\Delta IC_{it} = \sum_k \frac{L_{ikt_0}}{L_{it_0}} \frac{\Delta M_{kt}^{ITA}}{L_{kt_0}} \quad (1)$$

where *i* indicates municipalities; *t* denotes election years (1994, 1996, 2001, 2006, 2008, 2013); *k* indicates tradeable sectors; ΔM_{kt}^{ITA} is the yearly average change in imports (in real terms) from China to Italy observed in sector *k* over the length of a legislature; L_{kt_0} is Italian employment in sector *k* measured on the basis of Census data at the start of the decade (1991 for the periods 1992-1994, 1994-1996,1996-2001; 2001 for the periods 2001-2006, 2006-2008, 2008-2013); L_{ikt_0} is the start-of-decade employment in municipality *i* and sector *k*; and L_{it_0} is the start-of-decade total employment in municipality *i*.[4]

Annual bilateral trade flows at the four-digit level of the SITC Revision 2 product classification are taken from the Observatory of Economic Complexity at the MIT Media Lab, which combines historical Feenstra's data (1962-2000) from the Center for International Trade Data with more recent data (2001-2014) of UN COMTRADE. Local employment at the two-digit level of the NACE Revision 1 industry classification is drawn from the Italian Statistical Agency (Istat) for the Census years 1991 and 2001. In Appendix A, we describe how four-digit SITC Revision 2 product codes are converted into two-digit NACE Revision 1 industry codes.

Figure 3, Panel A, shows that Chinese exports took off at the beginning of the nineties. Since then, they have been growing at a much faster pace with respect to worldwide exports, and Italy has not been immune to such an impetuous trend. In Figure 3, Panel B, we display the sectoral contribution to the total growth rate of imports from China in real terms over the period under examination. Between 1992 and 2013, Italian imports from China grew eight-fold, so that by 2013 China became Italy's third largest import origin after Germany and France; the compounded average growth rate exceeded 10 per cent. The main contributions came from machineries (NACE revision 1 codes 29 and 30), textiles and wearing apparel (17, 18), electrical machinery and communication equipment (31, 32), chemical products (24) and leather and footwear (19).

Identifying populist parties. Data on election outcomes come from the Ministry of Interior and are available at the municipality level (about 8,000 municipalities).[5] We sourced information on the votes for each party, the invalid ballot papers, and the turnout at the polling booths for the general parliamentary elections that took place in 1992, 1994, 1996, 2001, 2006, 2008, and 2013. In light of the broader political involvement envisaged by the regulation of the Chamber of

[4] Equation (1) defines a *de facto* measure of import exposure. An interesting line of research would be extending the analysis to *de jure* measures (Jha and Gozgor, 2019), but this goes beyond the scope of the present paper.

[5] http://elezionistorico.interno.it/. Data do not include the small autonomous Aosta Valley region (0.2 per cent of the Italian population).

Deputies, our focus is specifically on the elections for the lower house of the legislature.[6] Over the years under scrutiny, electoral rules changed, with a different mix of parliamentary seats assigned by majoritarian rule or by proportional rule. In all elections, we restrict our attention to votes under the proportional rule, which is more apt to mirror political preferences.

With voting data in hand, we identify populist parties by relying on the classification provided in Inglehart and Norris (2016). They exploit the 2014 Chapel Hill Expert Survey (CHES) in which 337 political scientists are asked to rate the positioning of 268 parties (those with seats in Parliament) in 31 European countries on a number of different policy issues. Experts' answers to 13 selected questions[7] are mapped, by means of factor analysis, into scores and a party is labelled as populist if the standardized sum of its scores related to cultural aspects is above a given threshold. Italian parties coded as populist, on the occasion of the 2013 elections, are the Northern League (*Lega Nord*), the Five Star Movement (*Movimento Cinque Stelle*) and the Brothers of Italy (*Fratelli d'Italia*). In relation to our aim, this approach has two limitations: it does not span the full spectrum of Italian political forces (those that did not win any seat in Parliament) and, more importantly, it does not take into account political forces involved in the elections before 2013. Hence, we properly integrate Inglehart and Norris' (2016) list by tracing parties back in time so that it ultimately includes the Northern League (Lombard League in 1992), the National Alliance (*Alleanza Nazionale*), the Italian Social Movement (*Movimento Sociale Italiano*), the Tricolor Flame (*Fiamma Tricolore*), the Right-Tricolor Flame (*La Destra*), Brothers of Italy (*Fratelli d'Italia*), and the Five Star Movement (*Movimento Cinque Stelle*). Table A2 in the Appendix C reports the year-by-year list of populist parties considered in this paper.[8]

Figure 4 shows the overall increasing populist vote trend in Italian general elections. In 1992 the populist share was about 15 per cent; in the next two elections it rose, exceeding 25 percent four years later; after that, the populist share went monotonically down (except for the 2006 election), dipping to slightly below 15 percent in 2008. Finally, in the 2013 election, the populist

[6] The Italian parliament is composed of two houses: the Chamber of Deputies and the Senate of the Republic. According to the principle of perfect bicameralism, the two houses perform identical functions. The only differences between them lie in the membership and the rules for the election of their members. The Chamber of Deputies has 630 members, who must be at least 25 years old and are elected by all Italian citizens over the age of 18. The Senate has 315 members, who must be at least 40 years old and are elected by all Italian citizens over the age of 25. In addition to elected members, the Senate also includes life senators, who are appointed by the President of the Republic.

[7] They concern the following dimensions: support for traditional values, liberal social lifestyles, nationalism, tough law and order, multiculturalism, immigration, rights for ethnic minorities, religious principles in politics, rural interests, wealth redistribution, as well as stance towards market deregulation, state management of the economy, and preferences for either tax cuts or public services.

[8] Inglehart and Norris (2016) take as a basis for their classification Mudde (2007)'s definition of populism, according to which populism presents three recurring features: (i) anti-establishment ideology that considers society to be ultimately separated into two homogenous and antagonistic groups – the 'pure people' and the 'corrupt elite' – and argues that politics should be an expression of the will of the people; (ii) authoritarianism belief in a strictly ordered society in which infringements of authority are to be punished severely; and (iii) nativism, holding that states should be inhabited exclusively by members of the native group ("the nation"), and non-native elements – whether persons or ideas – are fundamentally threats to the homogenous nation-state. Yet, while Mudde (2007)'s definition essentially captures right-wing populism, the subsequent empirical choices made by Inglehart and Norris (2016) also allowed to label the Five Star Movement as populist, even if it is not a right-wing party. See also Muller (2016) for a broader overview of the concept of populism.

parties nearly tripled their share. The figure also displays large variability in populism across municipalities.

Proxies for immigration and euro. In the robustness analysis, we check whether two concurrent shocks - immigration and the adoption of the euro - confound the impact of imports from China. Immigration is defined as the average annual change of the share of foreigners over native population:

$$\Delta\left(\frac{Immigrants_{it}}{Natives_{it}}\right).$$

Data at the municipality-year level come from Istat and are available only from 2001 onwards.

Exposure to the euro is given by:

$$\sum_{k}\frac{L_{ikt_0}}{L_{it_0}}(1-\vartheta_k)\,\Delta REER_t$$

where $\Delta REER_t$ is the average annual growth rate of Italy's real effective exchange rate over a parliamentary term (a positive value indicates appreciation and, so, loss of competitiveness). Data on $\Delta REER_t$ are taken from the Bank of International Settlements. To map the country-level exchange rate shock to sectors, we assume that activities with low human capital content are more sensitive to price competition, in accordance with Bugamelli et al. (2010). Specifically, ϑ_k is the skill intensity in manufacturing sector *k* as reported by the same authors. Local exposure is then retrieved, in parallel with equation (1), by taking a weighted summation of the industry-level changes, where the weights reflect the start-of-decade relative importance of each sector in a given municipality.[9]

4. Empirical strategy

To assess the causal effect of import competition on populist vote, we adopt the following specification:

$$\Delta Y_{it} = \beta\Delta IC_{it} + X'_{it_0}\gamma + \delta_t + \gamma_{r(i)} + \varepsilon_{it}. \qquad (2)$$

As above, *i* indicates municipalities, *t* denotes the election years (1994, 1996, 2001, 2006, 2008, 2013) and t_0 refers to the Census years 1991 (for the periods 1992-1994, 1994-1996, 1996-2001) and 2001 (for the periods 2001-2006, 2006-2008, 2008-2013). ΔY_{it} is the average annual change of the populist vote share between two subsequent elections; ΔIC_{it} is the trade shock defined in equation (1); δ_t are period fixed effects and $\gamma_{r(i)}$ are region-level fixed effects (*r* = North, Centre, South); X_{it_0} includes a set of (time- variant and invariant) variables – all measured at t_0 – aimed at controlling for economic, demographic, social, and geographic differences across municipalities: share of workers employed in manufacturing sectors, population density, share of female working-

[9] The summation is over manufacturing sectors, the only ones for which the skill intensity index is available (see Table A1).

age population, share of the population that holds at least a high-school diploma, aging index, a dummy capturing whether the territory is coastal or not, and a measure of terrain roughness. Data for all these covariates are taken from Istat. ε_{it} is an idiosyncratic shock.[10] Table 1 shows the main descriptive statistics. Interestingly, both the China shock ΔIC_{it} and the dependent variable ΔY_{it} display large variability: the standard deviation is more than twice and more than three times the mean, respectively.

Estimating a first difference model allows us to control for municipality-level time-invariant heterogeneity. However, endogeneity might arise primarily from omitted municipality-period idiosyncratic shocks. For example, suppose that a negative sectoral shock hits the domestic economy: if the spatial distribution of the affected industry is not uniform (as is often the case), the shock may disproportionally worsen the labor market of the municipalities specialized in that industry, so generating a populist reaction at the polls; at the same time, the negative sectoral shock may attract imports from China. In such a case, the OLS estimate for β would be biased upwards. On the other hand, reverse causality may generate downward bias if populism gives rise to protectionist trade measures, and measurement error might be at work as well.

To address these potential endogeneity threats, we follow the approach in Autor et al. (2013) and instrument ΔIC_{it} with:

$$Z_{it} = \sum_k \frac{L_{ik\ 0}}{L_{it_0}} \frac{\Delta M_{kt}^{OTHER}}{L_{kt_0}}. \quad (3)$$

Equation (3) is analogous to equation (1) except for ΔM_{kt}^{OTHER}, which is the yearly average change (over a legislature) in real import flows of industry-k goods from China to a set of non-euro OECD countries that, between 1992 and 2013, exhibited high growth rates of trade with China , but accounted for an average share in total Italian trade of less than 1 per cent: Norway, Denmark, Australia, Canada, Iceland and New Zealand.[11] The idea underlying Z_{it} is that it captures only supply-side improvements in Chinese export competitiveness (due, for example, to productivity growth); at the same time, we assume that Z_{it} affects the populist vote only through its effect on ΔIC_{it}. The latter assumption might be invalidated were we to take advanced economies with strong trade connections to Italy as alternative destination areas. To minimize this risk, we select high-income countries that are weakly integrated (in trade terms) with Italy.

5. Results on populism

Baseline findings. Table 2 shows the baseline estimates. In column (1), we start by displaying the OLS results of a very parsimonious specification including only import competition and period fixed effects. Estimates suggest a positive (and highly statistically significant) correlation between the change in the trade shock and the change in the populist vote share. In the next two columns, we enrich the specification by including area fixed effects $\gamma_{r(i)}$ and other controls X_{it_0}: the point estimate of the coefficient of interest and its precision are very stable. Columns (4)-(6) document

[10] Like the literature in the field, we cannot distinguish demand and supply effects (Guiso et al. 2017): our results are about the effect of the import competition shock on the political market equilibrium.

[11] Trade flows of each of these countries have been deflated by applying the respective implicit gross value added deflator, taken either from the OECD STAN database (if available) or from the EU KLEMS database.

the results derived using the IV estimator. The instrument is always highly significant in predicting the potentially endogenous variable. The impact of the trade shock on the share of preferences for populist parties is highly significant, though slightly smaller in size than its OLS counterpart. The downward revision of the point estimates suggests that the potential omitted variable bias stemming from a negative sectoral supply shock dominates the potential downward bias related to reverse causality and/or measurement error. In our preferred specification in column (6), which includes area fixed effects and controls, the estimate for the coefficient of interest is 0.0249 and is very precisely measured. To put this into perspective, a one standard deviation increase in the yearly average change of Chinese imports (about 145 dollars per worker at 2000 prices) entails a rise in the average annual change of the populist vote share equal to one third of the average value of the dependent variable and one tenth of its standard deviation. The impact is surprisingly large, especially if one considers that the vote response regards *all* voters, and not just those working in the tradeable sectors (about 45 per cent of total workers) who are directly affected by rising trade exposure.

Robustness checks. In Table 3, we carry out a number of robustness checks for our preferred specification (Table 2, column 6). A first set of robustness checks deals with the challenge of properly identifying populist parties. van Kessel (2015) proposes an alternative list of Italian populist parties, which excludes Brothers of Italy (and, implicitly, its forerunner parties such as the Italian Social Movement, etc.), but includes Berlusconi's political forces *Forza Italia* and *Popolo delle Libertà* (that is, *Forza Italia* fused with National Alliance). When we rely on this classification – which we enrich by including all minor parties in the coalitions led by Berlusconi – results are confirmed (column 1). Another possible classification is the one compiled by the Swedish think thank Timbro, which labels as populist parties of the extreme right and extreme left, as well as the Northern League (*Lega Nord*) and the Five Star Movement (*Movimento Cinque Stelle*) (see Table A3).[12] Even when we adopt this third classification, the impact of China is still positive and significant (column 2). In addition, we also check for the robustness of our initial classification to the inclusion of Berlusconi's and his allies' parties and, again, the test is reassuring (column 3). So far, we computed the populist vote share by including in the denominator valid votes for all parties. Yet, currently available classifications of populist political forces do generally not scrutinize minor parties (i.e. those with no seats in Parliament). In column 4, we divide the number of populist votes - as per Inglehart and Norris (2016) - only by the valid votes for parties with parliamentary representation and the coefficient of interest is again very stable.

The next four columns address measurement issues that pertain to the key independent variable. We chose import competition from China as our preferred measure of trade shock for the sake of comparability with the literature in the field. However, one might reasonably argue that China is not the only big player in trade globalization. Among Italy's top import origin areas in 2013 – defined as those whose share of total Italian imports exceeds 4 per cent – the group of countries belonging to Central and Southeastern Europe plays a relevant role, too, mainly because of geographical proximity.[13] In our sample period, imports from these countries rose by an average

[12] Data are available at https://populismindex.com/.

[13] The list of countries includes Czech Republic, Hungary, Poland, Slovak Republic, Slovenia, Bulgaria, Croatia, Romania, Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, Montenegro, and Serbia. At the end of

of 9.9 per cent per year, only slightly below the Chinese figure (10.3). Hence, we redefine ΔIC_{it} in equation (1) so as to include in ΔM_{kt}^{ITA} also imports to Italy from Central and Southeastern Europe, while keeping the instrument group unchanged. Column 5 indicates that broadening the set of sending countries does not alter our results. Another potential drawback of our key regressor is related to the set of importing countries. Proxying the trade shock with Chinese import penetration within a single country might make more sense in the case of an economy that exhibits a very large internal market. The US, for example, seems to fully meet this requirement. When it comes to smaller developed countries, like Italy (or Germany or France), this implicit assumption is no longer obvious, and it would be reasonable to assume that competition with low-wage exporters actually takes place within a wider market. Therefore, we re-compute ΔIC_{it} in equation (1) by including in ΔM_{kt}^{ITA} also imports from China to Italy's top five export destinations in 1992.[14] The estimated effect of the trade shock continues to hold (column 6). Still, a further issue with the trade exposure indicator regards the normalization of the change in imports from China. In equation (1) we follow Autor et al. (2013) and divide import change by employment in Italy in sector *k* measured at the beginning of the decade. In column 7, instead, imports are divided by absorption (internal production + imports – exports at the sector level) at the start of the decade, along the lines of Autor et al. (2020). The coefficient of interest is again positive and statistically very significant. The last concern about the import exposure measure is that we are not capturing the potential benefits of trade integration that may come from Italian exports to China. In Column 8, we substitute net Italian imports from China (imports – exports) for ΔM_{kt}^{ITA} and the main result is unaffected.

Then, we check that our key coefficient is not picking up the impact of two concurrent shocks leading in turn to higher populism. The first is the other major facet of the ongoing globalization process, namely the increasing international migration towards rich countries. Hostility to immigration is justified by populist parties on the basis of the perception that foreigners pose a threat to jobs and livelihoods and a challenge to national cultures and identities. The second is the introduction of the euro in 1999. According to the anti-euro rhetoric – which, not surprisingly, has been largely embraced by the parties we classify as populist – the end of competitive currency devaluation harmed Italian exporters, generating unemployment in exporting sectors. In column 9, we control for immigration (the sample is here restricted to the 2001-2013 period because of data availability), while in column 10 for the euro shock (see Section 3). In Column 11, we run our baseline regression model (equation 2) with both potential confounding factors. Reassuringly, the effect of import competition is always largely confirmed.

Finally, the last four columns in Table 3 tackle a few additional issues. Between 1992 and 1994, Italy witnessed the outbreak of the so-called *Mani Pulite* scandal, a judicial investigation into political corruption. As a result of this scandal, the political system underwent a deep transformation, with the disappearance of many traditional parties including the Christian Democracy (*Democrazia Cristiana*), the main party since the end of WWII, and the Socialist Party (*Partito Socialista*), which played a very important role in supporting the former during the

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the 1980s, they accounted for a relatively small (but not irrelevant) share of Italian imports (3 per cent); in 2013, at the end of our sample period, this share had grown considerably reaching 9 per cent.

[14] Germany, France, the US, Great Britain and Spain. In 1992, the share of total Italian exports to each country was above 5 per cent and the cumulative share was 54 per cent.

eighties. The 1992 election (the first one in our sample) was the last election of the long-established First Republic; from the 1994 election onwards, new forces joined the political arena, including Berlusconi's party *Forza Italia*. In column 12, we document that our finding is robust to the exclusion of the 1992 election from the sample. Column 13 is concerned with the spatial units of analysis. Our very detailed breakdown allows us to exploit a very large portion of variability. However, this might come at a cost: spillover effects among municipalities. For example, a certain trade shock may hit a municipality, but its effects may spread outside that municipality because of local production ties and worker mobility. In the end, spillovers may bias parameter estimates. To ensure that this is not the case, we aggregate all relevant variables at the level of 611 local labor markets (with an average size equal to about 97,000 inhabitants), which are much more self-contained units than municipalities as their boundaries are defined on the basis of daily commuting patterns. Again, our key estimate is confirmed. In column 14, we augment the baseline specification with area-specific time fixed effects and results are once more largely reassuring. Lastly, we test the validity of our findings to the length of first differences. The literature in the field usually uses long first differences (Dippel et al., 2017: 11 years; Malgouyres, 2017b: 5.7 years), not only because it follows Autor et al. (2013), who rely on decadal Census data, but also because economic shocks might take some time to transmit. Instead, in our data the average length of first differences is 3.5 years. In column 15, we replicate the benchmark regression using only the elections held in 1992, 2001, and 2013 (those nearest to the Census years): results are qualitatively similar to the full-sample case.

Additional findings on protest vote. In order to provide a more complete picture, it is worth investigating the possibility that import competition from China might, not only have shifted votes towards populist parties, but also have triggered some other forms of protest vote. In Table 4, we present the IV results for regression model (2) with the average annual change of the share of invalid (blank and null) ballot papers (columns 1-3) and the average annual change in voter turnout (columns 4-6) as dependent variables. It turns out that import competition exerts a positive and highly significant effect on invalid ballots (known to be an alternative way of protesting against politics and politicians), and a negative and highly significant effect on voter turnout (a well-celebrated determinant of the quality of the democratic process). In both cases, the economic size of the impact is non-negligible: the estimates reported in the columns 3 and 6 imply that a one standard deviation increase in the average annual change of the trade shock implies a variation in the dependent variables that is 7 per cent (for invalid ballots) or 5 per cent (for turnout) of the respective standard deviations.

6. Economic outcomes

We have established that the rise in Chinese exports generates an increase in the share of votes for populist parties, along with an increase in the share of invalid ballots and a drop in voter turnout. Instrumental variable estimations ensure that these relationships have a causal interpretation. According to the economic theory outlined in the Introduction, the transmission channels should be concerned with the redistributive effects of trade between and within countries: developed countries suffer from the upsurge of low-wage emerging exporters such as

China and the negative impact is likely to affect more strongly domestic workers whose degree of substitutability for workers in low-wage countries is larger. In this Section, we see whether our case study is consistent with this prediction.

First, we test whether import competition from China has a negative impact on employment. To this end, we run a slightly modified version of equation (2):

$$\Delta EMP_{it} = \beta \Delta IC_{it} + X'_{it-10}\gamma + \delta_t + \gamma_{r(i)} + \varepsilon_{it} \quad (4)$$

where *i* indicates municipalities and *t* denotes Census years (2001, 2011); ΔEMP_{it} is the ten-year change of total employment as a share of the working age population; ΔIC_{it} is the trade shock defined as in equation (1) with the only difference that now ΔM_{kt}^{ITA} is the change in imports from China to Italy in the tradeable sector *k* between *t* and *t* – 10; the instrumental variable is adjusted accordingly. δ_t, $\gamma_{r(i)}$ and X_{it-10} are defined as above. Local employment in 2011 is taken from Istat at the two-digit level of the NACE Revision 2 classification. In Appendix A we explain how two-digit NACE Revision 2 codes are linked to two-digit NACE revision 1 codes.

Column 2 of Table 5 presents the IV estimate of the full specification (column 1 of Table 5 simply recalls our baseline estimate of the effect of import competition from China on populism). We find a negative and significant impact of Chinese import penetration on total employment: a one standard deviation rise in the import exposure shock induces a drop in the dependent variable larger than one-fifth of its standard deviation. This finding suggests that even if China's competition affects directly only workers in tradeable sectors, negative effects are detectable at the aggregate level as well, probably because of spillover effects.[15]

Next, we examine how the China effect extends to other relevant variables: income, durable consumption, inequality. Confidential data on average income at the municipality-year level are made available by the Ministry of Economy and Finance for the years from 2003 to 2014.[16] As figures are based on tax records, we proceed to adjust them for tax evasion as follows. Comparing survey results with official tax records, Marino and Zizza (2008) derive a tax evasion rate by gender, age, geographical area, job type (employee, self-employed, etc.). We map these rates into municipalities according to their composition in terms of the same variables taken from the 2001 Census and divide, then, original income levels by 1 – (imputed tax evasion rate). The dataset provided by the Ministry of Economy and Finance also includes information on inequality, as measured by the Gini index. Data on new car sales, on the other hand, are drawn from the Italian Ministry of Infrastructure and Transport over the period 2001-2013.[17]

The estimating equation is analogous to previous ones and reads as:

$$\Delta y_{it} = \beta \Delta IC_{it} + X'_{it_0}\gamma + \delta_t + \gamma_{r(i)} + \varepsilon_{it} \quad (5)$$

[15] In unreported evidence (available upon request) we replicate the estimation of equation (4) with manufacturing employment as the dependent variable. As expected, we find stronger effects of import competition.

[16] Unfortunately, available data refer to average income and not to wages. Assuming that the impact of import competition on sources of income other than wages (e.g. rents, capital gains, etc.) is lower, our findings are to be considered as a lower bound for the effect on wages.

[17] http://dati.mit.gov.it/catalog/dataset/parco-circolante-dei-veicoli.

where Δy_{it} is alternatively the annual change in the natural logarithm of income per taxpayer (with $t = 2003, 2004, \dots, 2014$), the annual change in the natural logarithm of new car sales per capita (using 2001 Census and with $t = 2001, 2002, \dots, 2013$), the annual change in the Gini index (with $t = 2003, 2004, \dots, 2014$).[18]

We document that the China import shock has a negative effect also on income, though the size of the impact is smaller than in the case of employment (Table 5, column 5): the standardized beta is 0.01. This effect on income carries over to new car sales (Table 5, column 6). Furthermore, we find evidence for a small, positive and significant impact of import competition on the Gini index (Table 5, column 7).[19]

All in all, results in Tables 5 are consistent with the theoretical prediction according to which Italy, as a rich and developed country, is a loser from trade globalization and experienced an increase in internal income inequality.

7. The role of public intervention

The results presented so far depict a clear picture: the "China Syndrome" hit Italian municipalities, lowering employment, income and durable consumption, and increasing income inequality; on the political side, citizens reacted to these developments by increasingly shifting their vote towards populist parties. But if economic insecurity is at the heart of the populist backlash, then local fiscal policy might play a role as a counteracting force. In this Section, we look for empirical evidence supporting such an argument. We do that by augmenting the set of regressors in equation (2) with local public spending.

Unfortunately, official figures on public spending at the municipality-year level do not exist. The most granular level is the region-year one: aggregating about 8,000 municipalities into 20 regions would be very unsatisfying. We therefore adopt here three second-best alternative measures.

From the Input-Output accounts it becomes evident that the importance of government as a final consumer varies widely across sectors. For example, government purchases are zero for "private households with employed person" (NACE revision 1 code 40, 5th percentile), while they amount to 72 per cent of total use for "Health and social work" (NACE revision Code 1 85, 95th percentile). At the same time, sectoral distribution turns out to be very different across municipalities. In light of such observations, a first proxy for exposure to public expenditure at the municipality-year level can be computed as:

$$\sum_k \frac{L_{ikt_0}}{L_{it_0}} \rho_k \frac{\Delta NatExp_t}{N_{t_0}}$$

where $\Delta NatExp_t$ is the yearly average change in nationwide public expenditure taken from Istat and available from 1996 onwards. This country-level fiscal shock - normalized by the Italian population at the start of the decade (1991 for the period 1996-2001; 2001 for the periods 2001-

[18] Note that our results on populism and on employment hold in the 2000s, too (Table 5, columns 3 and 4).
[19] In the case of the Gini index, we cannot correct directly for tax evasion. Therefore, we give more weight to more reliable data by weighting regression with weights equal to 1 – (imputed tax evasion rate).

2006, 2006-2008, 2008-2013), N_{t_0} is apportioned to industries according to their dependence on public spending. Specifically, ρ_k is the share of the final demand for goods from sector *k* incurred by the public administration (as it results from the 1995 Input-Output accounts released by Istat, see Table A1). Municipality-level exposure is derived again, in parallel with equation (1), by exploiting the local heterogeneity in the employment industry mix. This proxy takes into account the entire spectrum of public expenditure and can be considered exogenous with respect to populism at the municipality-year level; on the other hand, it might be affected by some measurement error if ρ_ks differ across municipalities. We also use a variant of the above expression, where expenditure is restricted to welfare-related objectives (health, education and social protection, defined according the Classification Of Function Of Government – COFOG); in this case, the summation ranges only over the corresponding sectors (NACE revision 1 codes 75, 80, 85 and 92).

The third proxy for exposure to local public expenditure is given by the average annual change in per capita current spending of the municipal government. Municipal governments' current expenditure is taken from the Ministry of the Interior (certificates of the balance sheet account – *Certificati di conto consuntivo*) and is available only for the 2000s. Municipal population is that of the 2001 Census. The main advantage of this proxy is that there is no error in imputing money to territories. At the same time, however, it comes with a very partial coverage of the overall public service provision in a municipality (less than 10%). Moreover, endogeneity may arise because municipality spending might react to local populism. To control for this, we instrument our regressor with the Internal Stability Pact (ISP). This set of rules reflects at the sub-national level the Stability and Growth Pact adopted by Italy in 1997. The ISP was introduced in 1999 and required municipal governments to keep their fiscal balance under tight control (Grembi et al., 2016). Initially, the ISP covered all municipalities; after 2001, an exemption was granted to municipalities with less than 5,000 inhabitants, probably because of the recognition of economies of scale in managing the municipal government. The threshold was lowered to 1,000 inhabitants in 2013 (see Table A4). For any municipality *i*, the instrument is built as the average value of a dummy ISP_{it} over the legislature ending in year t. When using the ISP-based instrument we exclude from the sample municipalities belonging to the five regions with special autonomy (Valle d'Aosta, Trentino-Alto Adige, Friuli-Venezia Giulia, Sicilia, Sardegna), which were allowed to follow different rules, and we focus on the 2001-2013 sub-period for which the instrument based on ISP is available.

Table 6 reports the results. In Panel A the proxy for public spending at the municipal-year level is based on total national expenditure, which is available from 1996 onwards. This first proxy enters the regression with a negative sign: municipalities more exposed to public spending exhibit lower support for populist parties (columns 2 and 3). The mitigating effect works also through the interaction term, even though with no statistical significance at the usual standards (column 4). As to the effect of Chinese import competition, in Figure 5 (inspired by Brambor et al., 2006), Panel A, the declining solid line indicates how the marginal effect of import competition changes at different percentiles of the fiscal policy variable (according to the model in column 4), while dashed lines represent 95% confidence intervals. The impact of our key regressor is still positive and significant as long as local public spending is below its 90th percentile, after which is becomes indistinguishable from 0. At the median, it equals 0.020, very near to the estimate in column 1.

These findings point to a clear policy implication: as far as the populist reaction is concerned, trade opening and public intervention are complements. Hence, under a normative point of view, this last result also speaks to the literature on the role of globalization in shaping government spending (Heimberger, 2020) and taxation (Jha and Gozgor, 2019). When we replicate the exercise by proxing public intervention with welfare expenditure, results are qualitatively confirmed, with the relevant difference that the interaction term is now also statistically significant (Table 6, Panel B; Figure 5, Panel B). The last proxy for the local fiscal stance – current spending of the municipal government, instrumented with the ISP – provides a rather less clear-cut picture: The China effect is positive only for intermediate levels of public spending (between 30th and 60th percentile of the fiscal variable; see Figure 5, Panel C).[20,21]

8. Conclusions

In recent years, populist parties have experienced a surge in support across Western developed countries. Our paper provides causal evidence that trade globalization, proxied by the Chinese import shock, contributes to explain this profound change in the political landscape. A plausible reason is that trade globalization has created, within advanced economies, a number of losers, whose discontent the populist parties have been able to channel. This would suggest that, in order to avoid populist drifts in the future, it is necessary to complement advances in globalization with policies that make it more inclusive by ensuring that its benefits are more widely shared. In this respect, our findings suggest that redistribution policies can be an effective tool.

Several important issues remain open for future research. First, our paper, like the others in the same literature, uses only a de facto indicator of trade globalization. Yet, it would be interesting to extend the analysis to de jure indicators (Jha and Gozgor, 2019; Pleninger and Sturm, 2020). Moreover, a promising line of future research would be to explore the role of financial globalization in fostering the spread of populism. Indeed, so far the existing literature has focused just on immigration and trade globalization. Finally, our knowledge of the remedies against populist drifts is still at its beginning, and more work is needed in this direction.

[20] Rode and Saenz de Viteri (2018) find no association between globalization and income equalization attitudes. Fully reconciling this evidence with our results is beyond the scope of the paper. However, it is worth noting that comparability is limited by large differences in the sample and the dependent variables.

[21] Hainmueller et al. (2019) have recently proposed some tools aimed at improving empirical practice when estimates come from a multiplicative interaction model. Appendix B shows that, when applying these methods, the key finding on the moderating role of local public spending does not change substantially.

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Tables and figures

Table 1: Descriptive statistics

Variable	Definition	Unit	Years/Periods	Mean	Sd	Min	Max
Key regressors:							
Δ(import exposure)	average annual change in imports per worker	kUS$, 2000	1992-1994, 1994-1996, 1996-2001, 2001-2006, 2006-2008, 2008-2013	0.062	0.145	-1.526	6.079
Δ(pub. exp) – nat. tot. exp.	average annual change in public spending per capita	k€	1996-2001, 2001-2006, 2006-2008, 2008-2013	0.003	0.005	-0.002	0.137
Δ(pub. exp) – nat. welf. exp.	average annual change in welfare spending per capita	k€	1996-2001, 2001-2006, 2006-2008, 2008-2013	0.001	0.003	-0.005	0.082
Δ(pub. exp) – munic. gov. exp.	average annual change in public spending per capita	k€	2001-2006, 2006-2008, 2008-2013	0.004	0.048	-0.848	1.791
Instrumental variables:							
IV Δ(import exposure)	average annual change in imports per worker	kUS$, 2000	1992-1994, 1994-1996, 1996-2001, 2001-2006, 2006-2008, 2008-2013	0.198	0.487	-2.971	52.459
IV ISP	average of ISP dummy	0-1	2001-2006, 2006-2008, 2008-2013	0.297	0.455	0	1
Dependent variables:							
Δ (I&N populist vote)	average annual change in (populist votes according to Inglehart and Norris 2016 / valid votes))	share	1992-1994, 1994-1996, 1996-2001, 2001-2006, 2006-2008, 2008-2013	0.011	0.039	-0.301	0.203
Δ (blank ballot papers)	average annual change in (invalid ballots / total votes)	share	1992-1994, 1994-1996, 1996-2001, 2001-2006, 2006-2008, 2008-2013	0.001	0.011	-0.089	0.170
Δ (voter turnout)	average annual change in (actual voters / potential voters)	share	1992-1994, 1994-1996, 1996-2001, 2001-2006, 2006-2008, 2008-2013	-0.008	0.017	-0.383	0.353
Δ (total employment)	10-year change in (total employment / working-age population)	share	1991-2001, 2001-2011	0.004	0.110	-2.810	2.423
Δ log (income)	annual change in the natural logarithm of income	percentage change	All annual changes in the 2003-2014 period	0.016	0.116	-1.414	1.102
Δ log (new car sales)	annual change in the natural logarithm of per capita new car sales)	percentage change	All annual changes in the 2001-2013 period	-0.030	0.280	-2.639	2.485
Δ (Gini index)	annual change in the Gini index	0-1	All annual changes in the 2003-2014 period	0.001	0.013	-0.234	0.294
Controls:							
Coastal municipality	dummy	0-1	1991, 2011	0.080	0.272	0	1
Measure of territorial roughness	(max altitude – min altitude) / √(surface km2/π)	meters	1991, 2011	230.2	234.3	0.332	2,088.3
Population density	population per square km	units	1991, 2001	274.9	623.4	1.188	15,164.9
Share of female working-age population	women aged 15-64 / total population aged 15-64	share	1991, 2001	0.492	0.019	0.300	0.647
Share of graduated population	adults with at least high-school diploma / total population	share	1991, 2001	0.204	0.079	0	0.706
Old age index	population aged > 64 / population aged < 15	ratio	1991, 2001	1.644	1.425	0.147	41.50
Share of manufacturing employees	workers in manufacturing industries / total employment	share	1991, 2001	0.320	0.213	0	0.946

Table 2: Baseline estimations

	(1)	(2)	(3)	(4)	(5)	(6)
Δ(import exposure)	0.0317***	0.0303***	0.0352***	0.0213***	0.0190***	0.0249***
	(0.0050)	(0.0049)	(0.0059)	(0.0057)	(0.0054)	(0.0078)
First Stage:						
IVΔ(import exposure)				0.1369***	0.1340***	0.1165***
				(0.0235)	(0.0228)	(0.0177)
F-stat excl. instruments				33.99	34.62	43.07
Period FE	Y	Y	Y	Y	Y	Y
Area FE	N	Y	Y	N	Y	Y
Controls	N	N	Y	N	N	Y
Election years	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013
Estimation method	OLS	OLS	OLS	IV	IV	IV
Observations	48,081	48,081	48,072	48,081	48,081	48,072

The dependent variable is the average annual change in the populist vote share between two elections. Votes are categorized as populist following Inglehart and Norris (2016). Standard errors are clustered at the level of 611 local labor markets. * p<0.1; ** p<0.05; *** p<0.01.

Table 3: Robustness checks

	Measuring populism				Measuring import competition			
	(1) van Kessel	(2) Timbro	(3) I&N & Berlusconi	(4) I&N Parl. Seats	(5) Imports from more countries	(6) Imports to more countries	(7) Norm. init. asbsorb.	(8) Net imports
Δ(import exposure)	0.0137***	0.0172***	0.0136***	0.0353***	0.0159***	0.2131**	0.1117**	0.0009***
	(0.0043)	(0.0061)	(0.0043)	(0.0105)	(0.0041)	(0.1038)	(0.0539)	(0.0001)
First Stage:								
IVΔ(import exposure)	0.1165***	0.1165***	0.1165***	0.1165***	0.1953***	0.0136***	0.0819***	0.0042***
	(0.0177)	(0.0177)	(0.0177)	(0.0177)	(0.0381)	(0.0004)	(0.0017)	(0.0000)
F-stat excl. instruments	43.07	43.07	43.07	43.07	26.34	1356.71	2342.62	75870.36
Period FE	Y	Y	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Election years	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013
Estimation method	IV	IV	IV	IV	IV	IV	IV	IV
Observations	48,072	48,072	48,072	48,072	48,072	48,072	48,072	48,072

The dependent variable is the average annual change in the populist vote share between two elections. Votes are categorized as populist following Inglehart and Norris (2016), except for column (1) in which we follow van Kessel (2015) and column (2) in which we add to the original classification of Inglehart and Norris (2016) all parties that are part of the coalitions led by Berlusconi. Standard errors are clustered at the level of 611 local labor markets. * p<0.1; ** p<0.05; *** p<0.01.

Table 3: Robustness checks (continued)

	Confounders			Others			
	(9) Immigration	(10) Euro	(11) Both	(12) Exclude 1992	(13) LLMs	(14) Area-specific time FE	(15) Decadal first difference
Δ(import exposure)	0.0132**	0.0160***	0.0103**	0.0151***	0.0718***	0.0133***	0.0092**
	(0.0061)	(0.0061)	(0.0049)	(0.0058)	(0.0182)	(0.0039)	(0.0038)
First Stage:							
IVΔ(import exposure)	0.1007***	0.1066***	0.0955***	0.1123***	0.1740***	0.1131***	0.1306***
	(0.0125)	(0.0140)	(0.0093)	(0.0164)	(0.0477)	(0.0164)	(0.0050)
F-stat excl. instruments	64.95	57.73	105.78	47.16	13.32	47.65	676.04
Period FE	Y	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y
Election years	2001-2013	1992-2013	2001-2013	1992-2013	1992-2013	1992-2013	1992, 2001, 2013
Estimation method	IV	IV	IV	IV	IV	IV	IV
Observations	24,044	48,072	24,044	40,062	3,636	48,072	16,024

The dependent variable is the average annual change in the populist vote share between two elections. Votes are categorized as populist following Inglehart and Norris (2016). Standard errors are clustered at the level of 611 local labor markets. * p<0.1; ** p<0.05; *** p<0.01.

Table 4: Additional findings – invalid ballots and voter turnout

	Dep. Variable: share of invalid ballots			Dep. Variable: voter turnout		
	(1)	(2)	(3)	(4)	(5)	(6)
Δ(import exposure)	0.0004	0.0025***	0.0065***	-0.0017	-0.0020*	-0.0055***
	(0.0004)	(0.0006)	(0.0015)	(0.0011)	(0.0010)	(0.0016)
First Stage:						
IVΔ(import exposure)	0.1368***	0.1339***	0.1164***	0.1368***	0.1339***	0.1164***
	(0.0235)	(0.0228)	(0.0177)	(0.0235)	(0.0228)	(0.0177)
F-stat excl. instruments	33.99	34.63	43.11	33.99	34.63	43.11
Period FE	Y	Y	Y	Y	Y	Y
Area FE	N	Y	Y	N	Y	Y
Controls	N	N	Y	N	N	Y
Election years	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013	1992-2013
Estimation method	IV	IV	IV	IV	IV	IV
Observations	47,992	47,992	47,983	47,992	47,992	47,983

The dependent variable is the average annual change in the share of invalid ballots between two elections (columns 1-3) or the average annual change in voter turnout between two elections (columns 4-6). Standard errors are clustered at the level of 611 local labor markets. * p<0.1; ** p<0.05; *** p<0.01.

Table 5: Economic outcomes

Dependent variable	(1) Populism	(2) Employment	(3) Populism	(4) Employment	(5) Income	(6) New car sales	(7) Gini index
Δ(import exposure)	0.0249***	-0.0162***	0.0132**	-0.0106**	-0.0032***	-0.0088**	0.0004**
	(0.0078)	(0.0038)	(0.0062)	(0.0045)	(0.0005)	(0.0039)	(0.0002)
First Stage:							
IVΔ(import exposure)	0.1165***	0.1748***	0.1006***	0.1628***	0.1514***	0.1392***	0.1514***
	(0.0177)	(0.0170)	(0.0125)	(0.0130)	(0.0199)	(0.0178)	(0.0199)
F-stat excl. instruments	43.07	105.42	64.67	157.20	57.91	61.13	57.90
Period FE	Y	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y
Period	1992-2013	1991-2011	2001-2013	2001-2011	2003-2014	2001-2013	2003-2014
Estimation method	IV	IV	IV	IV	IV	IV	IV
Observations	48,072	16,028	24,044	8,015	88,979	90,307	88,979

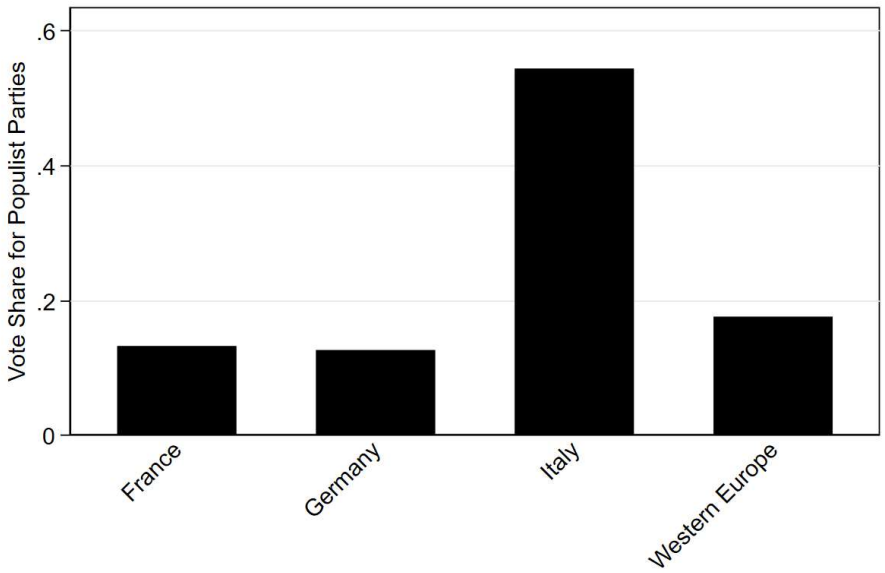
In columns 1 and 3, the dependent variable is the average annual change in the populist vote share between two elections. Votes are categorized as populist following Inglehart and Norris (2016). In columns 2 and 4 the dependent variable is the 10-year change in total employment as a share of working age population In column 5 the dependent variable is the yearly average change in log of income. In column 6 the dependent variable is the yearly average change in log of per capita new car sales . In column 7 the dependent variable is the yearly average change in the Gini index. Standard errors are clustered at the level of 611 local labor markets. * $p<0.1$; ** $p<0.05$; *** $p<0.01$.

Table 6: The role of public expenditure

	(1)	(2)	(3)	(4)
Panel A: proxying local public expenditure with national figure				
Δ(import exposure)	0.0220***		0.0217***	0.0247**
	(0.0083)		(0.0082)	(0.0102)
Δ(local public expenditure)		-0.3459***	-0.2995***	-0.2247***
		(0.0511)	(0.0481)	(0.0754)
Δ(import exposure)*Δ(local public expenditure)				-1.8795
				(1.2459)
Period FE	Y	Y	Y	Y
Area FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Election years	1996-2013	1996-2013	1996-2013	1996-2013
Estimation method	IV	OLS	IV	IV
F-stat excl. instruments	51.38		51.72	18.84
Observations	32,053	32,053	32,053	32,053
Panel B: proxying local public expenditure with national figure – only welfare expenditure				
Δ(import exposure)	0.0220***		0.0217***	0.0238**
	(0.0083)		(0.0082)	(0.0094)
Δ(local public expenditure)		-0.4810***	-0.4109***	-0.2483**
		(0.0755)	(0.0715)	(0.1122)
Δ(import exposure)*Δ(local public expenditure)				-4.4084**
				(2.0675)
Period FE	Y	Y	Y	Y
Area FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Election years	1996-2013	1996-2013	1996-2013	1996-2013
Estimation method	IV	OLS	IV	IV
F-stat excl. instruments	51.38		51.65	24.87
Observations	32,053	32,053	32,053	32,053
Panel C: proxying local public expenditure with municipal government's expenditure instrumented with ISP				
Δ(import exposure)	0.0131**		0.0130**	0.0258**
	(0.0065)		(0.0060)	(0.0111)
Δ(local public expenditure)		-0.1448*	-0.1445*	0.1124
		(0.0836)	(0.0844)	(0.1766)
Δ(import exposure)*Δ(local public expenditure)				-2.1510
				(1.5499)
Period FE	Y	Y	Y	Y
Area FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Election years	2001-2013	2001-2013	2001-2013	2001-2013
Estimation method	IV	IV	IV	IV
F-stat excl. instruments	62.68	56.44	28.21	3.70
Observations	20,090	19,779	19,779	19,779

The dependent variable is the average annual change in the populist vote share between two elections. Votes are categorized as populist following Inglehart and Norris (2016). In Panel A local public expenditure is proxied with national figure. In Panel B local public expenditures is proxied with national figure restricted to welfare-related objectives. In Panel C local public expenditure is proxied with municipal government's current expenditure instrumented by ISP (municipalities belonging to the regions with special autonomy are excluded). Standard errors are clustered at the level of 611 local labor markets. * $p<0.1$; ** $p<0.05$; *** $p<0.01$.

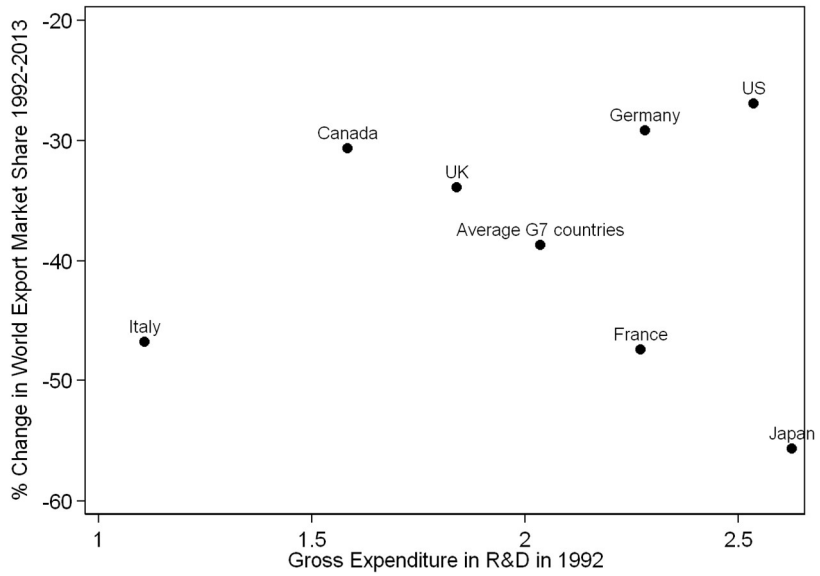
Figure 1: Populism in some Western countries



Western Europe: Aut(2017), Bel(2019), Deu(2017), Esp(2019), Fin(2019), Fra(2017), Gbr(2017), Grc(2015), Ire(2016), Ita(2018), Nld(2017), Nor(2017), Swe(2018)

Note: Vote share won by all populist parties in the last available parliamentary election in France (2017), Germany (2017), Italy (2018), and Western Europe. The latter aggregate includes all countries (except Switzerland) considered in Colantone and Stanig (2018) and is weighted using the 2016 population. Parties are labelled as populist based on the classification by Inglehart and Norris (2016).
Source: Own calculations based on the election datasets http://www.parlgov.org/ and http://elezioni.interno.gov.it/camera/scrutini/20180304/scrutiniCI.

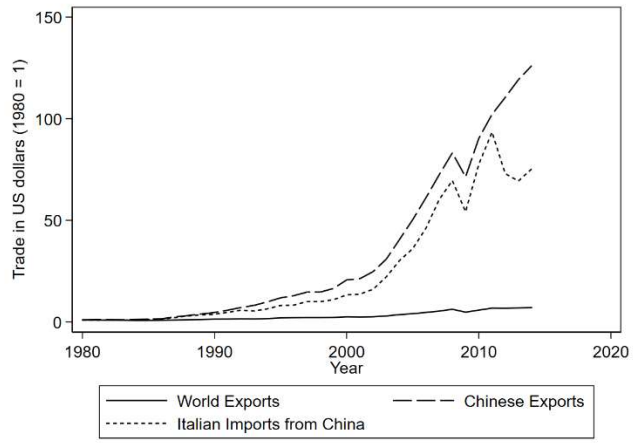
Figure 2: R&D expenditure and worldwide market share dynamics



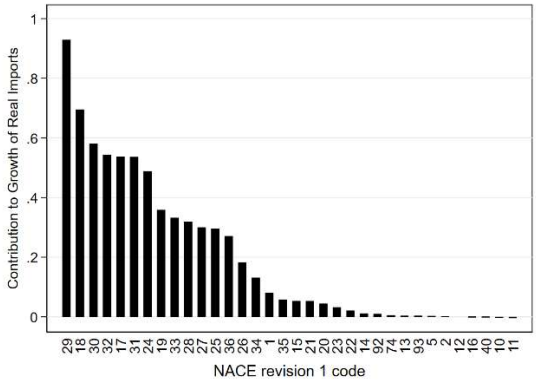
Note: The Group of Seven (G7) includes: Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.
Source: Own calculations based on WTO and OECD data.

Figure 3: Export dynamics

Panel A: Chinese exports

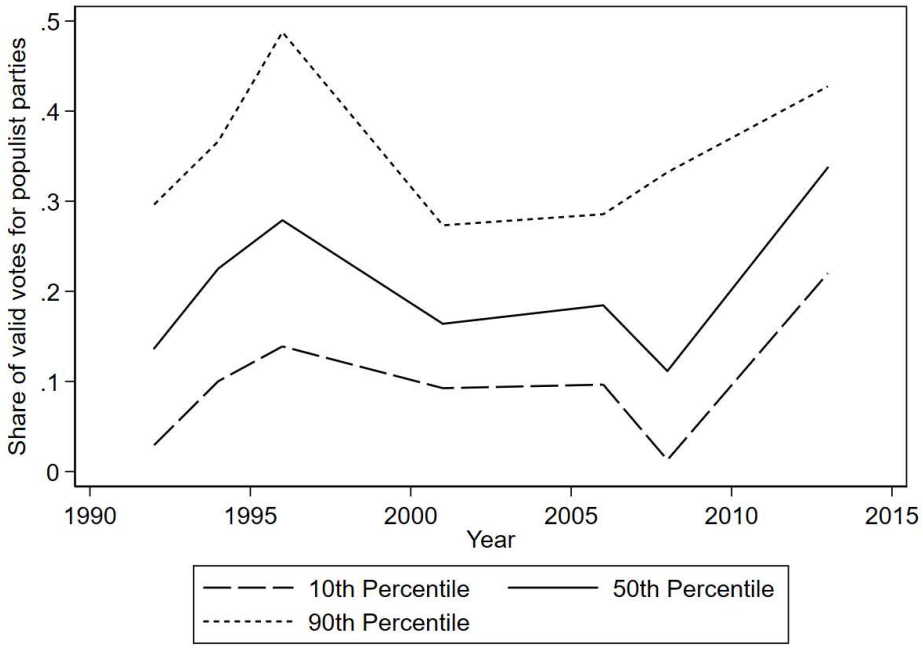


Panel B: Sectoral contribution to the total growth rate of imports from China



Source: Own calculations based on international trade data from the Observatory of Economic Complexity at the IMT Media Lab.

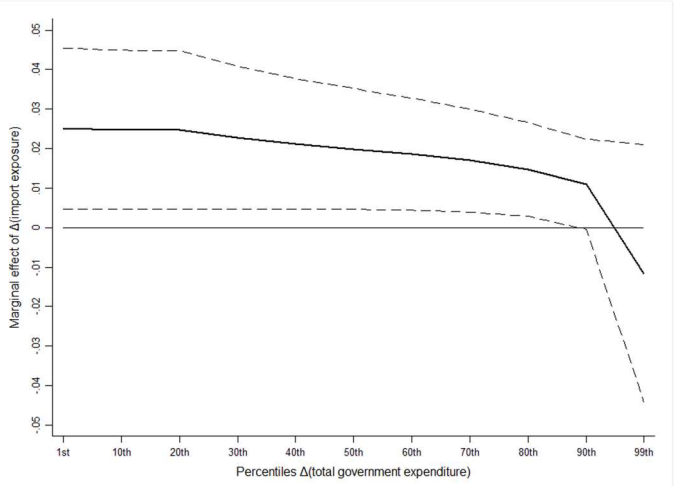
Figure 4: Populism trend



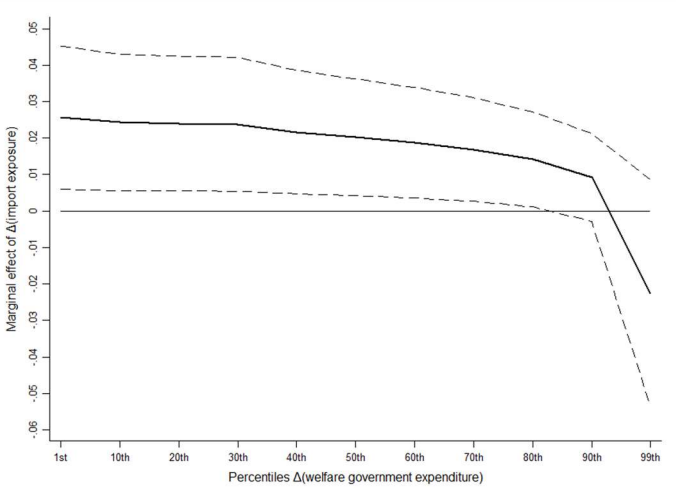
Source: Own calculations based on election data from http://elezionistorico.interno.it/.

Figure 5: Marginal effect of Import competition on populism

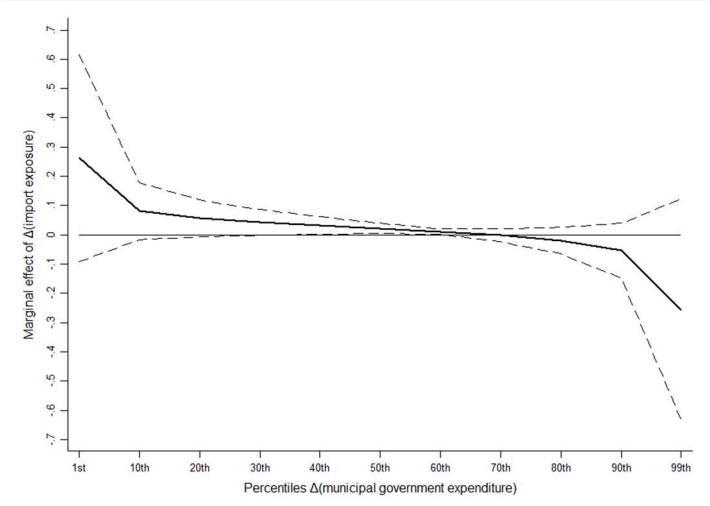
Panel A: proxying local public expenditure with national figure



Panel B: proxying local public expenditure with national figure – only welfare expenditure



Panel C: proxying local public expenditure with municipal government's expenditure instrumented with ISP



Appendix

A. Trade and employment data

Data on imports are taken from the Observatory of Economic Complexity at the MIT Media Lab. We have access to annual bilateral trade flows for 262 countries and 989 different products for the four-digit SITC revision 2 classification over the timespan 1962-2014. Employment at the municipality-sector level is drawn from the Italian Statistical Agency (Istat) for the Census years 1991, 2001 and 2011. Up to 2001 the number of workers in local units of enterprises is based on the two-digit NACE revision 1 breakdown, while for 2011 it is available according to the two-digit NACE revision 2 classification. NACE revision 2 codes have been converted to NACE revision 1 codes using a conversion matrix developed by Perani and Cirillo (2015). The administrative boundaries of Italian municipalities are those used in the Istat 2011 general Census, after controlling for municipality mergers. In order to match trade data with employment data, SITC revision 2 commodities must be matched with NACE revision 1 industrial categories. We use the correspondence table between SITC revision 2 and ISIC revision 3 (equivalent to NACE revision 1 up to two digits) provided by Affendy et al. (2010). Trade values of not-uniquely-mapped goods are assigned to two-digit NACE revision 1 sectors using, firstly, the UN conversion table between SITC revision 2 and SITC revision 3 in combination with the WITS concordance table between SITC revision 3 and NACE revision 1, and then, eventually, national employment shares at the start of each decade (reflecting the initial importance of each sector in the economy). At the end, we are left with international trade data for 34 two-digit NACE revision 1 industries, almost all of them concerning non-service activities (see Table A1). Trade flows for Italy have been deflated by applying the Italian implicit gross value added deflator, taken from the OECD STAN database.

Additional references

Affendy, A. M., Yee L. S., Satoru M. (2010), Commodity-Industry Classification Proxy: A Correspondence Table between SITC Revision 2 and ISIC Revision 3, *MPRA Paper*, 27626.

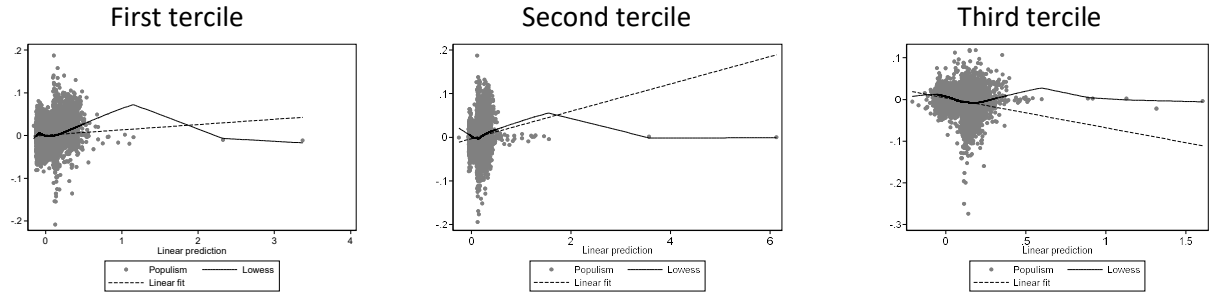
Perani, G., Cirillo V. (2015), Matching Industry Classifications: a Method for converting NACE Rev. 2 to NACE Rev. 1, Working Paper Series in Economics, Mathematics and Statistics, University of Urbino

B. Reliability tests for the interaction models

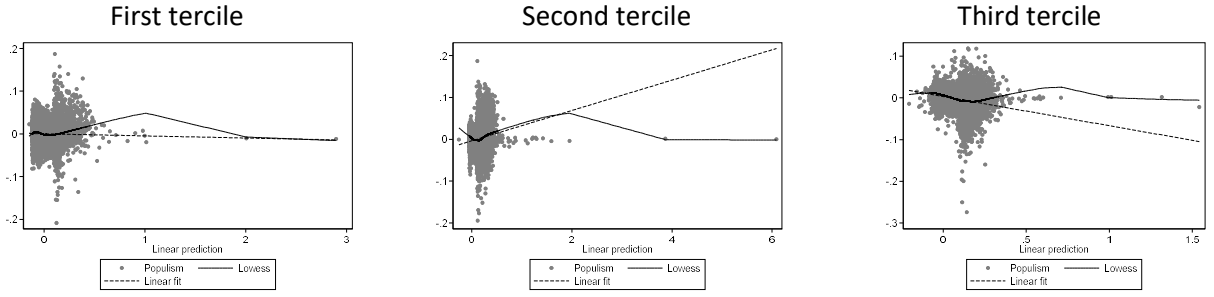
Recently, Hainmueller et al. (2019) have emphasized two desirable properties data should have when using interaction models, such as those whose results are shown in column 4 of Table 6. The first one is linearity: applied to our case, this would mean that the effect of import competition on populism should change linearly with public spending at a constant rate. The second feature is the existence of a common support: it is important that the key independent variable – import competition – spans sufficiently the range of the moderator variable. Hainmueller et al. (2019) also propose a different, more flexible, estimator – the so-called binning estimator – to obtain more credible interaction estimates when the data do not meet the above requirements. In what follows, we perform the diagnostic tests suggested by Hainmueller et al. (2019) on our sample and, eventually, rerun the interaction model using their alternative estimator. Overall, we find that our data meet the linearity requirement while the common support assumption is more problematic. When applying the more flexible estimator, our core results on the role of local public spending in reducing the positive effect of the China shock on populism is broadly confirmed.

Figure A1: Linear interaction diagnostic plots

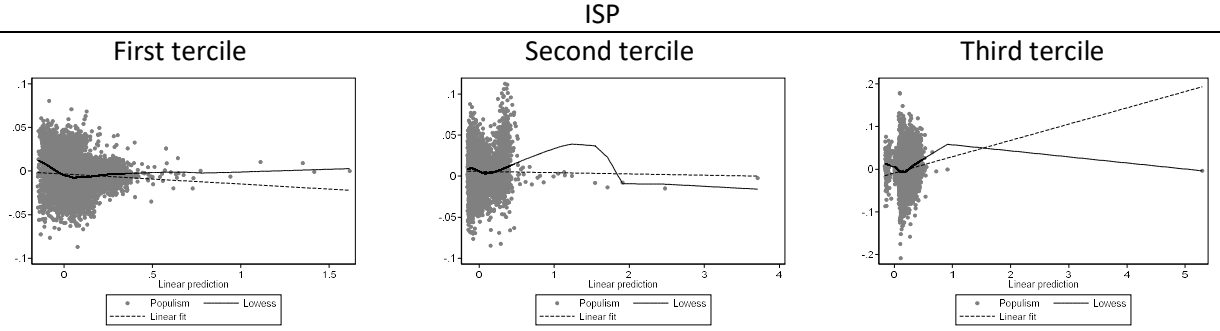
Panel A: proxying local public expenditure with national figure



Panel B: proxying local public expenditure with national figure – only welfare expenditure



Panel C: proxying local public expenditure with municipal government's expenditure instrumented with ISP

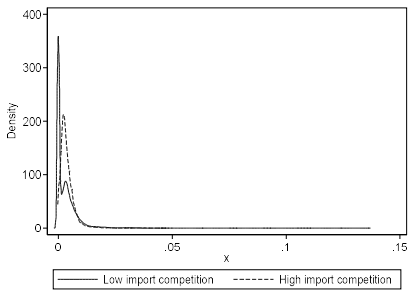


First, we start with the diagnostic test on linearity. In order to take into account the fact that our model adopts an IV strategy, we preliminary residualize the outcome with respect to the covariates different from import competition, local public spending and their interaction (that is variables X and fixed effects δs and γs) and take the fitted value of import competition and of municipality public spending according to their respective first-stage regressions. Then, we split the sample into three groups based on the terciles of local public spending. For each of the three groups, we plot residualized populism against predicted import competition, as well as a linear interpolating line (solid) and a locally weighted regression "Lowess" line (dashed) that would capture any departure from linearity. If the two lines diverge for some tercile of local public spending, then linearity may not hold for the whole range of the moderator variable. Figure A1 shows, on the contrary, that the two lines largely overlaps for all terciles and for all proxies of local public expenditure, except for some outliers of the moderator (to which the locally weighted estimator is more sensitive to), thus reassuring on the validity of the linearity assumption in our data.

Next, we move on to testing the existence of a satisfying common support. To this end, we split the sample according to high/low predicted import competition (above/below the median) and, then, compare the distribution of local public expenditure in both groups by displaying relevant percentiles (Figure A2, left-hand side) and by plotting the density functions (Figure A2, right-hand side). It turns out that the two distributions are quite different, irrespective of the proxy adopted for local public expenditure. It follows that we have not sufficient data on both import competition and local public expenditure to make estimated conditional effects not model dependent. If the model is correctly specified, estimated conditional effects will still be consistent and unbiased despite the common support issue; but if the model happens not to be correct, then resulting estimates would be much less reliable.

Figure A2: Common support diagnostic plots

Panel A: proxying local public expenditure with national figure

	10th perc.	25th perc.	50th perc.	75th perc.	90th perc.	Density function
Low import comp.	-0.0001	-0.0001	0.0012	0.0044	0.0078	
High import comp.	0.0009	0.0019	0.0030	0.0047	0.0069	

Panel B: proxying local public expenditure with national figure – only welfare expenditure

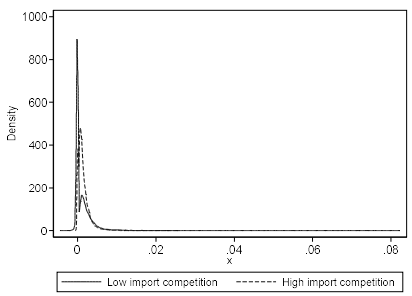
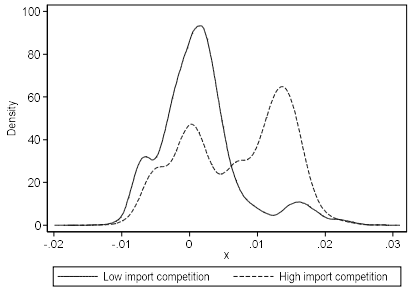
	10th perc.	25th perc.	50th perc.	75th perc.	90th perc.	Density function
Low import comp.	-0.0002	-0.0001	0.0000	0.0018	0.0036	
High import comp.	0.0000	0.0005	0.0010	0.0019	0.0031	

Figure A2 (continued): Common support diagnostic plots

Panel C: proxying local public expenditure with municipal government's expenditure instrumented with ISP

	10th perc.	25th perc.	50th perc.	75th perc.	90th perc.	Density function
Low import comp.	-0.0058	-0.0022	0.0009	0.0038	0.0086	
High import comp.	-0.0039	0.0002	0.0080	0.0135	0.0159	



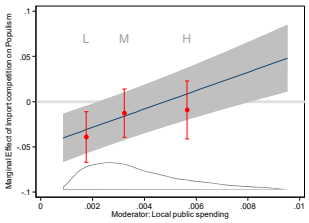
Finally, having failed the common support diagnostic tests, we apply the binning estimator that Hainmueller et al. (2019), which protects against excessive model dependency. Because of computation problems we need to run the analysis separately for each year. Results are reported in Figure A3.

For illustrative purposes, let us consider Panel A, where local public expenditure is proxied by the total national figure used in combination with Input-Output coefficients and local sectoral employment shares. After breaking this measure into three bins (respectively, corresponding to the three terciles: L = low; M = medium; H = High), the method estimates the marginal effect of import competition at the median within each bin, together with vertical bars for the 5% confidence intervals. For the sake of comparability, it also estimates the less flexible linear marginal effect (line with darker confidence intervals). As far as 2001 is concerned (top-left graph), the marginal effect of import competition on populism does not decline with the moderator variable; if any, the relationship seems increasing, but statistical significance is poor. Looking at 2006 data (top-right graph), some decreasing pattern starts emerging but, again, the three estimated marginal effects are statistically indistinguishable from 0. On the other hand, 2008 and 2013 data (bottom-right and bottom left graphs, respectively) are fully consistent with the idea that local public spending reduces the impact of the China shock on populist voting. Estimated coefficients are positive, broadly statistically significant, and declining with the moderator. When examining the last two proxies for local public spending (Figure A3, Panel B and Panel C), the same broad picture emerges: the more flexible binning estimator is consistent with the lenitive role of public intervention, even though the effect is fully driven by the last two elections.

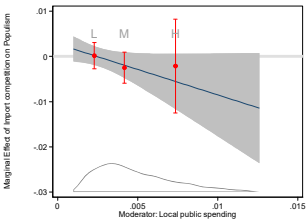
Figure A3: Conditional marginal effects from binning estimator

Panel A: proxying local public expenditure with national figure

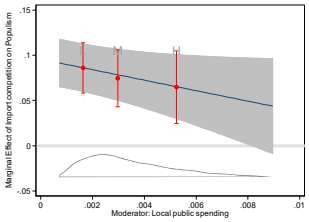
2001



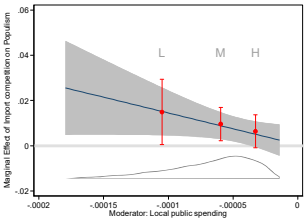
2006



2008

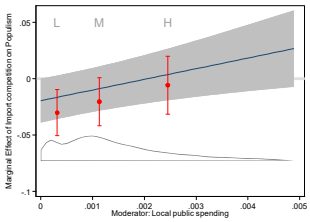


2013

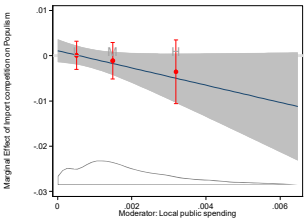


Panel B: proxying local public expenditure with national figure – only welfare expenditure

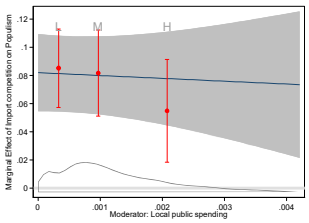
2001



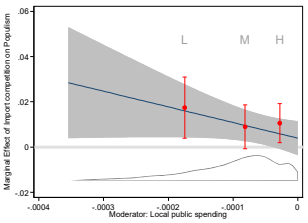
2006



2008

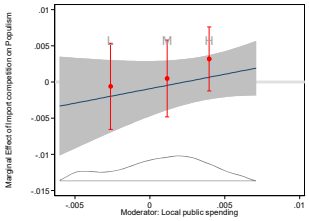


2013

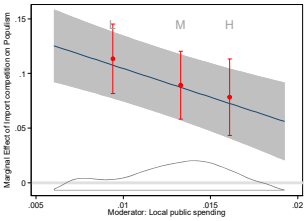


Panel C: proxying local public expenditure with municipal government's expenditure instrumented with ISP

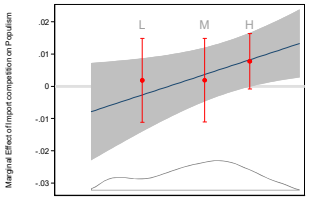
2006



2008



2013



C. Additional tables

Table A1: List of two-digit sectors

Sector (NACE revision 1)	Sector (description)	Import from China (Y/N)	Skill intensity	Dependence on public spending
01	Agriculture, hunting and related service activities	Y		0.003389
02	Forestry, logging and related service activities	Y		0.007937
05	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	Y		0.000000
10	Mining of coal and lignite; extraction of peat	Y		0.000000
11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying	Y		0.000023
12	Mining of uranium and thorium ores	Y		.
13	Mining of metal ores	Y		0.000042
14	Other mining and quarrying	Y		0.000040
15	Manufacture of food products and beverages	Y	0.16	0.000531
16	Manufacture of tobacco products	Y	0.27	0.000354
17	Manufacture of textiles	Y	0.10	0.000432
18	Manufacture of wearing apparel; dressing and dyeing of fur	Y	0.14	0.000035
19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	Y	0.09	0.000642
20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Y	0.08	0.001014
21	Manufacture of pulp, paper and paper products	Y	0.17	0.000492
22	Publishing, printing and reproduction of recorded media	Y	0.34	0.000155
23	Manufacture of coke, refined petroleum products and nuclear fuel	Y	0.31	0.000963
24	Manufacture of chemicals and chemical products	Y	0.41	0.048237
25	Manufacture of rubber and plastic products	Y	0.15	0.001229
26	Manufacture of other non-metallic mineral products	Y	0.14	0.000551
27	Manufacture of basic metals	Y	0.14	0.000202
28	Manufacture of fabricated metal products, except machinery and equipment	Y	0.12	0.000512
29	Manufacture of machinery and equipment n.e.c.	Y	0.16	0.001685

Table A1 (continued): List of two-digit sectors

Sector (NACE revision 1)	Sector (description)	Import from China (Y/N)	Skill intensity	Dependence on public spending
30	Manufacture of office machinery and computers	Y	0.49	0.002532
31	Manufacture of electrical machinery and apparatus n.e.c.	Y	0.21	0.001715
32	Manufacture of radio, television and communication equipment and apparatus	Y	0.36	0.011788
33	Manufacture of medical, precision and optical instruments, watches and clocks	Y	0.38	0.005584
34	Manufacture of motor vehicles, trailers and semi-trailers	Y	0.20	0.004743
35	Manufacture of other transport equipment	Y	0.33	0.013611
36	Manufacture of furniture; manufacturing n.e.c.	Y	0.16	0.000777
37	Recycling	N		0.000978
40	Electricity, gas, steam and hot water supply	Y		0.000286
41	Collection, purification and distribution of water	N		0.034587
45	Construction	N		0.003036
50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	N		0.000124
51	Wholesale trade and commission trade, except of motor vehicles and motorcycles	N		0.006358
52	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	N		0.012795
55	Hotels and restaurants	N		0.003589
60	Land transport; transport via pipelines	N		0.003524
61	Water transport	N		0.003367
62	Air transport	N		0.001645
63	Supporting and auxiliary transport activities; activities of travel agencies	N		0.036170
64	Post and telecommunications	N		0.000353
65	Financial intermediation, except insurance and pension funding	N		0.001055
66	Insurance and pension funding, except compulsory social security	N		0.000010
67	Activities auxiliary to financial intermediation	N		0.000024
70	Real estate activities	N		0.000050
71	Renting of machinery and equipment without operator and of personal and household goods	N		0.000217
72	Computer and related activities	N		0.004914

Table A1 (continued): List of two-digit sectors

Sector (NACE revision 1)	Sector (description)	Import from China (Y/N)	Skill intensity	Dependence on public spending
73	Research and development	N		0.314709
74	Other business activities	Y		0.000539
75	Public administration and defence; compulsory social security	N		0.982200
80	Education	N		0.779812
85	Health and social work	N		0.717289
90	Sewage and refuse disposal, sanitation and similar activities	N		0.035587
91	Activities of membership organizations n.e.c.	N		0.014076
92	Recreational, cultural and sporting activities	Y		0.116543
93	Other service activities	Y		0.115998
95	Private households with employed persons	N		0.000000
99	Extra-territorial organizations and bodies	N		.

Table A2: List of populist parties by election based on Inglehart and Norris' (2016) list, after tracing parties back in time

Election year	Parties labelled as populist
1992	Italian Social Movement – National Right (*Movimento Sociale Italiano – Destra Nazionale*); Lombard League (*Lega Lombarda*)
1994	Northern League (*Lega Nord*); National Alliance (*Alleanza Nazionale*)
1996	Northern League (*Lega Nord*); National Alliance (*Alleanza Nazionale*); Social Movement – Tricolor Flame (*Movimento Sociale – Fiamma Tricolore*)
2001	Northern League (*Lega Nord*); National Alliance (*Alleanza Nazionale*); Tricolor Flame (*Fiamma Tricolore*)
2006	Northern League (*Lega Nord*); National Alliance (*Alleanza Nazionale*); Tricolor Flame (*Fiamma Tricolore*)
2008	Northern League (*Lega Nord*); The Right – Tricolor Flame (*La Destra – Fiamma Tricolore*)
2013	Northern League (*Lega Nord*); Tricolor Flame (*Fiamma Tricolore*); The Right (*La Destra*); Brothers of Italy – National Alliance (*Fratelli d'Italia – Alleanza Nazionale*); Five Star Movement (*Movimento 5 Stelle*)

Table A3: List of populist parties by election according to Timbro

Election year	Parties labelled as populist
1992	Italian Social Movement – National Right (*Movimento Sociale Italiano – Destra Nazionale*); Lombard League (*Lega Lombarda*); Communist Refoundation Party (*Partito Della Rifondazione Comunista*)
1994	Northern League (*Lega Nord*); Communist Refoundation Party (*Partito Della Rifondazione Comunista*)
1996	Northern League (*Lega Nord*); Social Movement – Tricolor Flame (*Movimento Sociale – Fiamma Tricolore*); Communist Refoundation Party (*Partito Della Rifondazione Comunista*)
2001	Northern League (*Lega Nord*); New Force (*Forza Nuova*); Tricolor Flame (*Fiamma Tricolore*); Communist Refoundation Party (*Partito Della Rifondazione Comunista*); Party of Italian Communists (*Partito Dei Comunisti Italiani*)
2006	Northern League (*Lega Nord*); Tricolor Flame (*Fiamma Tricolore*); Die Freiheitlichen; Communist Refoundation Party (*Partito Della Rifondazione Comunista*); Party of Italian Communists (*Partito Dei Comunisti Italiani*)
2008	Northern League (*Lega Nord*); The Right – Tricolor Flame (*La Destra – Fiamma Tricolore*); Die Freiheitlichen; New Force (*Forza Nuova*); The Left – The Rainbow (*Sinistra Arcobaleno*); Workers' Communist Party (*Partito Comunista Dei Lavoratori*); Critical Left (*Sinistra Critica*)
2013	Northern League (*Lega Nord*); Tricolor Flame (*Fiamma Tricolore*); The Right (*La Destra*); Brothers of Italy – National Alliance (*Fratelli d'Italia – Alleanza Nazionale*); Five Star Movement (*Movimento 5 Stelle*); Casapound; Die Freiheitlichen; New Force (*Forza Nuova*); Civil Revolution (*Rivoluzione Civile*); Workers' Communist Party (*Partito Comunista Dei Lavoratori*)

Table A4: Yearly coverage of the ISP

Year	Covered Municipalities
1999-2000	All
2001-2012	Above 5,000 inhabitants
2013	Above 1,000 inhabitants