Guglielmo Barone, University of Padova and RCEA
Helena Kreuter, FiFo Institute for Public Economics, University of Cologne

LOW-WAGE IMPORT COMPETITION AND POPULIST BACKLASH: THE CASE OF ITALY

October 2019

Marco Fanno Working Papers - 241

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

Guglielmo Barone and Helena Kreuter♦

Abstract. The surge of populism in many advanced countries calls for the analysis of its causes. In this paper, we empirically study the role of trade globalization in shifting the electoral base toward populism. We proxy trade shock with swiftly rising import competition from China and compare the voting pattern at the parliamentary national elections from 1992 to 2013 in about 8,000 Italian municipalities differently exposed to the trade shock. We instrument import competition with Chinese export flows to other high-income countries and estimate the model in first differences. Our results show that trade globalization increases support for populist parties; they are robust to a large number of sensitivity checks. Moreover, we show that voters' protest reaction also takes the form of an increase in invalid ballot papers and a drop in turnout. To rationalize these findings, we further offer evidence that import competition worsens labor market conditions – higher unemployment and lower income – and is associated with a rise in inequality, as predicted by trade theory.

Keywords: trade globalization, populism, inequality.
JEL classification: D72, F60.

♦ Guglielmo Barone: University of Padua and RCEA, guglielmo.barone@unipd.it; Helena Kreuter: FiFo Institute for Public Economics, University of Cologne, kreuter@fifo-koeln.de. We thank Gaia Narciso, Massimo Riccaboni, the seminar participants at the Bank of Italy, KU Leuven and IMT Lucca for their useful comments, and Sauro Mocetti for providing us with data on income distribution.

1. Introduction

In many developed Western societies, populism is on the rise at an alarming pace. 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: in Italy, France, Germany, the Netherlands, Austria, and the Czech Republic, populist parties recently achieved large electoral support at general polls. The growing concern about their success has given rise to a widespread debate on the causes of the populist backlash in the Western World.

Trade globalization is one of the key candidate economic determinants, the channels at work being labor market adjustments. Autor et al. (2013) 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. This mechanism captures the widely held perception of the redistributive effect of trade globalization *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), as Rodrik (2018) recently pointed out.[1]

In this paper, we empirically study the role of trade globalization in moving the equilibrium of the political game toward populism. 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, Chinese import competition proxies for trade globalization (Autor et al., 2013; Autor at al., 2016). The populist vote is computed by relying on the classification of populist parties provided in Inglehart and Norris (2016).

The identification of a causal effect requires dealing with the potential endogeneity of import exposure, which may arise from various sources. For example there may be omitted municipality-time level unobserved shocks like a sectoral, asymmetric, negative shock to local manufacturing industries that may attract imports from China and, at the same time, induce a populist reaction

[1] Rodrik (2018) refers to the theorem in Stolper and Samuelson (1941), which entails very neat distributional implications from opening up to trade. Assuming a two-good and two-factor model of production, with no frictions in the inter-sectoral mobility of inputs, trade liberalization makes the factor that is used intensively in the importable good worse off, by inducing a decline in its payment. If the two factors are skilled and unskilled labor, the prediction for rich countries would be that trade increases the return to skilled labor and lowers the return to unskilled labor, so raising income inequality. Beyond theoretical arguments, Rodrik (2018) suggests also that the populist backlash is not a surprise in light of economic history: the first era of globalization started in the second half of the nineteenth century, led to the emergence of history's first self-conscious populist movement in the US rallying against the Gold Standard and ended in the first half of the twentieth century with the spread of communism, fascism and nazism. See Harrison et al. (2011) for a survey on the effects of trade on inequality.

among voters; this would bias the OLS parameter upward. Moreover, the populist vote may result in protectionist policies that reduce import flows: in such a case reverse causality would lead to a downward bias. Finally, we can not exclude that we are measuring trade shock with some errors. To address the possible endogeneity issue, we instrument imports from China with Chinese exports to a set of other non-euro high-income countries that represent a small share in Italy's total trade. The instrument is intended to capture only the push factor underlying the Chinese export performance; at the same time, it involves economies only weakly connected to Italy in terms of trade, so minimizing the risk of invalidating the exclusion restriction assumption.

Our results show that exposure to Chinese import competition enlarges support for populist parties: the IV preferred specification indicates that 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 robustness checks, including measurement of the trade shock and the classification of populist parties. Moreover, it holds when we augment our regression with potential confounding factors that may have spurred populism in recent years: immigration, the introduction of the euro and fiscal austerity. Additional findings show that voters' protest reaction also takes the form of an increase in invalid (blank and null) ballot papers and a drop in voter turnout. To rationalize our results, we finally show that Chinese import competition has negatively affected employment and income, so signaling that globalization has had a redistributive role *between* countries. Moreover, we also detect a positive effect on income inequality, signaling that winners and losers from globalization also emerge *within* the country under scrutiny.

Our paper is related to the empirical literature on the political consequences of globalization. Within this literature, Autor et al. (2016) is the seminal paper looking at role of rising exports from China on political polarization: the Chinese import shock affects the ideological composition of the US Congress, with politicians moving toward the very left or the very right of the political spectrum. More closely related to our analysis are four, mostly unpublished, contributions, those by Dippel at al. (2017), Malgouyres (2017), Caselli et al. (2018) and Colantone and Stanig (2018). While adopting the same methodology to measure import exposure, they basically differ in the countries examined and share the result that import competition from low-wage countries increases voting for far-right parties.[2]

An important but less related reference is the research agenda shedding light on the determinants of populism. While some scholars propose a cultural backlash hypothesis to explain today's

[2] Dippel et al. (2017) study German NUTS 3 regions (slightly more than 400 *Landkreise*) from 1987 to 2009 ; Malgouyres (2017) focuses on small French communities (about 3,500 cantons) from 1995 to 2012; Caselli et al. (2018) use labor market areas (over 600 units) as main unit of analysis from 1994 to 2008; finally, Colantone and Stanig (2018) (the only published paper) combine district-level voting data and European NUTS 2 region-level trade data between 1988 and 2007.

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 the financial crisis of 2008-2013 (e.g. Guiso et al., 2019; Algan et al., 2017; Dustman et al., 2017).

We contribute to the existing literature in many respects. First, as Caselli et al. (2018), we consider the Italian case, which is particularly interesting for three reasons. (*i*) Italy displays by far one of the highest vote shares for populist parties among large rich countries, according to the data recorded in the most recent elections (Figure 1). (*ii*) Since the nineties, Italy's imports from China have increased at an impressive average rate, comparable to that of other similar countries; however, at the same time, the beginning-of-period Italian product specialization model was more heavily centered on the less technologically advanced sectors (e.g., textile, apparel, leather, footwear, furniture) with respect to Western competitors, so making the country more vulnerable to the China shock. In Figure 2, we show that in 1992 the Italian economy spent a largely smaller share of its GDP on research and development than other highly industrialized countries and that the Italian loss in worldwide export market shares over the 1992-2013 period was larger than the average. (*iii*) Populism makes sound economic policies more difficult to implement, even if populist parties are not in power, because non-populist parties tend to react to populism by reducing the distance of their platform from that of their populist competitors (Guiso at al., 2017). In this respect, Italy is one of the Western developed countries that has more urgently needed structural, but often unpopular, reforms to spur growth during the last 15-20 years: see Imf (2017), Oecd (2017). On the other hand, we think that lessons from the Italian case may well be informative about other developed countries.

Second, we focus on populism as a voting outcome, rather than on extreme right parties. It is increasingly recognized that certain core features of populist parties are not necessarily prototypical of a radical right party. From an empirical point of view, the two variables do not necessarily coincide and the Italian case is very suitable to distinguish between them. The Five Star Movement, in fact, is a large political party that is labelled as populist by all the prevailing classifications, but, at the same time, cannot be placed along the usual right-left dimension of the political spectrum (Bordignon and Ceccherini, 2015). Not surprisingly, the correlation in our data between the vote share for extreme-right parties and the vote share for populist parties is far from being perfect (-0.26)[3].

Third, our paper is the first to address the very important issue of the robustness of the results to concurrent factors that are likely to have contributed to the rise of populism: immigration, the introduction of the euro in the late nineties and the recent measures of fiscal austerity implemented in the euro area.

[3] We identify as extreme right parties: Italian Social Movement – National Right (*Movimento Sociale Italiano – Destra Nazionale*); Social Movement – Tricolour Flame (*Movimento Sociale – Fiamma Tricolore*); Tricolour Flame (*Fiamma Tricolore*); New Force (*Forza Nuova*); National Front (*Fronte Nazionale*); Social Alternative (*Alternativa Sociale*); National Right (*Destra Nazionale*); The Right – Tricolour Flame (La Destra – Fiamma Tricolore); Casapound Italy (*Casapound Italia*); National Project (*Progetto Nazionale*); Italian Missinian Refoundation (*Rifondazione Missina Italiana*).

Fourth, we explore possible mechanisms behind the causal effect of globalization on populism by focusing on labor market adjustments, and by showing that the increase in *within*-country income inequality goes hand in hand with the distributional frictions *between*-countries.

The rest of the paper is organized as follows. The next Section discusses data and measurement issues, while Section 3 describes our empirical strategy. In Section 4, we present our core findings on the effect of trade shock on populism (and other forms of protest vote), while Section 5 is devoted to showing our results on the labor market transmission channel. Section 6 concludes.

2. Data and measurement issues

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*.

Data on imports 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. 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.[4] 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

[4] If, over time, two municipalities have been merged together, their respective figures are added.

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.

Figure 3a 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 3b, 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 rev. 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 at national polls come from the Ministry of Interior and are available at the municipality level (around 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 Deputies, our focus is specifically on the national elections for the lower house of the legislature.[6] Finally, over the years under scrutiny, the electoral rules changed, with a different mix of parliamentary seats assigned by majoritarian rule or by proportional rule. In all elections, we focus on 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), who take Mudde's (2007) very influential contribution as a basis. Mudde (2007) suggests that populism presents the following 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

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

[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.

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. Inglehart and Norris (2016) bring these ideas to the data by exploiting the 2014 Chapel Hill Expert Survey (CHES) in which 337 political scientists rate the positioning of 268 parties (those with seats in parliaments) in 31 European countries on a number of different policy issues.[7] Experts' answers are mapped into a score and a party is evaluated as populist if its scores on those items related to anti-establishment sentiment, popular will, nationalism, and traditional values are above a given threshold. Italian parties coded as populist, available only for 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 list has two limitations: it does not cover the full spectrum of Italian political forces (those that did not win any seat at the Parliament) and, more importantly, it does not take into account political forces involved in the elections before 2013. Hence, we properly integrate the list by tracing the 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-Fiamma Tricolore*), Brothers of Italy (*Fratelli d'Italia*), and the Five Star Movement (*Movimento Cinque Stelle*). Table A2 in the Appendix reports the year-by-year list of populist parties considered in this paper.

Inglehart and Norris (2016)'s categorization is not the only one. Van Kessel (2015) proposes a competing classification, adopted in Guiso et al. (2017), whose main advantage is that the populist party classification covers many years. However, differently from Inglehart and Norris' (2016) classification, van Kessel's (2015) approach captures only one of the three dimensions (the anti-elite rhetoric) that Mudde (2007) highlights. On the other hand, the drawback with Inglehart and Norris's (2016) classification – i.e., the fact that it is time-invariant – is not very relevant in our case as we focus only on a single country and, therefore, recovering the time dimension of the data is straightforward.[8] The main difference between the two classifications is that van Kessel (2015) labels as populist the parties headed by Berlusconi (*Forza Italia* and the People of Freedom – *Popolo delle libertà*), but not all post-fascist parties (the National Alliance, the Italian Social Movement, the Tricolor Flame, the Right-Tricolor Flame, Brothers of Italy). Anyway, we show that our results are robust either when we adopt the definition of van Kessel (2015) or when we enlarge our notion to include the parties in the coalitions led by Berlusconi.

Figure 4 shows the increasing overall 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),

[7] They include 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] As far as Italy is concerned, the categorization in Rodrik (2018) coincide with that of van Kessel (2015).

dipping to slightly below 15 percent in 2008. Finally, in the 2013 election, the populist parties nearly tripled their share. The figure also shows large variability in populism across municipalities.

3. Empirical strategy

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

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

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 (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-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.[9] Table 1 shows the main descriptive statistics.

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 municipality labor markets 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 upward biased. On the other hand, reverse causality may generate downward bias if populism gives rise to protectionist measures, and measurement error might be at work as well.

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

$$Z_{it} = \sum_k \frac{L_{ikt_0}}{L_{it_0}} \frac{\Delta M_{kt}^{OTHER}}{L_{kt_0}}. \quad (3)$$

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

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

countries that exhibit high growth rates of trade with China over the last decades, but whose average share in total Italian trade was below 1 per cent between 1992 and 2013: Norway, Denmark, Australia, Canada, Iceland and New Zealand.[10] 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 selected high-income countries that are weakly integrated (in trade terms) with Italy.

4. 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 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 China imports yearly change (about 145 dollars per worker at 2000 prices) entails a rise in the 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. As outlined in Section 2, 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 coalition led by Berlusconi – results are confirmed (column 1). We also check for the robustness of our classification to the inclusion of Berlusconi's and his allies' parties and, again, the test is reassuring

[10] 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.

(column 2). We computed the populist vote share by including in the denominator valid votes for all parties, while the currently available classification of populist political forces does not scrutinize minor parties (those with no seats in the Parliament; see Section 2). In column 3, we re-compute the populist vote share with respect only to 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.[11] In our sample period, imports from these countries rose by an average of 9.9 percent per year, only slightly below the Chinese figure (10.3). Hence, we redefine ΔIC_{it} in (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 4 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 meet this requirement fully. 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 (1) by including in ΔM_{kt}^{ITA} also imports from China to Italy's top five export destinations in 1992.[12] The estimated effect of the trade shock continues to hold (column 5). Still, a further issue with the trade exposure indicator regards the normalization of the change in imports from China. In the baseline 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 6, 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. (2016). 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 7, we substitute net Italian imports from China (imports – exports) for ΔM_{kt}^{ITA} and the main result is unaffected.

Finally, the remaining four columns in Table 3 deal with some 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

[11] 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 the 1980s, they represented 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.

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

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 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 8, we document that our findings are robust to the exclusion of the 1992 election from the sample. Column 9 is concerned with the spatial units of analysis. As stated in the Introduction, we argue that our very detailed breakdown allows us to exploit a very large portion of variability. However, this might come with a cost: spillover effects among municipalities might be at work. 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, spillover 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 around 97,000 inhabitants), which are much more self-contained units than municipalities as their boundaries are defined on the basis of daily commuting patterns, so minimizing the risk of spillover effects. Again, our key estimate is confirmed. In column 10, we augment the baseline specification with area × trend 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 ten-year first differences 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. In our data the average length of first differences is 3.5 years, lower than in Dippel et al. (2017) and in Malgouyres (2017) (11 and 5.7 years, respectively). In column 11, we replicate the benchmark regression only for elections held in 1992, 2001, and 2013 (those nearest to the Census years): results are qualitatively similar to the full-sample case.

Confounding factors. So far, we have shown that China's surge in international trade has favored the spread of populism. However, import competition from low-wage countries may be only part of the story: during the period under examination, three concurrent shocks may also have induced a populist reaction in the Italian electorate. The first is the other major facet of the ongoing globalization process, namely the increasing international migration toward 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 Five Star Movement and by the Northern League – the end of competitive currency devaluation harmed Italian exporters, generating unemployment in exporting sectors. The third shock is the fiscal consolidation that took place in Italy during the sovereign debt crisis and culminated in the fiscal compact package passed by the Italian Parliament in 2012. Here, the populist argument is that the Italian recession, or its unsatisfying recovery rate during or after the sovereign debt crisis, depends in a nondemocratic way on the will of unknown, not-elected bureaucrats working for the European Union who apply rigid fiscal rules that ultimately harm people's well-being. In all three cases, there exist competing factors that might be captured by trade globalization.

In Table 4, we address this issue by including in the right-hand side of equation (2) proxies for the confounding factors to see whether our results on import competition will survive.

The role of immigration is taken into account with:

$$\Delta\left(\frac{Immigrants}{Natives}\right)_{it}$$

that is the annual average change of the share of immigrants over native population at the municipality-year level. Data come from Istat and refer to regular immigrants. Unfortunately, this variable is available only from 2001 onwards. The expected sign is positive.

Exposure to the euro is measured as follows:

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

$\Delta REER_t$ 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.[13] The expected sign is positive.

Exposure to fiscal austerity is given by:

$$\sum_k \frac{L_{ikt_0}}{L_{it_0}}\rho_k I_{[t\geq 2 \quad]}$$

$I_{[t\geq 2012]}$ is a dummy variable equal to one since 2012, the year in which the Fiscal Compact came into force in Italy. This country-level fiscal shock is apportioned to industries according to their dependence on public spending. Specifically, ρ_k is the share of the final demand for products from sector *k* incurred by the public administration, as it results from the 2005 Input-Output accounts released by Istat. Municipality-level vulnerability is derived again, in parallel with equation (1), by exploiting the local heterogeneity in the employment industry mix. The expected sign is positive.

A general overview of Table 4 is largely reassuring: the effect of import competition is always positive and statistically significant so signaling that our key regressor is not picking up the impact of some confounding factor. In more detail, the first three columns show that the confounders enter the regression with the expected (positive) sign even if the estimation of the immigration

[13] The summation is over manufacturing sectors, the only ones for which the skill intensity is available.

parameter lacks precision. In the last two columns, we enter all confounding factors simultaneously and, again, our estimates are largely confirmed.[14]

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 toward populist parties, but also have triggered some other forms of protest vote. Table 5 parallels Table 2; Panel A shows the results of regression (2) with the average annual change of the share of invalid (blank and null) ballots as the dependent variable. It turns out that import competition exerts a positive and highly significant effect on invalid ballots, which is known to be an alternative manner of protesting against politics and politicians. In Panel B, we replicate the same exercise using average annual change in voter turnout – a well-celebrated determinant of the quality of the democratic process – as the outcome variable and find a negative and significant effect. In both cases, the economic size of the impact is non-negligible: the estimates reported in the last columns imply that a one-standard deviation increase in the change of the trade shock implies a variation in the dependent variables that is 7 percent (for invalid ballots) or 5 percent (for turnout) of the respective standard deviations.

5. Labor market as the transmission channel

We have established that the rise in Chinese trade 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 test whether these channels are at work in our case study. In Table 6, column 1, we report again our baseline estimate on the effect of import competition from China on populism. In column 2 we assess the between-country channel by testing 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 (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} are defined as above. We find a negative and significant impact of

[14] Because of the data limitation stated above, regressions including immigrants are run using only elections from 2001 onwards. Even in this subsample, the trade shock in the benchmark specification has a positive and statistically significant parameter (0.0132, standard error 0.0062).

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. These results suggest 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]

We are also able to study how the exposure to China affects income thanks to confidential data on average income levels at the municipality level provided by the Ministry of Economy and Finance. Income data are based on tax records and are available for the years from 2003 to 2014.[16] After adjusting data for tax evasion, the estimating equation is analogous to previous ones and reads as:[17]

$$\ln(income)_{it} - \ln(income)_{it-1} = \beta \Delta IC_{it} + X'_{it_0}\gamma + \delta_t + \gamma_{r(i)} + \varepsilon_{it}. \quad (5)$$

Columns 3 and 4 in Table 6 preliminarly show that our results on populism and on employment, respectively, hold in the 2000s too. In column 5, we document that the China import shock exerts a negative effect also on income. This result further supports the evidence on the between-country effect of trade globalization, though the size of the impact is smaller than in the case of employment: the standardized beta is 0.01.

Our last result is about the distributive effect of trade within country. Theory suggests that in developed countries trade can be detrimental/beneficial to low-/high- skilled workers. Our empirical framework can accommodate the test for this prediction: if it is true, one should observe an increase in wage inequality at the municipality-year level. We test this implication by exploiting the same confidential data on income, which include also consistent data on the Gini index. The estimation approach follows model (5) except that our dependent variable is the annual change in the Gini index.[18] Column 6 in Table 6 indicates that import competition has a positive and significant impact on income inequality.

6. Conclusions

[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 than those reported in Table 7.

[16] Unfortunately available data refer to average income and not to wages. Then, assuming that the impacts of import competition on sources of income different from wage (e.g. rents, capital gains, etc.) are lower, our findings are to be considered as a lower bound for the effect on wage.

[17] Tax evasion is imputed using Marino and Zizza (2008) who compare Italian data from survey data with those from official tax records to propose tax evasion rate by gender, age, geographical area, job type (employee, self-employed, etc.). We map these rates into municipalities by means of their composition in terms of the same variable using data from the 2001 census. Then we correct original data by dividing them by 1 – (imputed tax evasion rate).

[18] 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).

In recent years, populist parties have seen a surge in support in Western developed countries. We focus on the Italian case – one the most affected countries – and show that trade competition from low-wage countries and, in particular, from China contributes to causally explain the populist backlash. This result is confirmed after a number of robustness checks, including taking into account the competing role of immigration, the end of competitive devaluation, and the introduction of the fiscal compact. We further show that that protest vote also takes the form of an increase in invalid votes and a drop in voter turnout. To rationalize these findings, we analyze the labor market effect of the China shock and find that it lowers employment and income and is positively correlated with income inequality, consistently with predictions from trade theory: the "Great Convergence" among countries went hand in hand with the "Great Divergence" within countries. More generally, and from a policy perspective, our results point to the deep root of the success of populist parties in Italy and suggest that fighting economic insecurity would be an effective tool to limit populist backlash.

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.

Algan Y., Guriev S., Papaioannou E., Passari E. (forthcoming), The European Trust Crisis and the Rise of Populism, *Brookings Papers on Economic Activity*.

Autor D. H., Dorn D., Hanson G. H. (2013), The China syndrome: Local labor market effects of import competition in the United States, *American Economic Review*, 103, 2121-2168.

Autor D. H., Dorn D., Hanson G. H., Majlesi K. (2016), Importing Political Polarization? The Electoral Consequences of Rising Trade Exposure, *NBER Working Paper*, 22637.

Baldwin, R (2016), The Great Convergence, Cambridge, Harvard University Press.

Bordignon F., Ceccherini L. (2015), The Five-Star Movement: a hybrid actor in the net of state institutions, *Journal of Modern Italian Studies*, 20, 454-473.

Bugamelli M., Schivardi F., Zizza R. (2010), The Euro and Firm Restructuring, in *Europe and the Euro* (Alesina A., Giavazzi F. eds), The University of Chicago Press, Chicago and London.

Colantone I., Stanig P. (2018), The Trade Origins of Economic Nationalism: Import Competition and Voting Behavior in Western Europe, *American Journal of Political Science*, 62, 936-953.

Dal Bò E., Finan F., Folke O., Persson T., Rickne J. (2018), Economic Losers and Political Winners: Sweden's Radical Right, Mimeo.

Dippel C., Gold R., Heblich S., Pinto R. (2017), Instrumental Variables and Causal Mechanisms: Unpacking The Effect of Trade on Workers and Voters. *NBER Working Paper*, 23209.

Dustmann C., Eichengreen B., Otten S., Sapir A., Tabellini G., Zoega G. (2017), Europe's Trust Deficit: Causes and Remedies, *Monitoring International Integration 1*, CEPR Press.

Guiso L., Herrera H., Morelli M., Sonno T. (2017), Demand and Supply of Populism, *CEPR Discussion Paper*, DP11871

Guiso L., Herrera H., Morelli M., Sonno T. (2019), Global Crises and Populism: The Role of Eurozone Institutions, *Economic Policy*.

Harrison A., McLaren J., McMillan M. (2011), Recent Perspectives on Trade and Inequality, *Annual Review of Economics*, 3, 261–289.

IMF (2017), Italy: Staff Report for the 2017 Article IV Consultation, *IMF Country Report*, 17/237.

Inglehart R. F., Norris P. (2016), Trump, Brexit, and the Rise of Populism: Economic Have-Nots and Cultural Backlash, *Harvard Kennedy School RWP*, 16-026.

Malgouyres M. (2017), Trade Shocks and Far-Right Voting: Evidence from French Presidential Elections, *EUI Working Paper RSCAS*, 2017/21.

Marino M. R., Zizza R. (2008), L'evasione dell'Irpef: una stima per tipologia di contribuente, Mimeo.

Moretti E. (2012), The new geography of jobs, Houghton Mifflin Harcourt, New York.

Mudde C. (2007), Populist Radical Right Parties in Europe, Cambridge University Press, NY.

OECD (2017), OECD Economic Surveys: Italy 2017, OECD PUBLISHING, Paris.

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

Rodrik D. (2018), Populism and the economics of globalization, *Journal of International Business Policy*, 1.

Stolper W., Samuelson P. A. (1941), Protection and Real Wages, *Review of Economic Studies*, 9, 58-73.

van Kessel S. (2015), Populist Parties in Europe. Agents of Discontent?, Palgrave MacMillan, London.

Tables and figures

Table 1: Descriptive statistics

Variable	Definition	Unit	Years/Periods	Mean	Sd	Min	Max
Key regressor:							
Δ(import exposure)	average annual change in imports per worker	kUS$, 2000	1992-1994, 1994-1996, 1996-2001, 2001-2006, 2006-2008, 2008-2013	0.062	0.145	-1.526	6.079
Instrumental variable:							
IV Δ(import exposure)	average annual change in imports per worker	kUS$, 2000	1992-1994, 1994-1996, 1996-2001, 2001-2006, 2006-2008, 2008-2013	0.198	0.487	-2.971	52.459
Dependent variables:							
Δ (I&N Populist Vote Share)	average annual change in (populist votes / valid votes); populist votes according to Inglehart and Norris (2016)	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 Share)	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 Share)	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 (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	2011	0.080	0.272	0	1
Measure of Territorial Roughness	(max altitude – min altitude) / √(surface km2/π)	meters	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 estimation

	(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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		Measuring populism			Measuring import competition				Others		
	van Kessel	I&N & Berlusconi	I&N Parl. Seats	Imports from more countries	Imports to more countries	Norm. init. asbsorb.	Net imports	Exclude 1992	LLMs	Area* trend FE	Decadal first difference
Δ(import exposure)	0.0137	0.0136	0.0353	0.0159	0.2131	0.1117	0.0009	0.0151	0.0718	0.0133	0.0092
	(0.0043)***	(0.0043)***	(0.0105)***	(0.0041)***	(0.1038)**	(0.0539)**	(0.0001)***	(0.0058)***	(0.0182)***	(0.0039)***	(0.0038)**
First Stage:											
IVΔ(import exposure)	0.1165	0.1165	0.1165	0.1953	0.0136	0.0819	0.0042	0.1123	0.1740	0.1131	0.1306
	(0.0177)***	(0.0177)***	(0.0177)***	(0.0381)***	(0.0004)***	(0.0017)***	(0.0000)***	(0.0164)***	(0.0477)***	(0.0164)***	(0.0050)***
F-stat excl. instruments	43.07	43.07	43.07	26.34	1356.71	2342.62	75870.36	47.16	13.32	47.65	676.04
Period FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	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	1992-2013	1992-2013	1992, 2001, 2013
Estimation method	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV
Observations	48,072	48,072	48,072	48,072	48,072	48,072	48,072	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), except for column (1) in which we follow van Kessel (2015) and column (2) in which we include the coalitions led by Berlusconi in the original Inglehart and Norris (2016)'s classification. Standard errors are clustered at the level of 611 local labor markets. * $p<0.1$; ** $p<0.05$; *** $p<0.01$.

Table 4: Confounding factors

	(1) Immigration	(2) Euro	(3) Austerity	(5) All	(6) All
Δ(import exposure)	0.0132	0.0160	0.0253	0.0122	0.0163
	(0.0061)**	(0.0061)***	(0.0079)***	(0.0058)**	(0.0061)***
Δ(immigrant share)	0.1383			0.1073	
	(0.0954)			(0.0931)	
Δ(exposure to euro)		0.3787			0.3888
		(0.0606)***			(0.0606)***
Δ(exposure to fiscal compact)			0.1549	0.2135	0.1714
			(0.0219)***	(0.0275)***	(0.0227)***
First Stage:					
IVΔ(import exposure)	0.1007	0.1066	0.1168	0.1001	0.1068
	(0.0125)***	(0.0140)***	(0.0179)***	(0.0122)***	(0.0141)***
F-stat excl. instr.	64.95	57.73	42.76	66.99	57.49
Period FE	Y	Y	Y	Y	Y
Area FE	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Election years	2001-2013	1992-2013	1992-2013	2001-2013	1992-2013
Estimation method	IV	IV	IV	IV	IV
Observations	24,044	48,072	48,072	24,044	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 5: Additional findings – invalid ballots and voter turnout

	(1)	(2)	(3)	(4)	(5)	(6)
			Panel A: invalid ballots			
Δ(import exposure)	0.0002	0.0016	0.0037	0.0004	0.0025	0.0065
	(0.0005)	(0.0005)***	(0.0007)***	(0.0004)	(0.0006)***	(0.0015)***
			Panel B: voter turnout			
Δ(import exposure)	-0.0047	-0.0050	-0.0075	-0.0017	-0.0020	-0.0055
	(0.0012)***	(0.0012)***	(0.0015)***	(0.0011)	(0.0010)*	(0.0016)***
First Stage:						
IVΔ(import exposure)				0.1368	0.1339	0.1164
				(0.0235)***	(0.0228)***	(0.0177)***
F-stat excl. instruments				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	OLS	OLS	OLS	IV	IV	IV
Observations	47,992	47,992	47,983	47,992	47,992	47,983

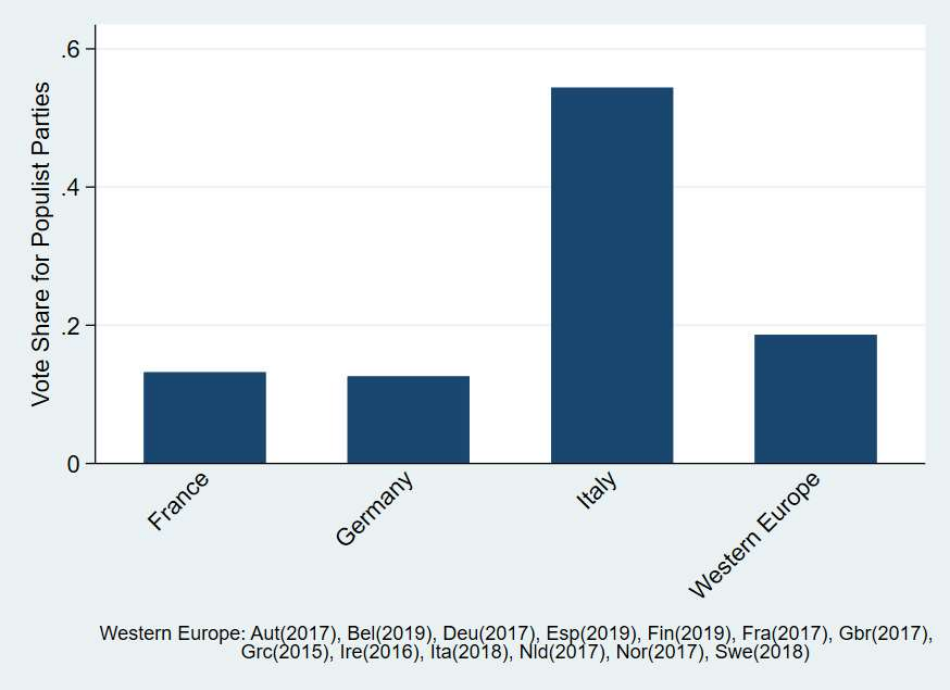
In Panel A the dependent variable is the average annual change in the share of invalid ballots between two elections. In Panel B the dependent variable is the average annual change in voter turnout between two elections. Standard errors are clustered at the level of 611 local labor markets. * p<0.1; ** p<0.05; *** p<0.01.

Table 6: Transmission channels

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

In column 1 the dependent variable is the average annual change in the populist vote share between two elections in the 1992-2013 period. In column 2 the dependent variable is the 10-year change in total employment as a share of working age population in the 1991-2011 period. In column 3 the dependent variable is the average annual change in the populist vote share between two elections in the 2001-2013 period. In column 4 the dependent variable is the 10-year change in total employment as a share of working age population in the 2001-2011 period. In column 5 the dependent variable is the yearly change in log income in the 2003-2014 period. In column 6 the dependent variable is the yearly change in the Gini index in the 2003-2014 period. 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

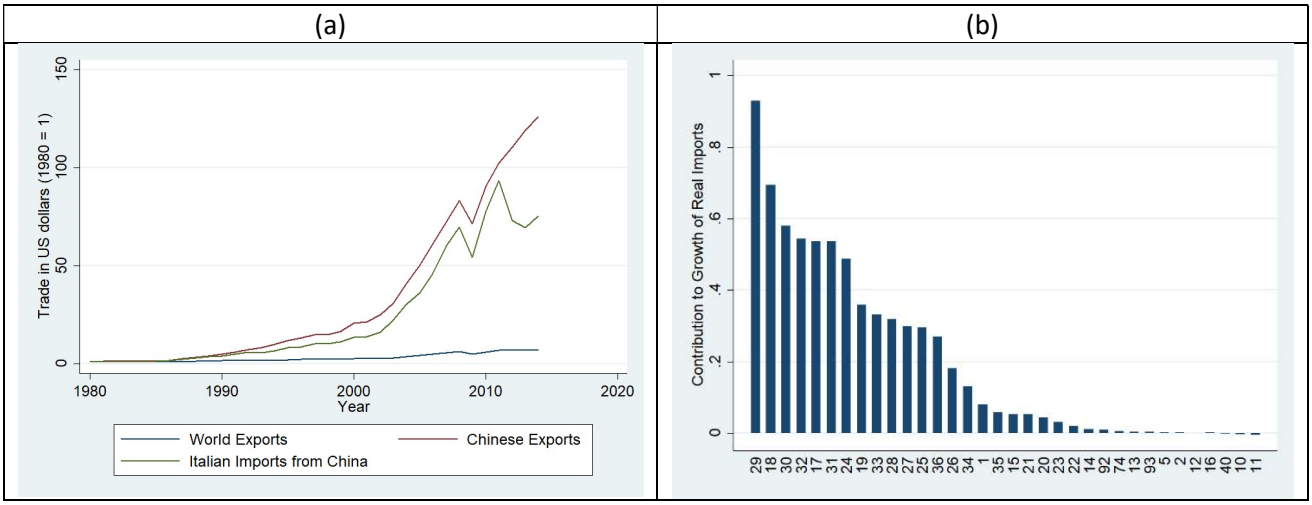


Note: Vote share won by all populist parties in the last available parliamentary election in France (2017), Germany (2017), Italy (2018), and Western Europe. The latter aggregate includes all countries (except Switzerland) considered in Colantone and Stanig (2018) and is weighted using the 2016 population. Parties are labelled as populist based on the classification by Inglehart and Norris (2016).
Source: Own calculations based on the elections 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

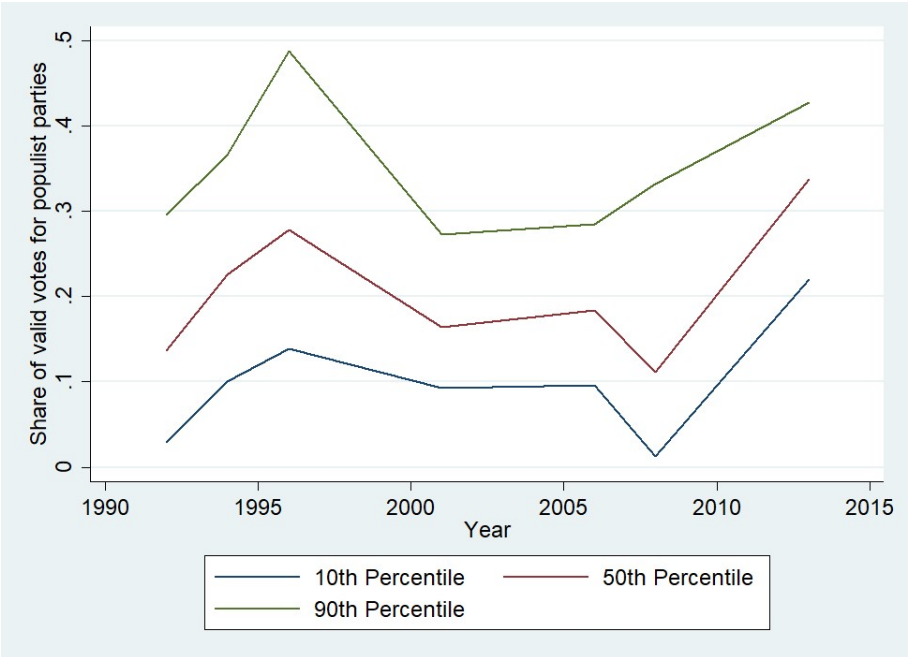
Note: The Group of Seven (G7) includes: Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.
Source: Own calculations based on WTO and OECD data.

Figure 3: Export dynamics



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/.

Appendix

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		0.00526
02	Forestry, logging and related service activities	Y		0.01494
05	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	Y		0.00000
10	Mining of coal and lignite; extraction of peat	Y		0.00000
11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying	Y		0.00024
12	Mining of uranium and thorium ores	Y		
13	Mining of metal ores	Y		0.00000
14	Other mining and quarrying	Y		0.00014
15	Manufacture of food products and beverages	Y	0.16	0.00066
16	Manufacture of tobacco products	Y	0.27	0.00056
17	Manufacture of textiles	Y	0.10	0.00127
18	Manufacture of wearing apparel; dressing and dyeing of fur	Y	0.14	0.00022
19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	Y	0.09	0.00126
20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Y	0.08	0.00213
21	Manufacture of pulp, paper and paper products	Y	0.17	0.00127
22	Publishing, printing and reproduction of recorded media	Y	0.34	0.00056
23	Manufacture of coke, refined petroleum products and nuclear fuel	Y	0.31	0.00007
24	Manufacture of chemicals and chemical products	Y	0.41	0.06580
25	Manufacture of rubber and plastic products	Y	0.15	0.00173
26	Manufacture of other non-metallic mineral products	Y	0.14	0.00127
27	Manufacture of basic metals	Y	0.14	0.00027
28	Manufacture of fabricated metal products, except machinery and equipment	Y	0.12	0.00072
29	Manufacture of machinery and equipment n.e.c.	Y	0.16	0.00280

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

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	0.00262
31	Manufacture of electrical machinery and apparatus n.e.c.	Y	0.21	0.00161
32	Manufacture of radio, television and communication equipment and apparatus	Y	0.36	0.01382
33	Manufacture of medical, precision and optical instruments, watches and clocks	Y	0.38	0.00700
34	Manufacture of motor vehicles, trailers and semi-trailers	Y	0.20	0.00505
35	Manufacture of other transport equipment	Y	0.33	0.01605
36	Manufacture of furniture; manufacturing n.e.c.	Y	0.16	0.00118
37	Recycling	N		0.00171
40	Electricity, gas, steam and hot water supply	Y		0.00030
41	Collection, purification and distribution of water	N		0.02431
45	Construction	N		0.00300
50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	N		0.00008
51	Wholesale trade and commission trade, except of motor vehicles and motorcycles	N		0.00817
52	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	N		0.02907
55	Hotels and restaurants	N		0.00539
60	Land transport; transport via pipelines	N		0.00390
61	Water transport	N		0.00195
62	Air transport	N		0.00383
63	Supporting and auxiliary transport activities; activities of travel agencies	N		0.03725
64	Post and telecommunications	N		0.00199
65	Financial intermediation, except insurance and pension funding	N		0.00098
66	Insurance and pension funding, except compulsory social security	N		0.00013
67	Activities auxiliary to financial intermediation	N		0.00001
70	Real estate activities	N		0.00006
71	Renting of machinery and equipment without operator and of personal and household goods	N		0.00117
72	Computer and related activities	N		0.00951

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

Sector (NACE revision 1)	Sector (description)	Import from China (Y/N)	Skill intensity	Dependence on public spending
73	Research and development	N		0.42225
74	Other business activities	Y		0.00050
75	Public administration and defence; compulsory social security	N		0.98660
80	Education	N		0.77876
85	Health and social work	N		0.75661
90	Sewage and refuse disposal, sanitation and similar activities	N		0.01252
91	Activities of membership organizations n.e.c.	N		0.01794
92	Recreational, cultural and sporting activities	Y		0.12070
93	Other service activities	Y		0.09299
95	Private households with employed persons	N		0.00000
99	Extra-territorial organizations and bodies	N		

Table A2: List of populist parties by election

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*)