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Populism and Income Inequality

How income inequality creates the preconditions for populism to grow

Master Thesis - MSc Policy Economics

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Abstract

A new wave of populism is disrupting the politics of the entire European continent, with unpredictable consequences for the future of the European Union. What explains such a phenomenon? What explains its rise? By looking at the evidence of an increased concentration of income in the hands of a small group of favoured individuals, this thesis examines the hypothesis that income inequality is a fundamental contributor to rising populism. First, I analyse the relationship between inequality and voting behaviour. Inequality affects directly voting decision by destabilizing and polarizing politics, affecting the loyalty of individuals to traditional parties, and creating a sentiment of envy towards the elite. At the same time, inequality impacts indirectly the electorate through those factors from which inequality is affected, meaning globalization and technological change. Second I evaluate the relationship between populism and income inequality, finding that income inequality effects populism positively. The estimated elasticity of populism on income inequality is significant and robust, value adjusted including a number of standard socio-economic and political variables. This result supports my main hypothesis.

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Contents

1 Introduction **2**

2 Literature Review **5**
2.1 Populism and its features 5
2.2 Income Inequality and its sources 7
2.2.1 Skill Premium and Technological Change 8
2.2.2 International Trade and Globalization 9
2.3 Inequality and Electoral Behaviour 10
2.4 Socio-political drivers of Populism 13

3 Model **16**

4 Data, Sample and Descriptive Statistic **20**
4.1 Data 20
4.2 Sample Description 20
4.3 Descriptive Statistics 22
4.3.1 Populism trend 22
4.3.2 Income inequality trend 24

5 Results **28**
5.1 Relationship between Populism and other factors 28
5.2 Regression Results 32
5.3 Robustness Checks 35

6 Conclusion **39**

References **41**

7 Appendix **48**

1 Introduction

The upcoming European elections in May 2019 are viewed as the most unpredictable since the creation of the European Union. Populism has obtained more support over the continent[1], disrupting traditional political schemes in favour of a rhetoric which strives to encompass as many voters as possible. Populist parties have a chance to become key political actors also at a supranational level, an unprecedented event with consequences hard to forecast. In addition, current populism has developed unevenly in different European contexts. Some political parties are right-wing and Eurosceptic, such as the National Front in France, Northern League in Italy, Alternative for Germany. Law and Justice in Poland and Fidesz in Hungary are often in open contrast with European Union, but they do not seem determined to leave it instead. Differently, other parties such as Podemos in Spain, Five Stars Movement in Italy and SYRIZA in Greece, describe themselves as anti-establishment, humanitarian and ecologist.

Populism is not an unknown phenomenon in human history. Indeed, Beyme (1985) already pointed out three waves of populism in modern history. As highlighted by an increased academic interest in the subject, a new wave of populism is challenging European democracies. While the literature has mainly focused on the description of populism and the analysis of its consequences on European societies, little attention has been given to what determines the rise of populism in specific periods of time. Therefore, the first contribution of this thesis consists of investigating the determinants of the demand for populism in Europe. The second contribution consists of demonstrating that income inequality provides the necessary strength to populist parties to succeed. Indeed, albeit an increased interest, it is still difficult to find any academic study that has produced a clear evidence of correlation between inequality and populism, at least in Europe.

The attention given to income inequality depends on its recent developments. The report of the OECD (2015) shows that income inequality has not only increased over time in the majority of European States, but in some cases it has even reached its historical highs over three decades. The hypothesis of a relationship between a political and an economic phenomenon is determined by the evidence that the two have emerged almost simultaneously. Besides, this relationship is suggested first and foremost by the definitions of populism and income inequality themselves. Populism, as defined by *Encyclopaedia Britannica*, is "a movement that champions the common person, usually by favourable contrast with an elite"[2]. The same source defines income inequality as "disparity in the distribution of income between individuals, groups, populations, social classes"[3]. The two definitions refer to similar entities, in a case under a social perspective (common people and the elite, in populism) and in another under an economic perspective (distribution of income between social classes, in inequality). Hence, it seems straightforward to assume that an economic factor would influence voters' political behaviour within a democratic society.

To test this assumption, I collected data on the variation in income inequality and in the

[1]The share of votes obtained by populist parties has almost doubled in a decade, moving from an average of 18% in 2007 to 33% in 2018.

[2]https://www.britannica.com/topic/populism

[3]https://www.britannica.com/topic/income-inequality

share of votes obtained by 83 populist parties in the legislative elections for 28 European countries, between 2000 and 2018. The decision to include a party as populist relies on the *PopuList*, a list supported by the Amsterdam Institute for Social Science Research, The Guardian, and the ECPR Standing Group on Extremism and Democracy. The list consists of those European populist parties that have obtained at least the 2% of share of votes in one or more national parliamentary election since 1998. Besides, to measure income inequality, I have used the Gini coefficient of equalised disposable income, which considers the level of income inequality after all social transfers (pensions included). This index accounts for the remaining income inequality after the action of national redistribution schemes, a feature that citizens consider when making their voting choices. Hence, this measure of income inequality can explain its impact on political behaviour better than the Gini coefficient before social transfers, which does not consider the redistribution work of the welfare state. Being all measures of Gini coefficients sourced from the Eurostat database, the homogeneity of the measure assumptions allows making comparisons between countries.

Taking advantage of such setting, Fixed Effects results in the best identification strategy to investigate the relationship between populism and income inequality. Clustering by country makes possible to include fixed effects on an already acceptable level of aggregation. Regional fixed effects adjust for eventual unobserved characteristics common to specific macro-regions of Europe (South, North, East, Continental and Islands). Finally, time fixed effects adjust for eventually omitted bias coming from entity-invariant but time-variant features that impact populism and inequality. Finally, the estimate for income inequality is adjusted including in the model standard socio-economic and political factors that are demonstrated to affect the performance of populism.

Running a log-linear regression model, I find a statistically significant positive effect of an increase in income inequality on the share of votes obtained by populist parties. The estimated elasticity of populism to Gini coefficient has an average value of 3.5%. In particular, if the estimate is adjusted for demographic and economic factors, the elasticity turns out to be stronger, around 3.7%. If also political variables are included, such value is reduced to 3.1%. The robust standard error solves for eventual heteroskedasticity and serial correlation. Furthermore, I do not find statistically significant effects for the majority of the adjustment variables. Still, in line with the expectations, I find a positive relationship between populism and exposure to globalization, measured as share of employment in the manufacturing sector. Instead, the negative sign of the elasticity of populism on education and on investment in R&D shows that countries that build the necessary capacity to face technological shocks are able to slow down populism growth. Age and urbanisation are those with a strong negative relationship with populism. While the results relative to urbanisation are in line with the recent literature about populism, those concerning the role of age are somehow more puzzling. Indeed my findings support the bulk of academic studies that claims that young adults comprise the electoral base of many European populist parties. Finally, from the regression results, it appears that political variables have a small effect on populism.

Furthermore, I assess whether my results are valid externally. Indeed, the inclusion of specific European countries depends on the presence of populist parties as pointed out by the PopuList. Countries such as Portugal and Malta are left out from the study for this motive. Still, my sample covers more than the 86% of the European population, and the most politically

weighting countries of the continent are included. Moreover, the PopuList is the outcome of a collaboration of around 30 academics which agreed on which party to consider populist, based on the widely accepted definition given by Mudde (2004). This has made me confident that those results are valid either internally and externally.

Finally, I test the robustness of my results assuming the existence of a relationship between populism and the share of national income owned by the top 10% of the income distribution (the elite). The hypothesis is that if the share of income owned by the elite increases, their political weight does it too. An increase in political influence of the elite is translated in policies in favour of such social class, at the expenses of the lower ones. In this conditions, populism is likely to receive more support. The results obtained testing this new hypothesis are positive and significant, confirming that populism is positively affected by the level of income concentration in the hands of the elite. Hence, these findings support the assumption that income distribution, thus inequality, influences political dynamics.

2 Literature Review

2.1 Populism and its features

The first step to overcome when analysing populism relies on the understanding of what populism is. Indeed, it is difficult to find a widely accepted scientific definition of this phenomenon. During a conference in 1967, the philosopher Isaiah Berlin evoked the "Cinderella Complex" while talking about populism. Albeit "there is a shoe in the shape of populism," he said, there is "no foot to fit it". In short, due to the complexity and variety of features which outline populism in different contexts, it is impossible to find a definition which would include them all. Arter (2010) admits that "there is general agreement in the comparative literature that populism is confrontational, chameleonic, culture-bound and context-dependent" (p. 490). Therefore, with this section, I strive to gather the different traits that allow identifying a political party as populist. To this end, it is convenient to analyse populism under three main political dimensions suggested by Gridon and Bonikowski (2013), named Ideology, Communication and Strategy.

Starting with the first dimension, Mudde (2004) defines[4] populism as a "thin-centred ideology that considers society to be ultimately separated into two homogeneous and antagonistic groups, the *pure people* versus the *corrupt elite*, and which argues that politics should be an expression of the general will of the people" (p. 543). In his definition, Mudde stresses the three qualities of populist ideology. The first one consists of a general absence of positioning respectively to different economic or political systems. This prevents populist parties to have a clear long-run perspective, with the consequence that only short-term policy proposals are discussed. Moreover, ignoring what are the core structural socio-economic challenges to tackle, populist policies harm the society. The second quality mentioned is the anti-establishment rhetoric, where populist parties regard themselves as advocates of common people will against the elite. The third feature consists of accusing the latter of being corrupt. Indeed, as Norris and Inglehart (2018) write, the first objective of populism is to question the authority of the establishment. It often claims the inadequacy of traditional parties, qualifying them as dysfunctional in defending the common people's will. It attacks the legitimacy of political representatives and their moral values, portraying them as interested only in their personal profit. Populist parties strive to build up their consensus exploiting (and/or creating) social polarization, where they are the only legitimate representatives of citizens' voice. As Bíró-Nagy, Boros, and Kadlót (2015) notice, these are the characteristics that allow distinguishing those parties truly populist from those who occasionally dabble in populism.

More difficult is to reconduct populist ideology into traditional Left/Right political schemes, and some academics even discourage the analysis of populism under this perspective. Indeed, populists claim to speak for common people, and consequently, their ideology is too fluid to be identified in a specific position. This makes possible that in the electoral programmes there is the coexistence of policies with left-wing and right-wing backgrounds, or that populist parties considered left-wing enter in coalition with other right-wing parties (and vice versa). Therefore, Norris and Inglehart (2018) suggest instead to look at second order principles advocated by

[4]The definition was given while assessing right-wing European populist parties, but it is often used by other authors to talk about populism in general.

populist parties, such as what cultural values they endorse, what programmatic policies they advocate, and what governing practices they follow. The authors distinguish between *Authoritarian* and *Libertarian* populist parties. Authoritarianism prioritises security (against enemies such as immigrants and foreign competitors in trade), defence of traditional values (thus against race and cultural diversity, other religious beliefs, homosexuality, etc.), and strong leadership. Libertarianism instead promotes more liberal values (i.e. social justice and civil security), it challenges mainstream parties and media, fights corruption, capitalism and globalization (as sources of economic insecurity and unemployment condition) and it often supports alternative democratic systems (such as direct democracy).

Communication is the second dimension used to identify populism. Jagers and Walgrave (2007) affirm that populism should be considered as a "political communication style of political actors that refers to the people". This definition can be integrated with the one of Aslanidis (2016) which emphasises the anti-elite element in populist rhetoric. What US President Trump wrote in 2016 in *The Wall Street Journal* is emblematic of the aforementioned trait of populism: "The only antidote to decades of ruinous rule by a small handful of elites is a bold infusion of popular will. On every major issue affecting this country, the people are right, and the governing elites are wrong."[5] Populists leaders first blame governing politicians of being blind in front of the real people's needs. Then they use a communication style which highlights the differences between common citizens (morally right), and the elites (morally wrong). In the end, they elevate themselves to the legitimate spokespersons of people's voice, because they are the only ones able to unify people's need and support them.

Nevertheless, since speeches and manifestos are subject to a high degree of mutability in style and content, it becomes difficult to find that threshold which defines if a party or its leader is populist or not. This is especially the case of traditional parties that change their communication style to follow the populist one. Hence, as Krause and Haughton (2009) affirm, when analysing manifestos and speeches it is more useful to assess parties per degree of populism rather than design a clear cut-off classification.

Finally, we conclude this brief review analysing the last aspect of populism, its strategy. Strategy means party economic and social positions and its internal organization. Starting with the first of these two aspects, Acemoglu, Egorov, and Sonin (2011) explain populism "as the implementation of policies receiving support from a significant fraction of the population, but ultimately hurting the economic interests of this majority" (p. 1). Populism arises from a general social discomfort in traditional politics and appeals voters by exploiting it as a source of its political agenda. The downside of this strategy is that the proposed policies lack a long-term view ("taxes are too high, they must be reduced") and naïve ("if poverty is the issue, we should directly transfer money to who is unemployed"). For this reason, as noticed by Norris and Inglehart (2016), populist economic policy is often expansionary and plays down the adverse consequences of growing public debt. But while the benefits of expansionary policy can be felt quickly, the adverse consequences of growing debt are not.

Other academics focus more on the political organization, where what matters most is the relationship between the party and its constituency. Under this aspect, populism can

[5]https://www.wsj.com/articles/let-me-ask-america-a-question-1460675882

emphasise the figure of the charismatic leader, or a leading group internal to the party (Weyland (2001); Levitsky and Roberts (2011); Taggart (1995)). Instead, Urbinati (2014) affirms that populism can only work in the presence of strong leadership. Populist parties are often led by an outsider, which claims to be democratically legitimate because of his/her unique privilege to understand people's requests. In this type of populism, there is a clear lack of internal democracy, where everybody must be aligned to the leader's position, which represents also the party one. Still, other academics do not agree with the leadership condition (Barr (2009); Jansen (2011)) and open the definition to those movements where either the leadership is multiple or where the plebiscitary trait of political decision-making is exalted and promoted as the only correct approach to politics. In this latter case, it is still possible to glimpse the leadership trait in the founders of the movement or in those who, once elected, are more capable than others in gaining attention and followers.

2.2 Income Inequality and its sources

As second step of this analysis, it is fundamental to understand why income inequality matters, which are its sources and its consequences. Several academics have concluded in their studies that inequality can be desirable for society. Lazear and Rosen (1981) show that inequality can positively influence economic growth, creating incentives for individuals to compete effectively within society. Kaldor (1957) highlights the saving aspect, where inequality can influence the ratio of savings respectively to the income earned and, ultimately, increase the national investment capacity. Kuznets (1955) presents evidence of increasing inequality within countries during the first period of economic growth, and reduced inequality in the later stages. Barro (2000), following Kuznets, notices that in developed economies it might exist even a trade-off between redistribution of resources and economic growth.

Still, the relationship between inequality and growth appears to be nonlinear, as in the theoretical model of Benhabib (2003). In this model, if inequality is low, a small increase provides growth-enhancing incentives, while if inequality is already high, further increments encourage rent-seeking and lower growth perspectives. Ostry, Berg, and Tsangarides (2014) summarise effectively the consequences for an economy in the latter situation. Excessive income inequality deprives the poor of the capability to support their health expenditure (which is ultimately translated in an additional loss in economic force) and to accumulate human capital by investing in education (Perotti (1996); Galor and Moav (2004); Aghion, Caroli, and Garcia-Penalosa (2001)). Furthermore, an unbalanced income distribution generates economic instability (by increasing the size of the population at risk of poverty) which reduces the number of investments done into the economy (Alesina and Perotti (1996)). Besides, an unequal and unstable economy fails to create the social consensus required to adjust itself to shocks and to sustain economic growth, boosting political instability and social tensions (Rodrik (1999)).

Understanding the relevance of such risks, the OECD reported in 2015 that in most countries income inequality was at its highest levels since thirty years, in a situation where the recent recession had contributed to accelerating this trend. The reason why western economies are experiencing such a rise is crucial to understand the social dynamics faced in the last ten years. Income inequality is a complex phenomenon to whose several different aspects contribute to determine its levels. Academics have dedicated many resources to the analysis of

inequality, identifying among the others, the *Skill Premium and Technological Change* and the *Globalization* channels.

2.2.1 Skill Premium and Technological Change

In the analysis of earning distribution done in many developed economies, researches have noticed a tendency of the returns to skills investments to increase over the last decades. Return to skills is measured by the difference in wages earned by graduate and non-graduate workers, within the same economy. This evidence can be explained because of the increasing demand for high-skilled individuals which is not entirely satisfied by the current level of supply of such skills. The consequences of such divergence explain partly the latest income inequality trend, finding its routes in the technological change started with the ICT revolution 50 years ago. This concept has been first formulated by Tinbergen (1974, 1975) who has introduced the idea of a race between skills and technological change. He claims that the formation of skills is biased[6] by technology: the supply of skills determines the development of technology, creating a consequent demand for these or even higher skills. Acemoglu and Autor (2011) find in the *Canonical Model*[7] a setting that gathers and explains such developments. The theory not only conceptually works, but it is confirmed by several empirical studies for the United States (Murphy, Riddell, Romer, and Paul (1998); Autor, Katz, and Krueger (1998), Autor, Katz, and Kearney (2008);Carneiro and Lee (2009)) and for other advanced economies (Katz, Loveman, and Blanchflower (1995); S. Davis (1992); Murphy et al. (1998); Card and Lemieux (2001); Fitzenberger and Kohn (2006); Atkinson (2008).

Nevertheless, the Canonical Theory fails to explain a simultaneous *job polarization*, meaning the growth of employment share either in high-skilled and high-wage or in low-skilled and low-wage occupations (Acemoglu (1999)). The *Ricardian Labour Market Model*, developed by Acemoglu and Autor (2011), results in the most complete model to explain such trends. Incorporating the ideas of the *Ricardian Model for trade*[8], it adds to the Canonical model the fundamental distinction between skills and tasks[9]. Thus, technological change can affect the production process, making certain tasks routinised by machines (Autor, Levy, and Murnane (2003)). The evidence shows that a rising share of middle educated workers, those hit the most by technology, are now employed in traditionally low-skilled services (Bohem (2014)). A noteworthy implication of this framework is that technical change favouring one type of worker can also reduce the real wages of another group. Dauth, Findeisen, Sudekum, and Wößner (2017) confirm the theory. They find that in Germany, technological modernization has replaced middle-skilled workers, which have been shifted towards lower-wage jobs. The

[6]Skill-Biased Technical Change stands for a shift in the production technology that favours skilled over unskilled labor by increasing its relative productivity and, therefore, its relative demand.

[7]Following Acemoglu and Autor (2011), the model "includes two skill groups performing two distinct and imperfectly substitutable occupations (or producing two imperfectly substitutable goods). Technology is assumed to take a factor-augmenting form, and thus complements either high or low skill workers. Changes in this factor-augmenting technology then capture skill biased technical change." (p. 1044).

[8]Referring to the idea of the comparative advantages between and within countries and applying it to the labour.

[9]A task is defined as a unit of work activity that produces output.

estimated loss in annual earnings has been estimated in values between 63 and 800 euro. At the contrary, high-skilled individuals in the same sector have benefited the most from the technological changes.

Therefore, technological change increases income inequality by favouring high-skilled workers and disfavouring middle-skilled workers who end up in low-remunerated jobs. The consequent job polarization and the simultaneous increment in wages for high-skilled workers boost income inequality. High income inequality is counterproductive for the entire society, depriving a big share of the population of the financial resources to invest in education. Indeed, only high-skilled individuals can enjoy the benefits offered by technological change. If individuals do not possess the resources to invest in education, they are destined to be harmed by job polarization and will be more likely to end up in a low-salaried job. Income inequality creates a cycle which fosters its own increase.

2.2.2 International Trade and Globalization

The victory of "Leave" in the Brexit referendum in June 2016, the success of Trump in the US presidential elections with his rhetoric against Chinese import and the rise of anti-globalization movements might be all connected events. Among those who voted to leave the European Union in the United Kingdom, the majority is part of that manufacturing labour force hit most by the globalization (Becker, Fetzer, and Novy (2017)). China shock (but more in general all those developing countries where the labour force is extremely convenient) has produced an epochal shift in the labour force composition in developed economies (Autor, Dorn, and Hanson (2016)). Thus, low-skilled workers in these latter countries are pointed out by academics as the "losers" of globalization. Manufacture sectors are those where these trends are visible the most. Higher competition from developing countries has reduced the wages and employment opportunities for low-skilled workers, while high-skilled individuals see their own wage rising. This dynamic has worsened income inequality.

The neoclassical *Stolper-Samuelson Theorem*[10] can be used to understand the impact of trade on (college) wage premium. The theorem assumes a condition where a country trades on the international market two types of product, one low-skill-intensive and one high-skill-intensive. If the price of the high-skill-intensive product rises, so does the wage of the high-skilled worker, while the salary of the low-skilled one decreases. Assessing the implication of U.S. trade with other developing countries, Borjas, Freeman, and Katz (1997) confirm the theory, finding that trade accounted for 20% of the rise in the U.S. college wage premium in the period 1980-1995.

Still, the Stolper Samuelson Theorem implies that a higher college wage premium in rich countries should induce manufacturers to economize on highly skilled workers, while in poor countries it should do the opposite. As Helpman (2016) notice, this is not true based on the evidence produced so far.

Instead, Acemoglu and Autor (2011) and Feenstra and Hanson (2001) demonstrate that it is the trade of intermediate inputs that drives the impact of trade on wage inequality. In their

[10]In Stolper and Samuelson (1941) the original theorem is stated and explained.

theory *Simple Model of Outsourcing*[11], they consider the production of high-skilled intensive and low-skilled intensive products, and allow companies to purchase intermediate inputs outside the economy, meaning outsourcing. The expectation of the model is that outsourcing affects skilled and unskilled workers differently. If the home industry faces a higher relative wage for unskilled labour than that abroad, then these activities are outsourced reducing the relative demand for unskilled labour in the home country. This theory has been tested over 447 industries within the U.S. manufacturing sector in the period 1979-1990. Outsourcing accounts for 15-24% of wages divergence. European economies have outsourced as well during these years, hence these results, albeit with different magnitude, are applicable to them as well. The Simple Model of Outsourcing does not stand alone in the literature about the impact of international trade on wages. Other examples include the papers gathered in Arndt and Kierzkowski (2001), as well as Kim and Mieszkowski (1995), Leamer (1996), Xu (2000) and Yi (2000).

Therefore, globalization together with technological change has increased the opportunity to outsource intermediate goods where low-skilled labour is cheaper. Developing countries such as China, with competitive low-skilled labour supply, have benefited by outsourcing, while low-skilled workers in developed countries as suffered such competition. In this latter economy instead, the demand for high-skilled workers has increased, and with it their wages too, while outsourcing as lowered wages and employment opportunities for low-skilled individuals. The combination of these two trends has further worsened inequality.

2.3 Inequality and Electoral Behaviour

Once clarified the role of technology and globalization in contributing to the rise of income inequality, the goal of this section is to evaluate how inequality affects electoral behaviour. The literature has rarely focused on the direct link between inequality and voting decision, although it is showing lately increasing interest.

The literature has usually relied on the *Downsian Model* (also known as *Median Voter Theorem*) to explain political competition and people's preferences towards specific policies. The model takes its name from Anthony Downs, who presented it in 1957 in his book "An Economic Theory of Democracy". Downs assumes that voter preferences and party positions fall across the left–right dimension[12]. Individuals (considered rational and informed) vote based on their personal interests. In a two-party competition, each party supplies proposals to support the interests of its voting base. Still, to win they have to attract the median voters' support, being its preferences at the middle of the distribution. Hence, parties converge to the centre of the political spectrum to subtract those votes to the competitor. If inequality is introduced in the model, then an increase in the level of income inequality should make redistribution more desirable. Thus, the right-wing party is expected to move towards more favourable stances

[11]The detailed explanation of the model can be found in the pp. 10-20 of Feenstra R.C. and Hanson G.H.: "Global Production Sharing and Rising Inequality: A survey of Trade and Wages". NBER Working Paper No. 7382. July 2011.

[12]In the traditional division left/right-wing, the Left aims to redistribute wealth and ensure social security for all, while the Right proposes a model of free market competition and limited government interference in the economic reallocation of resources.

on redistribution, hoping to attract the left-side of the electoral distribution. Despite the conclusion of the model is logically correct, the theorem has failed to predict the political competition that has characterised the last 5 years. Indeed, many political parties have rather moved to the extremes of the political spectrum. Inequality has increased, but median voters are not responding as the theory forecasts.

Some authors explain this evidence flagging the role of expectations for the future. The prospect of higher income in the future disposes those with low income to anticipate such increase, inducing them to vote for right-wing parties (Alesina and Ferrara (2005); Benabou and Ok (2001)). Similarly, if citizens are more pessimistic about the future, they might be attracted by stronger policies for redistribution proposed by more left-wing parties (Iversen and Soskice (2006); Lupu and Pontusson (2011); Moen and Wallerstein (2001); Mughan (2007); Rehm (2016)). Furthermore, Downs' assumption of perfect information of the electorate is unrealistic. As the empiric has highlighted (Delli-Carpini and Keeter (1996)), people tend to lack political knowledge and information. Besides, Gronlund and Milner (2006) affirm that those with the least economic resources and with most to gain from a reduction in inequality are also known to be the least knowledgeable and informed about politics. Not surprisingly, in the recent elections, populist parties have been accused of sharing fake news online to increase their support from the mass.

To account for all these variables, Vowles, Coffé, and Curtin (2017) propose to use the *Social Psychological Model* to explain the role of inequality in electoral behaviour. This model supposes that voters are akin to consumers, and political parties to products, as Downs did. Differently though to Down, the Social Psychological model introduces the element of voter loyalty to a political party, shifting the emphasis of the model on psychology and group theories of politics (Berelson, Lazarsfeld, and McPhee (1954)). This has underpinned the development of a theory of party identification (Campbell, Converse, Miller, and Stokes (1960)), the base of the Social Psychological Model. Moreover, the model assumes that parties either respond to, or shape social cleavages, often reflecting economic inequalities (cleavages can also reflect language, ethnicity or religious differences). People identify themselves with their cleavage and around it they develop loyalties to political parties that represent them. Consequently, political parties shape their ideology and preferences for issues to stand for, depending on the supporting cleavage. Nevertheless, loyalty is not fixed, and it might be overcome by charismatic individuals, attractive promises, or by a feeling of reluctance towards the past governing class. Then, inequality can represent that factor able to destabilise partisanship among society. Alesina and Perotti (1996) analysing the correlation between inequality and political instability[13] suggest that more unequal societies are also those more politically unstable and polarized.

As Ashworth, de Mesquita, and Friedenberg (2018) claim, another fundamental factor to consider in political behaviour studies is the assumption of rationality of voters. A relevant

[13] Alesina and Perotti (1996), recognising the difficulty in defining political instability, consider two aspects of it. "The first one emphasises executive instability. The second one is based upon indicators of social unrest and political violence. The first approach defines political stability as the "propensity to observe government changes". These changes can be "constitutional" i.e. take place within the law, on "unconstitutional" i.e. they can be *coups d'état*. The basic idea is that a high propensity to executive changes is associated with policy uncertainty (...)." (p. 1205).

branch of the literature examines how the electorate responds to shocks not under the control of politicians, such as economic shocks. Their idea is that if voters are rational, such shocks would not influence the electoral fate of incumbents. Even though a number of studies seems to agree with the latter case (Abney and Hill (1966); Ebeid and Rotten (2006); Kayser and Peress (2012)), most of the literature agrees with the view that exogenous shocks do alter the electorate behaviour (Achen and Bartels (2004, 2016); Leigh (2009); Wolfers (2002)). For instance, Healy, Malhotra, and Mo (2010) test the hypothesis of whether information irrelevant to government performance affects voting behaviour. To test for the effects of irrelevant information, they explore the electoral impact of local college football games just before an election. They find that a win in the 10 days before the elections allows the incumbent to receive an additional 1.61% of the votes. The Downsian argument is that rational voters should not base electoral decisions on such events. The evidence that these phenomena bias the results of an election proves that voters are irrational. Kahneman (2011) agrees with this view too, arguing that individuals usually react to external stimuli by instinct and emotions rather than rationally. The author claims that voters are strongly influenced by recent experiences and do not consider the consequences of their actions. The political environment becomes unstable and individuals do not act rationally anymore. Populism finds in these conditions a breeding ground where to grow.

Ashworth et al. (2018) go beyond, claiming that economic shocks could impact electoral results even despite voters' rationality and instrumental preferences. This happens because these events offer to individuals the possibility to collect new information about incumbent politicians and the quality of the current governing structure. If politicians are expected to be high-quality, voters expect high-quality responses to shocks. Hence, based on such responses, rational voters should exploit this information to evaluate their governing class. While doing so, voters implicitly drive conclusion on the possible incumbents' future reaction. As a result, the electors' behaviour will be affected by an economic shock even if they do realize that the incumbent is not responsible for the happening of the event. In a context where income inequality keeps rising, the theory predicts that people should lose faith in the governing class, and find other candidates to support their need of redistribution. This conclusion explains why nowadays populism is supported by more voters.

Pastor and Veronesi (2018) have further developed the theory on a relationship between inequality and voting decision, by directly correlating growing inequality with rising populism. In their work, they connect the two trends in a tractable heterogeneous-agent equilibrium model. The authors assume that agents dislike inequality. Inequality is measured as the variance of consumption shares across different agents in the economy, where high consumption of the elites is disliked. Aversion to inequality thus reflects envy of the economic elites more than compassion for those left behind. Hence, inequality-averse agents perceive a reduction in consumption from the elite as an approach to reduce inequality. A backlash against the elite emerges as the optimal response of voters to rising inequality.

Alternatively, the literature has discussed the indirect implications that inequality has on electoral behaviour, by analysing either theoretically or empirically those channels through which inequality is affected. Rodrik (2018) focuses on the impact that globalization had on political preferences, claiming that globalization has a positive role in populism success. From the analysis of international trade theories, he notices that those theories forecast already a

binary situation of winners-losers of globalization. Indeed, and it is especially true for developed countries, globalization has driven multiple and overlapping wedges in society between capital and labour, skilled and unskilled workers, industries with comparative advantages and those without. Therefore, the polarization created by globalization is reflected on politics.

This thesis has been corroborated by a number of empirical studies. Evaluating the impact of China shock in the United States, Autor, Dorn, Hanson, and Majlesi (2016) compare the Pew ideology[14] outcomes between more trade-exposed areas relative to the less trade-exposed ones. They find that for every standard deviation rise in import exposure in a determined area, there is a 0.65 increased probability to register one more right-leaning answer for every three survey respondents. In addition, they looked at the electoral outcomes of the congress elections, finding that in more exposed-to-trade districts, having a centrist in power would have become 17.6 percentage points less likely. In Great Britain, contextually to the Brexit referendum, Becker et al. (2017) find that trade and migration exposure explain together roughly 43% of the variation in the referendum result between locations. Colantone and Stanig (2018b) calculate that for every standard deviation increase in trade competition, the probability of voting for Leave rises by 2 percentage points. Evaluating the role of trade in Western Europe, Colantone and Stanig (2018a), find that if trade competition increases by one standard deviation, there is an expected 1.7% increase in support for radical-right parties.

While the relationship between international trade and populism has received wide attention from the literature, technological change has somehow received less consideration, even though it is always quoted as another relevant explanatory variable in these studies. This happens in part because globalization has been blamed with much more strength by populist parties, and because a sharp distinction between trade and technology has become harder to make (Ebenstein, Harrison, McMillan, and Phillips (2014)). For Helpman (2016), technology has even more explanatory power than international trade in rising wage polarization within the manufacturing sector. Autor, Dorn, Hanson, and Majlesi (2016) explicitly add technological change as an independent variable to their empirical study. Exploiting the concept of routine employment as a proxy for technology (Autor and Dorn (2013)), they analyse the employment changes in the manufacturing sector to study the electoral implications of technological changes. Comparing U.S. geographical locations by their exposition to technological shocks, they estimate that in the areas hit the most, there is a 6% reduction in voting in favour of moderate candidates.

2.4 Socio-political drivers of Populism

Assessing populism only from an economic point of view would reduce the complexity of a phenomenon which interests also social and political aspects. Truly, economic events are often responsible to give the first impulse to specific social and political phenomena, but it is also true that the direction taken by these latter events depends on the relative social and political structures in place.

[14] Appendix 2 About the Political Typology: "The 2017 political typology divides the public into eight politically engaged groups, along with an ninth group of less engaged Bystanders. The assignment of individuals to one of the eight core typology groups is based on their responses to 12 questions about social and political values and their party affiliation". https://pewrsr.ch/2iwBgSU.

Assessing the role of the political factors, it is important to notice how citizens have lost confidence in the political institutions after the financial crisis in 2009. Such loss has been so strong and wide among European countries, that academics refer to it as a *crisis* or *deficit* of trust. Thus, falling trust in government is considered one of the roots of populism. The idea of an existing correlation between the two has been tested by many empirical studies. Among all, Dustman et al. (2017) have analysed the data collected by the European Social Survey (ESS), finding that there is a strong correlation between the probability of voting for a populist party and attitudes trust in political institutions. Specifically, low probabilities of voting for right-wing or left-wing populist parties are associated with high levels of trust in political institutions. These findings are supported by many other theoretical and empirical studies (Maier (1994); Foster and Frieden (2017); Norris and Inglehart (2016);) and they are valid also for the trust in European institutions.

Algan, Guriev, Papaioannou, and Passari (2017) give two potential explanations of the rise of Euroscepticism and the electoral success of far-left and far-right populist parties. The first one identifies a cultural backlash against progressive values, cosmopolitanism and multiculturalism, with a shift towards national identity. The second explanation emphasizes economic insecurity (due to economic recession and rise in the unemployment rate), globalization and technological progress and/or the sharp increase in unemployment in Europe after the crisis. Although European institutions are quite transparent, the complexity of their political processes and the use of a language different from the national one make difficult for citizens to understand the benefits of coming from the work of EU institutions. Therefore, the EU becomes the preferred target of populists when pointing out the sources of national core issues.

As for every political phenomenon, demographic characteristics of the population shapes intensity and peculiarities of populism. Among all, education and age are strong predictors of support for progressive values. Concerning the age factor, a substantial body of evidence confirms that growing up with high levels of existential security is conducive to open-mindedness, social tolerance and trust, secularization, and acceptance of diversity (Inglehart (1997)); Inglehart and Welzel (2005)). Norris and Inglehart (2016) suggest that this is the case of the cohort of baby boomers and the following generations. Hence, they conclude that these voters are less likely to support populism than the older generations who have lived in the years of World War II. At the same time, Pollock, Brock, and Ellison (2015) suggest that younger generations are also living years of economic insecurity (Great Recession, high unemployment, etc.) and this experience has directly affected youth's political views. Becker et al. (2017) show that demography and education (i.e., the age and qualification profile of the population across voting areas) explains just under 80% of the Vote Leave share in the Brexit referendum. The same find that the strength of the Leave movement depends on cultural differences between natives and immigrants. Citizens usually become uneasy at the noticeable presence of foreign-born individuals, and they usually worry about the burdens on welfare and the pool of jobs. Often, the idea of importing different mores, languages and religions is seen as a threat to national identity (Maier (1994)). Still, Brunner and Kuhn (2014) find that the strength of these sentiments depends on what extent immigrants' culture differs from the natives' one too.

Nevertheless, Allport (1954) *Contact Theory* suggests that increased contact with immigrants should reduce anti-immigration or xenophobic sentiments. A broad reading of Allport theory suggests that individuals living in urban areas, with greater exposure to cultural and

ethnic and religious diversity, may be less threatened by rising immigration than their rural counterparts (L. Davis and Deole (2017)). Cities are also usually populated by young and highly-educated individuals (Glaeser (2011)), factors that limit populism success.

Finally, the role of social cohesion is central in the discussion about populism. Populism exploits a rhetoric style which emphasises the division of the society in cleavages (based on ethnicity, religion or economic conditions), supporting the clash between them. If populism succeeds in disrupting social cohesion, society becomes more vulnerable and divided. As Maier (1994) notices, if societies are dealing with a moral crisis, social cohesion suffers, and populism finds a favourable context where to install their roots. The level of corruption that a country experiences is seen as a proxy for such a moral crisis. Besides, it is not surprising that corruption has a primary role in determining the level of populism (van Kessel (2015)). Recalling the characteristics of populist rhetoric, the governing class is blamed to be corrupted, thus not interested in supporting people living in economic insecurity. Hence, if corruption has increasingly pervaded societies, populist parties find an important assist in gaining popularity among society.

3 Model

My hypothesis is that income inequality affects voting behaviour, shifting the preferences in favour of populist parties. A context where a large group of citizens face economic insecurity compared to a small portion of well-off individuals, is likely to produce a situation where the economic dissatisfaction of the firsts becomes a demand for radical changes. This demand can be caught by populist parties. To examine this eventuality, I follow the developments of the share of votes obtained by populist parties in relation to the Gini coefficient trends. I base my observation on the electoral terms of 28 European countries between 2000 and 2018.

The level of populism that each country experiences may result from factors other than income inequality. There might be cultural elements that make democracy more exposed to populist rhetoric. At the same time, the institutional structure might limit the rise of outsiders in favour of traditional parties. If citizens tend to be pessimistic about the future or tend to believe more in the welfare state, populism might find respectively a favourable or inconvenient environment. Still, it is difficult to capture all meaningful effects which contribute to determine the strength of populism for each country. To this end, country Fixed Effects (FE) allow estimating the causal relationship between populism and income inequality, by removing the noise created by other unobserved factors correlated with populism. Indeed, country fixed effect assumes that there are unobserved factors specific to each entity which are fixed over time, that affect both the dependent and independent variables. Accounting for the influence of such unobserved variables ensures that the estimates obtained with the regression will be unbiased. To visualise the mechanism of FE, let's start from a simple linear regression:

$$y_{it} = \beta_0 + x_{1it}\beta_1 + x_{2it}\beta_2 + \ldots + x_{jit}\beta_j + \epsilon_{it} \tag{1}$$

y_{it} is the independent variable in a country i at a time t (referred to the year of elections); x_{1it} is the main independent variable; x_{jit} with $j \neq 1$ represents all adjustment variables included in the regression, and ϵ_{it} is an error term. In particular, the error term is composed by two terms:

$$\epsilon_{it} = a_i + u_{it} \tag{2}$$

Where a_i captures all unobserved time-invariant factors that affect y_{it}. The error u_{it}, called idiosyncratic error (or time-varying error) denotes unobserved factors that change over time and that are uncorrelated with each explanatory variable in all time periods. Now, for each i, equation 1 integrated by equation 2 is averaged over time:

$$\overline{y}_i = \beta_0 + \overline{x}_{1i}\beta_1 + \overline{x}_{2i}\beta_2 + \ldots + \overline{x}_{ji}\beta_j + a_i + \overline{u}_i \tag{3}$$

Adopting a fixed effects approach allows estimating the effective role of the independent variables while getting rid of the variable a_i. This is done by subtracting equation 3 from equation 1 (differencing or demeaning approach):

$$y_{it} - \overline{y}_i = (x_{1it} - \overline{x}_{1i})\beta_1 + (x_{2it} - \overline{x}_{2i})\beta_2 + \ldots + (x_{jit} - \overline{x}_{ji})\beta_j + u_{it} - \overline{u}_i \tag{4}$$

With a logic similar to country fixed effects, I adjust the identification strategy to capture eventual time-invariant macro-regional features. For instance, Mediterranean countries have higher

youth unemployment rates and less women active in the workforce than Nordic countries. At the same time, the Nordic welfare state seems to work better than the Southern one. Hence, I divide Europe in five macro-regions (Mediterranean region, Continental region, Nordic region, Eastern region and Islands region), where the relative dummy variables account for regional fixed effects. Country and region fixed effects solve the bias created by time-invariant features which affect populism, but there are also events whose developments have an impact on populism. This is the case of events such as the economic recession, the Middle-East refugee crisis or the development of social media. Hence, the identification strategy is further provided with time fixed effects to adjust for the presence of omitted variables from time-varying conditions. This is done statistically by including in the regression dummy variables for the years considered in the study. Then, equation 1 becomes:

$$y_{it} = \beta_0 + x_{1it}\beta_1 + x_{2it}\beta_2 + \ldots + x_{jit}\beta_j + \delta_2 B1_t + \ldots + \delta_t BT_t + \gamma_1 R_1 + \ldots + \gamma_5 R_5 + \epsilon_{it} \quad (5)$$

where B represents a dummy variable for every $T-1$ year observed in the data set ($T=1$ is omitted due to collinearity), and R_n is the dummy variable for every region included in the study.

Besides, it is founded to suspect that income inequality (as well as more explanatory variables) has a non-linear effect on populism share. Thus, estimating a linear model would lead to wrong and/or insignificant results. A logarithmic specification is the best approach, because it solves the aforementioned issue without leaving the linear regression framework. This model is called Log-linear model. Equation 5 becomes:

$$log(y_{it}) = \beta_0 + log(x_{1it})\beta_1 + \ldots + log(x_{jit})\beta_j + \delta_2 B1_t + \ldots + \delta_t BT_t + \gamma_1 R_1 + \ldots + \gamma_5 R_5 + \epsilon_{it} \quad (6)$$

A log-linear specification form gives estimated parameters which have to be interpreted as elasticities. Besides, these estimates are assumed to be constant over all values of the dataset. Therefore, the coefficients obtained from a logarithmic specification can be interpreted as percentage changes: if the explanatory variable changes by one percent, the dependent variable changes by β percent. In addition, models using the natural logarithms for the explained and the explanatory variable often meet the CLM assumptions[15] more closely than using the level of the explained variable (Wooldridge, 2016). Hence, logs potentially allow solving issues such as heteroskedastic or skewed conditional distribution. Finally, using logarithms narrows the range of the estimates for the dependent and independent variables. Narrowing these ranges makes the estimation less sensitive to outlier values.

The inclusion of adjustment variables is suggested by the literature on the determinants of voting behaviour. Table 1 summarises the economic, social and political variables which impact populism, reporting their relationship with populism based on the theoretical and empirical works. To this end, I will consider standard demographic aspects of the population such as median age, the percentage of tertiary educated citizens, urbanization rate, the percentage of believers in God, and share of the foreign-born population. To account for economic cycle and economic uncertainty, I adjust the estimation for real GDP per capita and the unemployment rate. To account for economic shocks I use employment in manufacture as a proxy for

[15]Classical Linear Model assumptions.

globalization and Research and Development expenditure (as % of the GDP) for the exposure to technological shock. Finally, political indicators are included among the explanatory variables. In the specific, I adjust the estimate of the relationship between income inequality and populism adding trust in government and trust in European institutions. Social cohesion is captured using the level of perceived corruption in an economy.

Table 1: Factors that impact populism, and relative sign of such an impact

Variable	**Relationship**	**Reference**
Gini Coefficient	Positive	Vowles, Coffé, and Curtin (2017), Pastor and Veronesi (2018)
Manufacture Empl.	Positive	Rodrik (2018), Colantone and Stanig (2018b)
R&D Expenditure	Positive	Autor and Dorn (2013)
Real GDP per capita	Positive	Algan, Guriev, Papaioannou, and Passari (2017)
Unemployment Rate	Positive	Algan, Guriev, Papaioannou, and Passari (2017)
Urbanisation Rate	Negative	L. Davis and Deole (2017)
Median Age	Positive/Negative	Norris and Inglehart (2016), Pollock, Brock, and Ellison (2015)
Tertiary Education	Negative	Becker, Fetzer, and Novy (2017)
Immigration	Positive	Maier (1994)
Religious Diversity	Positive	Brunner and Kuhn (2014)
Corruption	Positive	Kessel (2015)
Trust in Government	Negative	Dustman et al. (2017), Foster and Frieden (2017)
Trust in EU	Negative	Dustman et al. (2017)

It is important to mention that alternatively to the fixed effect approach, to identify the causal effect of income inequality on populism, *Random Effects Model* could represent a valid approach. Ideally, the random effect assumptions include all fixed effects ones, plus the additional requirement for the unobserved effect a_i to be independent of all explanatory variables in all time periods.

$$Cov(x_{jit}, a_i) = 0 \tag{7}$$

This means that the covariance between the explanatory variables x_{jit} is zero for all units i at a time t. Because fixed effects allow for arbitrary correlation between a_i and the other explanatory variables, the literature believes this to be a more convincing tool for estimating ceteris paribus effects. To ensure that this is still valid for my research, following previous empirical studies approaches, I will also run the regression shown in equation 6 using random effects. Then I will test for the hypothesis of statistically significant difference between the estimates obtained with the random and the fixed effect models, using the *Hausman test*[16]. The idea of the Hausman test is that random effect should be used unless the test rejects such a hypothesis. A rejection of the Hausman test is taken to mean the key random effect assumption is false, and that fixed effect is the approach to use.

[16]From the name of the first to use such test in 1978, Jerry Allen Hausman, Professor of Economics at the MIT of Boston.

Finally, the fact that my dataset is unbalanced challenges the unbiasedness of the estimated parameters. Theoretically, a panel dataset is defined balanced when every cross-sectional unit in the sample is observed in the same year, for all different years included in the study. In this specific case, the panel dataset is strongly unbalanced since each country has its own frequency for its legislative elections. In addition, unexpected snap or recall elections contribute to increasing the degree of such an imbalance. The difficulty with unbalanced panel analysis consist of determining why the panel is unbalanced. Indeed, in case the absence of specific years is correlated with the idiosyncratic term u_{it}, then imbalance can cause bias. Nevertheless, in this case, elections are held in specific years at regular intervals of time and snap elections are completely random. Hence, I can conclude that "missing years" in the panel are not correlated with u_{it}. Thus, having an unbalanced panel dataset does not create further issues.

4 Data, Sample and Descriptive Statistic

4.1 Data

The main source of country electoral results is the ParlGov Database (Doring and Manow (2018)), which gathers all countries electoral results coming from the official national electoral offices. Eurostat provides with the data relative to income inequality for all countries included in the study. Eurostat represents also the main source of data for the majority of the control variables. Data relative to trust in national governments and EU institutions come from the Eurobarometer, a yearly survey conducted by the European Commission to monitor the evolution of public opinion in the Member States. From the World Bank database come the data relative to urbanization and foreign-born population. Data relative to perceived corruption come from Transparency International, which monitors the level of corruption in the majority of world nations since 1993.

4.2 Sample Description

In my thesis, I perform a cross-sectional study using a sample of 28 European countries for the period 2000-2018. The sample is summarised in *Table 5* in the technical appendix section. The binding constraint on the number of countries depends on two factors. The first one is data availability. Indeed, despite the fact that electoral results are available for European countries for every election, complete information for income distribution is available only for a limited number of countries. The second factor which limits the size of the sample consists of the criteria on which only countries with populist parties, as recognized by the *PopuList*, are included in the study. Hence, the sample is composed by 28 countries, of which 26 European Union member states, plus Norway and Switzerland.

Concerning the period of time on which my thesis is based, its choice has depended on two considerations. First, based on the existing literature about populism, there have already been periods in the history where populism was at its maximum levels, each one with its own peculiar features. The beginning of the 21st century is considered as the starting point of a new wave of populism (Mudde (2016)). After years of economic prosperity and certainty of the future, globalization and technological change have shown their disrupting force on global balances. The financial crisis in 2009 has accelerated the consequences of these shocks, forcing policymakers to deal with an additional social emergency.

Second, around the beginning of the 21st century, the modern institutional and economic structure of the European Union had been settled down. Indeed, the Amsterdam Treaty[17], amending the Maastricht Treaty[18], moved some competencies from a national to a European prerogative. The Nice Treaty[19] adapted the European institutions to the eastward enlargement of the EU. Under a monetary perspective, on the 1st of January 2001, the European Monetary Union became effective, making the European project closer to an Optimal Currency Area.

[17]Signed in 1997, came into force on 1st of May 1999
[18]Signed in 1992, came into force on 1st of January 1999, also know as Treaty on the European Union.
[19]Signed in 2001, came into force on 1st of February 2003.

With the delegation to the EU institutions of part of the national sovereignty and the complete loss of national monetary sovereignty, European economies have become as integrated and interdependent as never before. The (theoretical) synchronisation of business cycles and the existence of institutional structures and rules common to all democracies allow to study populism in a harmonised political-economical context.

In the last twenty years, in each country, there has been a minimum of four and a maximum of six elections to renovate the National Chambers, depending on eventual *snap* or *recall elections*[20]. Those elections provide 139 observations of the real values of populism in each country, reported as share of votes obtained by populist parties. Nonetheless, in those cases where the electorate has been called to vote a second time in less than eight months (as in Greece in 2012 and 2015), the results of the second election are excluded by the registrations. Indeed, the time distance between the two elections is too short either to allow the government to implement its policies, or for citizens to evaluate the work of the government. Hence, the second electoral results might be simply biased from the results of the previous elections. For the same reason, the study considers only electoral results relative to the first electoral round and excludes eventual ballots results.

For what concern the data relative to populism, this study collects the electoral results of 83 national parties considered populist. The populist classification has been done by the Amsterdam Institute for Social Science Research, The Guardian, and the ECPR Standing Group on Extremism and Democracy, which together have created the *PopuList*. The list consists of European parties that can be considered as populist and that have obtained at least 2% of the vote in one legislative election since 1998. Their classification is based on the definition given by the works of Mudde (2004), who defines populist all parties that endorse the set of ideas that "society is ultimately separated into two homogeneous and antagonistic groups, "the pure people" versus "the corrupt elite," and which argues that politics should be an expression of the general will of the people" (p. 562).

As mentioned previously, the decision to relay on the PopuList has specific consequences on the study. The first, direct consequence is represented by the selection of the European countries to include in the study. Countries such as Portugal and Malta are excluded from the analysis of populism because of this reason. Selection bias might also affects the external validity of the thesis results negatively. Indeed, the non-random selection of the countries to include in the study has an impact on the value of the elasticity of populism on income inequality, which might be inconsistent when applied to external contexts. Nonetheless, my study covers the 98% of the total European Union population and the 86% of the continental[21] population. Furthermore, the most politically weighting countries in the continent are included (Germany, France, United Kingdom, Italy, Spain, Poland and Hungary). Being the sample large and well representative of the European context, I can be confident that selection bias does not create sizable issues. Hence, I expect my results being valid also externally. Second,

[20]The term "snap" election stands for those elections called in an unexpected and irregular time. The term "recall elections" instead is a method of election in which voters can oust an elected official before his official term has ended.

[21]Countries like Armenia, Azerbaijan, Georgia, Kazakhstan, Russia and Turkey, albeit considered part of the European continent, are excluded from the counting.

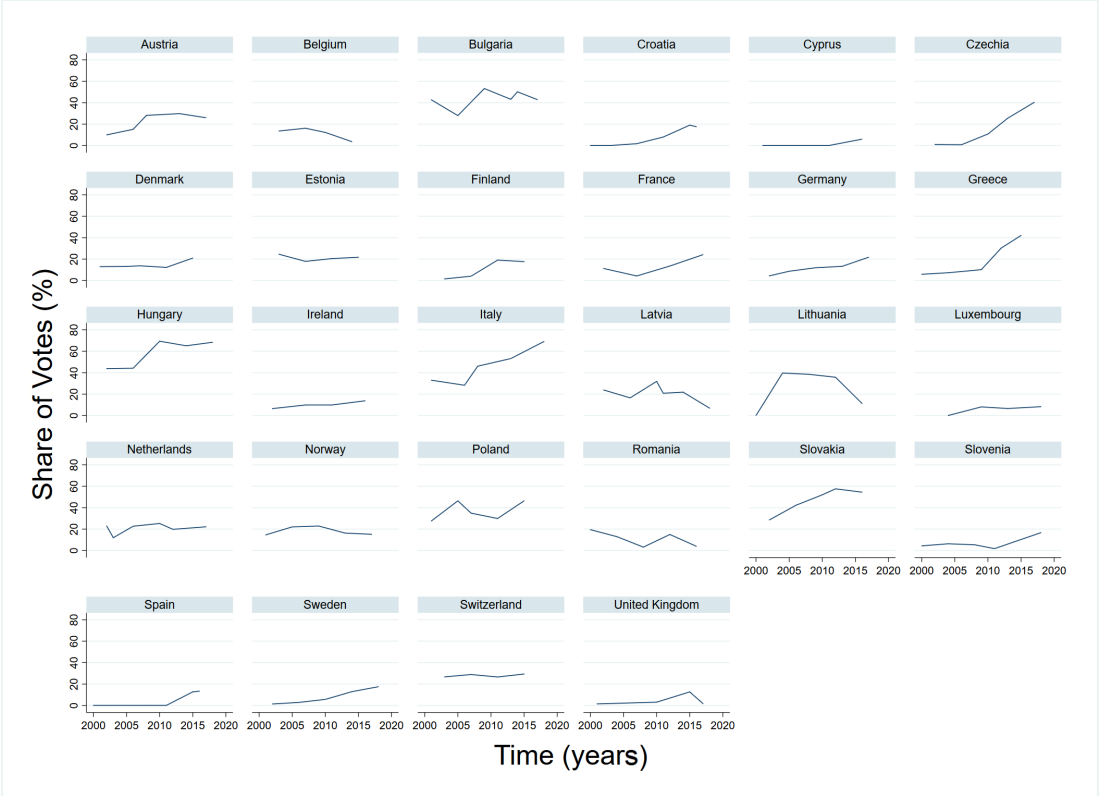
the classification excludes all parties which have never reached more than 2% of the share of votes in an election since 1998. This threshold leaves out all the very minor populist parties, biasing upward or downward the correct values of the elasticity of populism on inequality. This element might challenge the internal validity of my results, but the real impact of such choice is too minimal to have substantial effects on the estimates of the elasticities.

4.3 Descriptive Statistics

4.3.1 Populism trend

The breakthrough made by populism in the European political scene is not an isolated case in Europe. Nowadays, populism has gained strength in almost all European democracies as demonstrated by *Figure 1*. On the vertical axis are reported the shares of votes for populist parties. The value for each election year has been calculated summing all individual populist parties' shares for that specific election. On the horizontal axis is reported the time variable.

Figure 1: Populism trend by country (2000-2018)



Source: Personal elaboration of national electoral results.

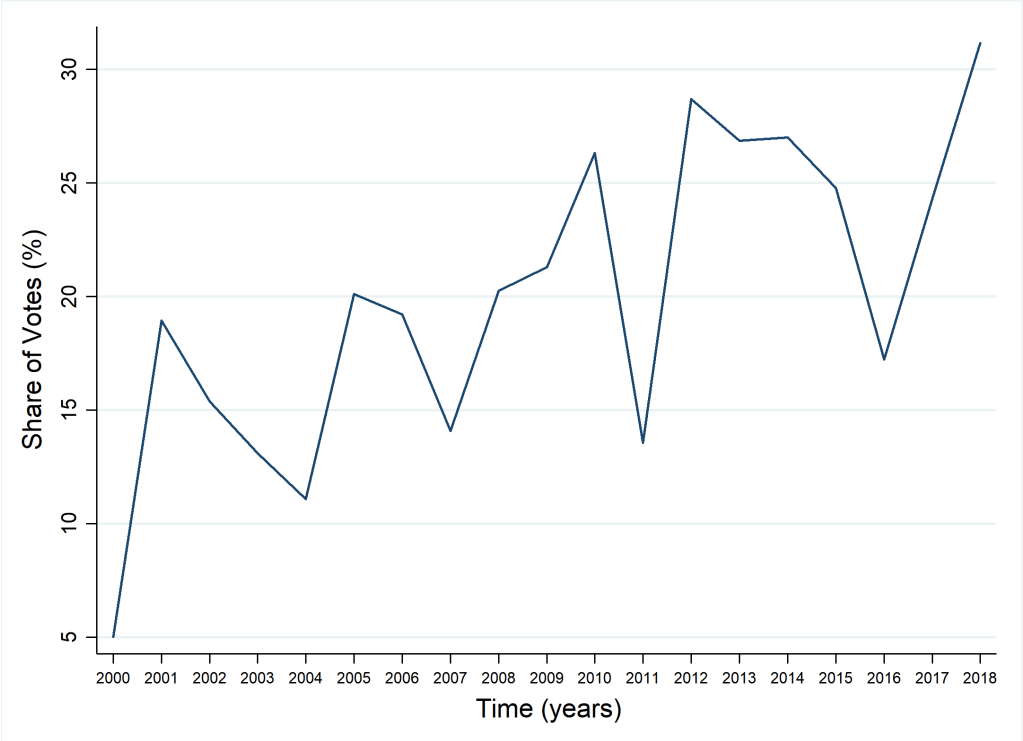
In most countries, the total share of votes obtained by populist parties in the last elections is higher than the one obtained in the first elections of the new millennium. In some cases, this increase is gradual (i.e. in Austria, Croatia, Finland, France, Germany, Ireland, Slovakia, Sweden), slow (Cyprus, Denmark, Ireland, Luxembourg, Netherlands) or minimal (Norway and Switzerland). In others, there is an important jump from an election to another (Bulgaria, Czechia, Greece, Hungary, Italy, Poland and Slovenia), where in most cases, the total share of votes for populist parties goes from around 20% to a over 40%. These trends have enabled most populists to win the majority of parliament seats to govern the country, disrupting the national

and European balances. Only in a limited number of contexts (Belgium, Latvia, Lithuania and Romania), populism is gradually losing support, even though in three of these countries populist parties still enjoy an important consensus.

The British case has been left out voluntarily. The United Kingdom has formally a multi-party system, but since 1920 the two main parties, the *Conservative Party* and the *Labour Party*, have alternated themselves in governing the Kingdom. In this context, the populist party UKIP has rather campaigned to convince the majority of British people to leave the EU. Nevertheless, once this aim has been reached, the party has vanished from the political scene.

Albeit *Figure 1* gives a fragmented picture of how populism has strengthened itself over the years, *Figure 2* shares the same information under a general European perspective. In this picture, populism is reported averaging all populist parties' electoral results in the specific election year. Although large drops and rises are determined either by varying sample size or composition of countries and relative populist parties, the figure shows clearly why today we are concerned with populism. In the first seven years of the new millennium, populist parties have often reached values close to 20% but they have failed in really breaking that limit. Still, even in these early years, populism was already slowly growing. Indeed, if in the first four years of the millennium the blue line has fluctuated around the 15% level, while in the following four, it has moved in the 15-20 percent interval. With the beginning of the economic crisis in Europe (2008-2009), populist parties have exploited the economic insecurity perceived by citizens to build their strength. At the end of the recession, populists were supported by more than 25% of the population, reaching a first historical high of 28% in 2012, a level 10% higher respectively to the pre-crisis levels.

Figure 2: European populism trend (2000-2018)



Source: Personal elaboration of National Electoral databases.

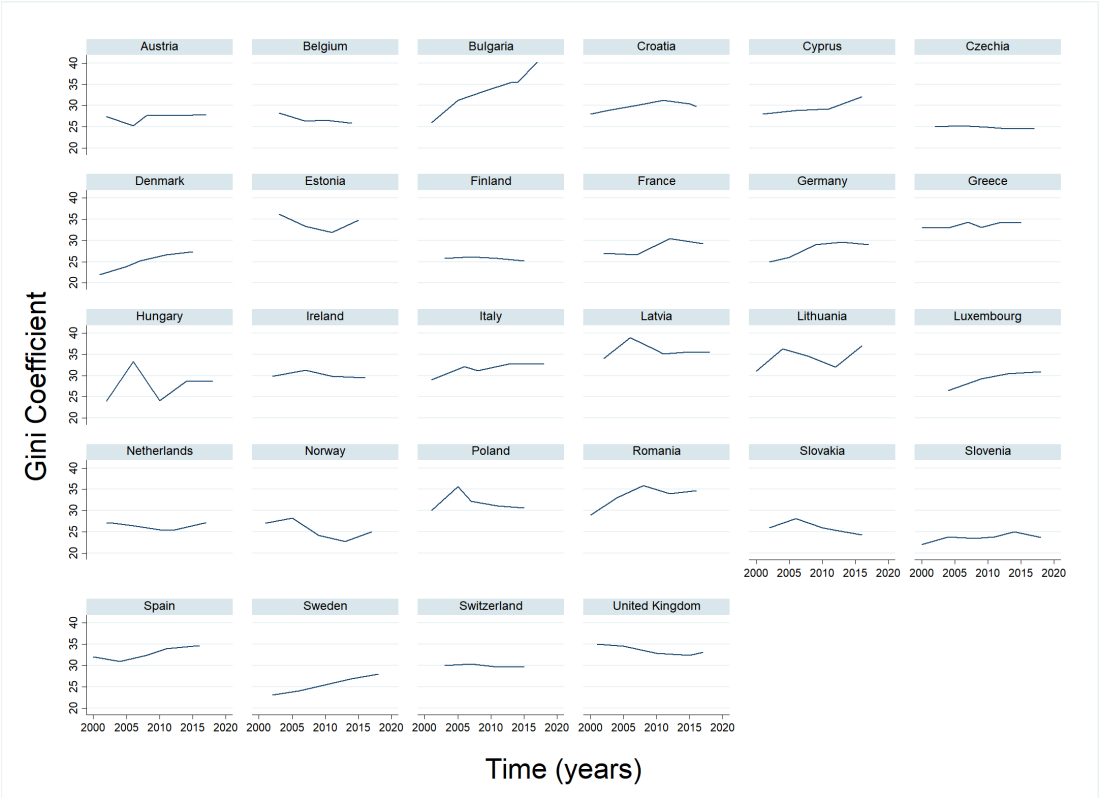
After four years of decline, in 2017 populism has returned to grow again, breaking for the

first time since the beginning of the time-series, the limit of 30% and setting in 2018 at a 31% of popular support. Although the figure does not show a smooth path, it suggests that the level reached by populist parties during the last 18 years has passed from 15% to more than 25%. If these results will be replicated in the next European elections in May 2019, the Union will deeply change, with unpredictable consequences.

4.3.2 Income inequality trend

To measure income inequality, I have relied on the *Gini coefficient of equivalised disposable income*, as defined by Eurostat. Gini coefficient is an index used to compute the level of inequality in an economy as a deviation from perfect equality going from a minimum of 0 (perfect equality) to a maximum of 100 (maximum inequality). Disposable income represents the total income of a household (after taxes and other deductions) that is available for spending or saving, while equivalised means that the disposable income is divided by the number of household members, converted into equalised adults. Hence, income inequality is measured accounting also for the redistribution capacity of the economy, meaning after all social transfers (pensions included). Another option would have been measuring income inequality before social transfers, basing the study on the "gross" national level of inequality. Still, the first type of measure matches the aim of the study more than the latter. Indeed, citizens' vote is not influenced by the absolute level of income inequality. When voting, citizens express a judgment or desire for a certain level of economic redistribution, hence evaluating the redistributive efficacy of the current social welfare system. Therefore, the Gini coefficient after social transfers seems to be a more appropriate measure for the goal of this thesis.

Figure 3: Income inequality trend by country (2000-2018)

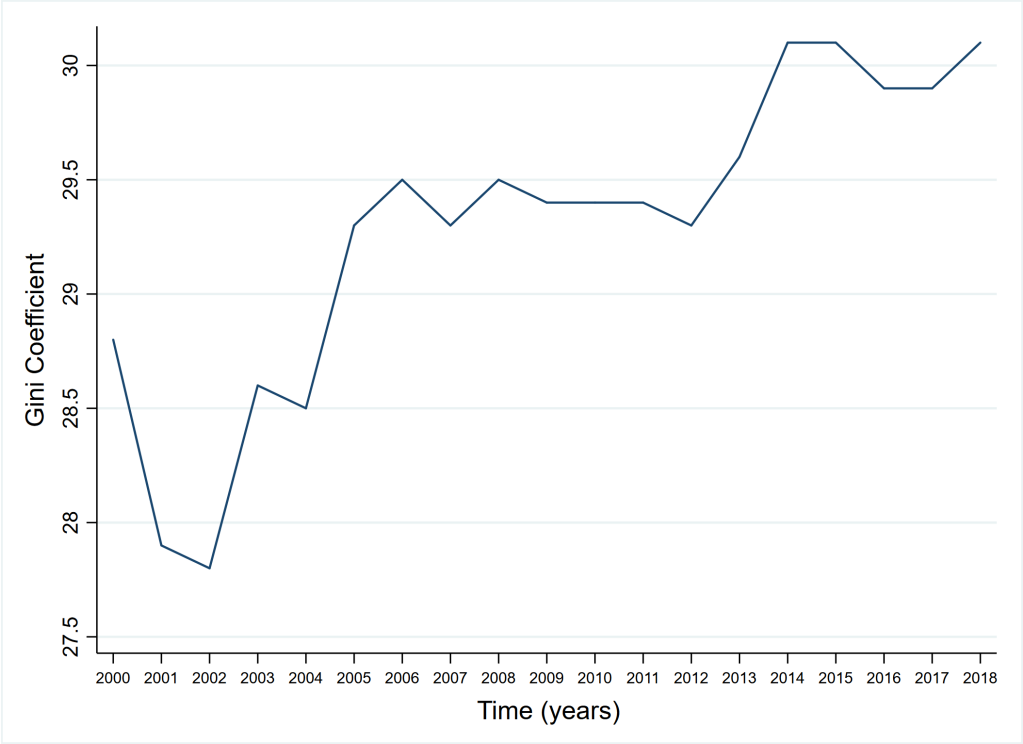


Source: Personal elaboration.

Figure 3 shows how income inequality has developed over the last 18 years in every country included in the study. On the vertical axis are reported the levels of Gini coefficient, while on the horizontal one is reported the time variable. Only Austria, Finland and Switzerland show a stable pattern, where not even the economic recession has really modified the level of Gini coefficient. Interestingly, in seven countries (Belgium, Czechia, Ireland, Poland and Slovakia) income inequality shows a slow but constant descending path. In a limited number of cases (Estonia, Netherlands, Norway and the United Kingdom), the Gini coefficient trend presents a clear "U" shape. Although an initial ability to redistribute resources in the economy, it seems that the redistribution schemes have stopped working properly.

Instead, the majority of European countries present a situation where inequality has constantly risen. Some economies have experienced relatively small variations of the Gini coefficient, as in the case of Greece (+1.2%), Latvia (+1.6%), Slovenia (+1.7%) and Croatia (+1.8%). In Denmark, Germany, Hungary, Italy, Luxembourg and Sweden, the increase in income inequalities has been considerable (between +3.7% and +5.4%), while in Bulgaria income inequality seems to be exploded (+14%). Averaging country-individual Gini coefficient changes from 2000 to 2018, I can conclude that income inequality has risen on average by 2.1% in Europe. *Figure 4* is probably more adept to see such an increase. The vertical axis reports the values of the Gini coefficient while the horizontal axis reports the time variable. The blue line shows income inequality developments in Europe, averaging the level of the Gini coefficient of all countries every year.

Figure 4: European income inequality trend (2000-2018)



Source: Personal elaboration of Eurostat database.

The figure confirms one more time that the rise of income inequality is visible and common to most economies. In the years before 2005 Gini coefficient has fluctuated around an average of 28.3 points, reaching in 2002 its minimum value (27.8). In 2006, after two years of continuous

rise, Gini coefficient reached a first high, at 29.5. Income inequality has fluctuated around that value until 2012, when it has started growing again. After two years, Gini coefficients has reached a pick of 30.1 points, its highest value since 2000, stabilizing itself around that new level.

The growth of Gini coefficient is evident and comparable to the pattern that populism had in the last 20 years. To this end, *Figure 5* plots together the general populist trend (*Figure 2*) and the general Gini coefficient trend (*Figure 4*). On the left vertical axis are reported the levels of Gini coefficient, while on the right vertical axis are reported the shares of the vote obtained at the elections by populist parties. The horizontal axis refers to the 2000-2018 time-frame.

Figure 5: Populism and Inequality trends (2000-2018)

Source: Personal elaboration.

Analysing the figure, it seems that populism and inequality trends fail to show a synchronised pattern. In several cases, populism and inequality have even opposite directions. Nevertheless, the figure suggests that they are still related. On average, for low (high) levels of income inequality correspond low (high) shares of votes for populist parties. More in details, as long as the Gini coefficient has remained below 29 points (2000-2005), populist parties have hardly received more than the 20% of popular support. During the years of the economic recession (2007-20011) the Gini coefficient has settled around 29.5 points, while populism has fluctuated around the 25% vote share. Then, when the Gini coefficient has jumped to 30 points (2013-2018), populist parties have started moving in the 25-30 percent interval.

To conclude, neglecting that income inequality has no role in influencing the success of populist parties would be incorrect. Still, it is also clear that income inequality is not the exclusive determinant of populism. Notably, each European country has cultural specific features that

shape populism and that determine its strength. Some countries have institutions with stronger defences against populism than others. In other countries, citizens oppose multiculturalism and globalization, showing an evident backlash against modernity and immigration. In others, the loss of sovereignty consequent to European integration has been lived as the main source of economic insecurity. Therefore, accounting for national particularities and different economic conditions, the next section is dedicated to testing the hypothesis of an existing correlation between populism and income inequality.

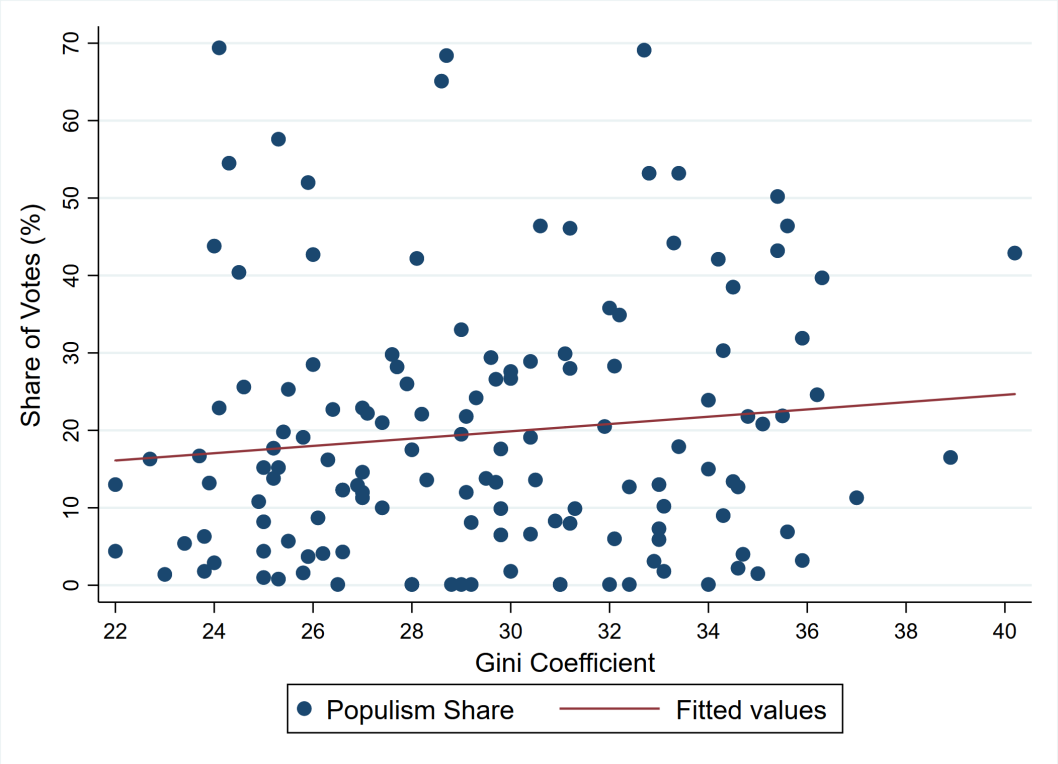
5 Results

5.1 Relationship between Populism and other factors

Figure 6 to *9* present scatter plots of populism in relation respectively to income inequality and demographic, economic and political characteristics. These graphs are meant to analyse the existing relationship between populism (on the vertical axis) and the different explanatory variables (on the horizontal axis) when they are considered individually. The red line (fitted values line) plots the direction of such a relationship.

Figure 6 confirms the existence of a positive relationship between income inequality and populism, although the slope of the fitted value line indicates that this relationship is somehow weak. This conclusion depends on the presence of some outliers, cases where to relatively contained inequality correspond extremely high levels of populism (as for Hungary and Slovakia, in the up-left side of the figure). As mentioned before, this evidence confirms that income inequality alone does not explain the totality of the variation in levels of populism. Still, when the Gini coefficient grows, populism is more likely to obtain higher support.

Figure 6: Relationship between Populism and Income Inequality

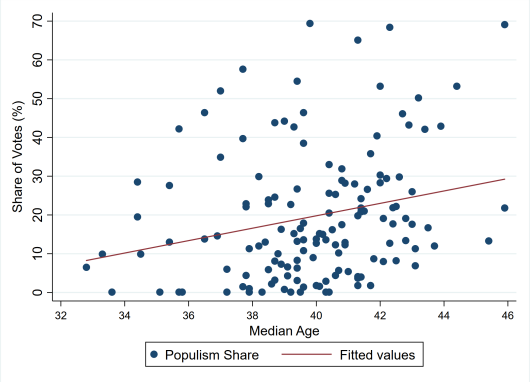


Source: Personal elaboration.

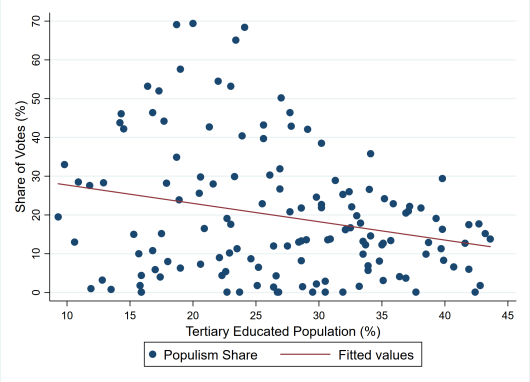
Variables other than inequality can slow down or accelerate the rise of populism. *Figure 7* evaluates the relationship between populism and standard demographic characteristics. As shown by section *(a)*, the upward slope of the fitted values line emphasises a strong positive relationship between age and populism. Interestingly, if the median age of the population is higher than 42 years old, there is hardly any country with a share of populism lower than 10%. Hence, the graph seems to suggest, in line with a wing of the literature, that ageing population represents an augmenting factor for populism.

Figure 7: Relationship between Populism and Demographic factors

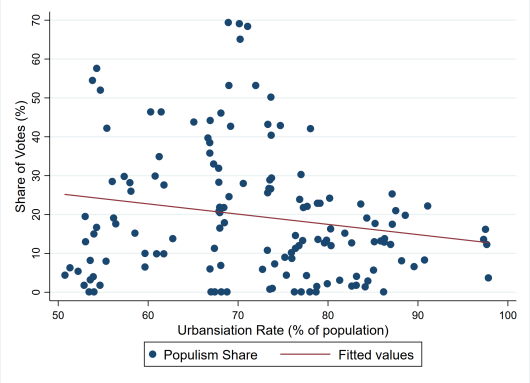
(a) Median Age



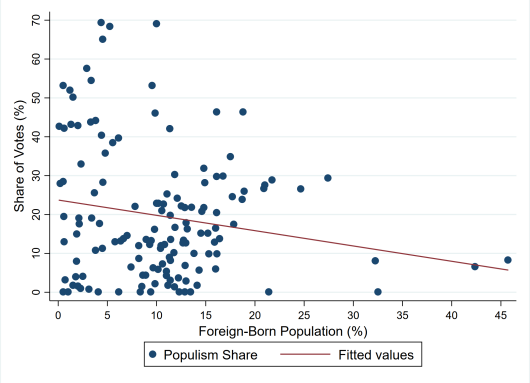
(b) Tertiary Education



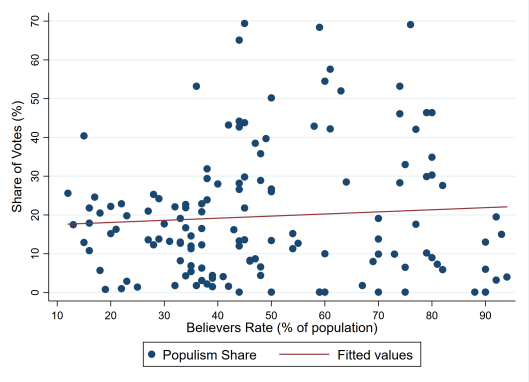
(c) Urbanization Rate



(d) Foreign-Born Population



(e) Religious population



Source: Personal elaboration.

Sections *(b)*, *(c)* and *(d)* present the interaction between populism and, respectively, tertiary educated population rate, urbanisation rate and foreign-born rate. These variables present all a negative relationship with populism.

Figure 7.b supports the conclusion that incentivising the population to invest in higher education would limit the success of populist parties. Indeed, not only are highly educated citizens more likely to understand the impact of populist policies on the economy, but they also enjoy less economic insecurity, as described in the literature. Thus, citizens with a tertiary degree might find fewer benefits from voting populist parties. The figure highlights that if more than 30% of the population has at least a bachelor degree, the share of citizens voting for

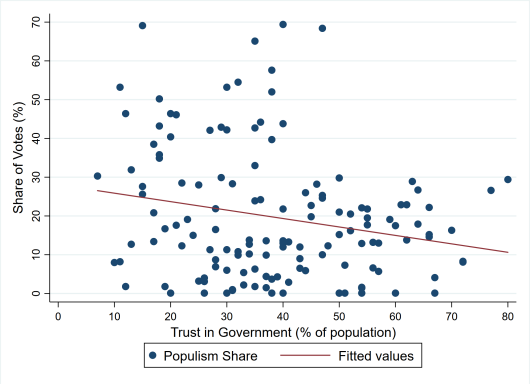
populists is rarely higher than 30%. If the tertiary educated citizens represent more than 35% of the population, then populist parties hardly receive more than 20% of the popular support.

Section *(c)* of *Figure 7* shows that less urbanised economies are more likely to vote for populist parties, where urbanisation is measured as the percentage of population living in highly concentrated areas. If more than 80% of the population lives in highly dense areas, populists have more difficulties in reaching shares higher than 25%. Moreover cities are usually populated by young individuals, they are more ethnically mixed than the countryside, and usually, offer better employment opportunities to professionals. Those are all elements which can prevent populism from succeeding.

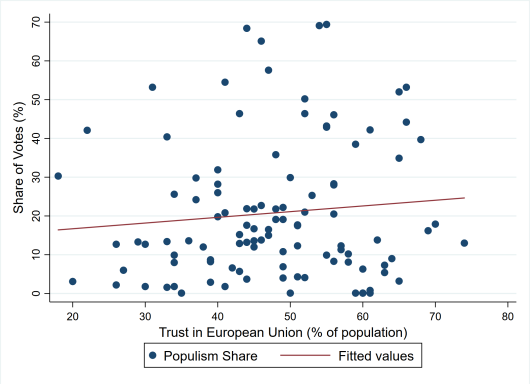
Section *(d)* might appear puzzling, showing that if immigrant population rises, then populism is negatively affected. Two arguments could justify such evidence. First, foreign-born population is less likely to support parties that campaign against them. Second, countries with a higher rate of immigrants might be more open to multiculturalism. At the contrary, countries with a relatively low percentage of immigrants are more uncomfortable with immigrants, thus more prone to support measures that limit the inflow of people. Finally, section *(e)* shows a positive but not meaningful relationship between religiosity and populism.

Figure 8: Relationship between Populism and Political factors

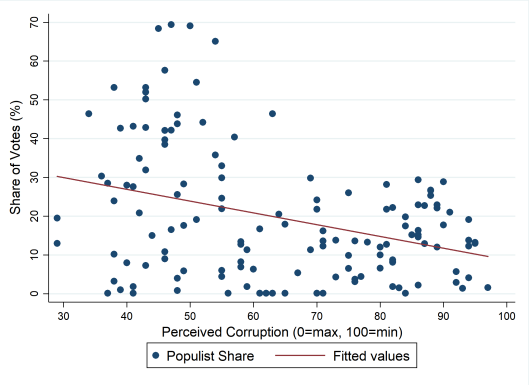
(a) Trust in Government



(b) Trust in European Union



(c) Perceived Corruption



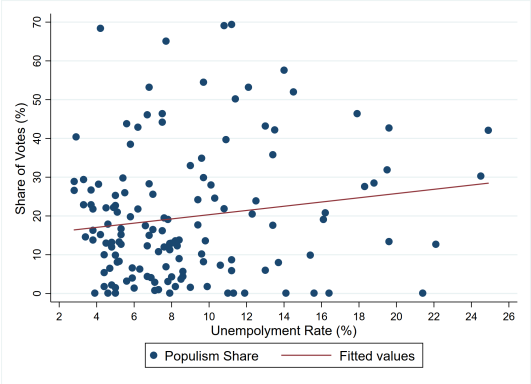
Source: Personal elaboration.

Figure 8 describes the relationship between populism and different political variables. Section *(a)* and *(b)* relate populism respectively to trust in National governments and trust in European institutions. As expected, populism is negatively correlated with trust in government. If the majority of people supports the work of its government, there is no reason to give the vote to a populist party which aims to break the political order. Still, if lower levels of trust help populists in collecting more votes, it seems that higher levels of trusts do not prevent them from obtaining a considerable share of votes. Instead, *Figure 8.b* shows that despite a weak relationship, higher levels of trusts in the European Union correspond somehow to higher levels of populism. Such a picture might be driven by the evidence that European populist parties do not share the same views when it comes to deal with European Union, and so does their electorate.

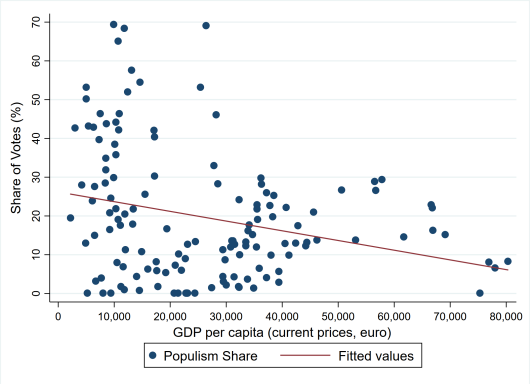
Figure 8.c presents the relationship between populism and perceived corruption, used as a proxy to account for social cohesion. As expected, countries where citizens perceive more corruption, are also those where populism is at its highest levels. Once citizens do not perceive their society as corrupted (right side of the graph), populists lose an important part of their rhetoric. Citizens are less likely to believe that the political elite is corrupted, and the social cohesion remains high.

Figure 9: Relationship between Populism and Economic factors

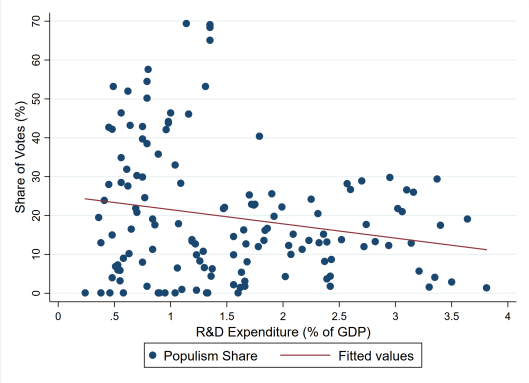
(a) Unemployment Rate



(b) GDP per capita



(c) Technological Shock



(d) Globalization Shock

Source: Personal elaboration.

The four sections presented in *Figure 9* evaluate the interaction existing between populism and specific economic factors. Sections *(a)* and *(b)* analyse factors which capture the business cycle of the economy, meaning unemployment rate and real GDP per capita. Increasing levels

of unemployment, as expected, encourage citizens to vote for populist parties. At the opposite, rising income seems to lower that support, suggesting that wealthier economies do not see the advantage of supporting populist proposals. Augmenting factors of economic insecurity affect populism positively, while anything that reduces such insecurity impacts populism negatively.

Figure 9.c and *Figure 9.d* relate populism to technological and globalization shocks. The graphs support the evidence produced by the past literature on voting behaviour and economic shocks. As a proxy for the technological shock, I have relied on the governmental expenditure in research and development. Doing so, I assumed that economies that invest more in technology are also those capable of exploiting its advantages rather than suffering the negative side effects. This assumption seems to be confirmed by the graph. To account for international trade shocks, I use the level of employment in manufacturing as a proxy, this sector being the one hit the most by globalization. In section *(d)*, the slope of the fitted values line suggests that there is a strong positive relationship between employment in manufacturing and populism. Not surprisingly, if an increased share of the population is employed in manufacturing activities, the number of citizens hit by international trade grows. Populist parties can exploit the increasing economic insecurity of this portion of citizens to enlarge their electorate.

5.2 Regression Results

This section analyses the results of several regression specifications. *Table 2* reports the estimates of equation 6, where the key coefficient is the elasticity of populism on income inequality. *Model (1)* presents the baseline estimate, while *Model (2)* includes traditional demographic factors. Then, in *Model (3)* economic factors are added to the regression, including the proxies for technological and globalization shocks. Finally, in *Models (4)* to *(6)*, the inequality estimate is adjusted introducing the political variables. All models presented in the table are estimated adjusting for region, country and time fixed effects.

Model (1) of *Table 2* below shows that the baseline elasticity of populism to income inequality equals 3.77. This implies that a 1% increase in inequality results in a 3.8% increase in the share of votes obtained by populist parties in Europe. If income inequality increases by 3%, the share of voters of populist parties increases by 11.4%. This means that a party with already 25% of popular support would see its share reaching almost the 28%. The estimate is significant at a 95% level of confidence.

Demographic characteristics may impact the baseline estimation of income inequality. Therefore, *Model (2)* corrects for such elements. The size of the estimate for Gini coefficient slightly decreases while the significance increases. Although all demographic variables are not statistically significant, some have a large impact on populism. For instance, the latter responses negatively to rising age. The elasticity of populism on age ranges between -10.5% and -13.9%. The negative sign of the estimate contradicts what shown in *Figure 7.a*, where a positive relationship between the two variables was suggested. Nonetheless, when analysed accounting for the effect of other variables, such relationship becomes negative. Pollock et al. (2015) investigate in details the relationship between youth and populism surveying 17,000 individuals (16-25 years old) from 30 locations in 14 European countries. They find that young adults have a variety of different political ideologies, some of which corresponding to populist positions, others with left-wing values. Such variety depends on location and regional trends. They show

that macroeconomic conditions are relevant factors that shape young people's political views. If such conditions are negative, young adults are more likely to support populism. The OECD first in 2014 (OECD (2014)) and again in 2017 (OECD (2017)) has highlighted that during the four years since the start of the economic recession, young individuals have been those who have experienced the most dramatic income loss, while elderly individuals (over 65) were mostly ensured from the economic crisis' effects. Moreover, over the past thirty years, the age profile of poverty has shifted, with the youth substituting the elderly as the cohort at highest risk of poverty (OECD (2015, 2016)). As demonstrated by Guiso, Herrera, Morelli, and Sonno (2018) economic insecurity is well known for boosting support for populism. Hence, while the elderly have no incentives to support populist parties, populist rhetoric appeals to young voters who suffer from increased economic uncertainty. Exactly as theorised by Pollock et al. (2015).

Table 2: Regression Table Fixed Effects

Log (Variable)	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Gini	3.769**	3.637**	3.693**	3.372**	3.451**	3.066**
	(1.734)	(1.516)	(1.414)	(1.475)	(1.437)	(1.443)
Median Age		-11.06	-11.73	-13.88	-10.43	-12.65
		(10.85)	(12.25)	(11.38)	(12.09)	(11.28)
Believers in God		-0 .455	-0.274	-0.139	-0.470	-0.323
		(1.305)	(1.395)	(1.262)	(1.352)	(1.219)
Tertiary Education		-1.525	-2.336	-2.286	-2.503	-2.405
		(1.812)	(2.104)	(2.049)	(2.116)	(2.083)
Urbanisation Rate		-2.876	-9.471*	-7.270	-9.734*	-7.713
		(5.564)	(5.131)	(5.203)	(5.055)	(5.101)
Foreign Population		-0.090	-0.037	-0.094	-0.0003	-0.064
		(0.255)	(0.192)	(0.224)	(0.211)	(0.234)
GDP per capita			-2.066*	-2.204	-2.474*	-2.496*
			(1.200)	(1.380)	(1.453)	(1.398)
Unemployment Rate			0.273	0.0274	0.313	0.553
			(0.602)	(0.643)	(0.602)	(0.662)
R&D Expenditure			-0.949	-1.000	-0.996	-1.045
			(1.013)	(0.923)	(1.018)	(0.926)
Manufacture Empl. Rate			2.159	1.757	2.076	1.761
			(1.960)	(1.731)	(1.872)	(1.730)
Perceived Corruption				0.930	0.348	0.865
				(1.728)	(1.711)	(1.688)
Trust in Government				-0.642		-0.628
				(0.555)		(0.559)
Trust in EU					0.195	0.183
					(0.183)	0.167
Year Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Region Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	139	139	139	139	139	139
Countries	28	28	28	28	28	28
R^2–*within*	0.451	0.481	0.519	0.534	0.525	0.538
R^2–*between*	0.053	0.039	0.025	0.016	0.028	0.019
R^2–*overall*	0.000	0.011	0.044	0.040	0.045	0.041
Rho	0.879	0.812	0.941	0.934	0.947	0.940

Standard errors in parenthesis. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Tertiary Education affects populism negatively, where a 1% increase in the share of population with at least a bachelor degree is expected to reduce populist support by 1.5 to 2.5 percent. Albeit statistically insignificant, this result is consistent with the expectations. Education not only provides better job opportunities, but it theoretically provides a higher capacity to understand the impact on the long run of the proposals made by populist parties. As stressed already in the literature review, populists support expansionary policies by weighing on the deficit-to-GDP ratio. In the future, the increased public debt will be translated in increased taxation for the citizens. If voters understand this causal chain, they will be less likely to support populism. In addition, higher education ensures more and better remunerated job opportunities,

lowering the possibility to suffer from economic shocks. Reduced economic insecurity lowers the likelihood of voting for populist parties.

Urbanization Rate is the other demographic factor with a sizable effect on populism. The relationship with populism is negative and the relative elasticity ranges between -2.9 and -9.5, depending on the inclusion of economic and political variables. These results confirm the findings of previous studies. Highly dense areas such as big cities, are often seen as places where inequality is exacerbated, with areas extremely wealthy and others largely poor. As Glaeser (2011) explains, it is not the city that creates poverty, but poor people are attracted to the city. Nowadays cities are places that can provide the necessary opportunities to escape from poverty. Indeed, the same author shows that people living in less dense areas are at a higher risk of poverty than their peers living in cities. Finally, big cities tend to be more ethnically mixed, and with a high concentration of highly educated individuals. All these factors make inhabitants less prone to support populist parties. Finally, *Foreign-Born population* and *Belief in God*, proxies for immigration and religious diversity, have a negative and insignificant elasticity. In particular the first variable shows that the amount of immigrants has basically a null impact on populism. This might be the result of two contrasting effects. On one side, foreign-born individuals are less likely to vote for parties which often stand against them. At the same time, if their presence in the territory increases, (right-wing) populist parties might use such rises to enlarge their electorate by proposing limitations to immigration.

As suggested by the literature on voting behaviour, the state of the economy affects the voting decision as much as economic shocks. *Model (3)* shows that when including economic variables, the magnitude of the elasticity of inequality rises to a coefficient of 3.7, value significant at a 98% level of confidence. Overall, the effect on populism of the economic variables is in line with the expectations, but the elasticities are all insignificant. If real GDP per capita increases by 1%, the chance of voting for a populist party decrease by 2 to 2.5 percent. High levels of income are intrinsic insurances against economic insecurity, which makes supporting populist parties less likely. For the same reason, if unemployment rises, the share of supporters for populist parties rises as well. Still, the estimate for unemployment is too small to expect a sizable impact on populism. This result might be driven by two possible elements. First, many European welfare states have social security schemes in place that protect unemployed citizens. If these schemes are in place and are effective, then the economic insecurity created by the unemployment condition is reduced. Thus, voting for populist parties is not necessary. Such a hypothesis is validated by the findings of Vlandas and Halikiopoulou (2018). Second, Algan et al. (2017), assessing Great Britain's vote for Brexit, find that the relative change in unemployment, rather than its level, was a strong predictor of voting for leaving the EU. Hence, it might be more efficient to use a change variable (Δ *Unemployment Rate*) rather than level variable (*Unemployment Rate*).

Model (3) shows also that populism is affected by the exposure to globalization (*Employment in manufacture*) and by technological change (*R&D expenditure*). Concerning globalization, its estimate suggests that voting for a populist party is more likely among those who are highly exposed to international trade. The elasticity between manufacture employment and populism settles around 2%, although this value is not statistically significant. This happens possibly because high-tech and high-skill intensive manufacturing sectors suffer less from the cheap and low-tech international competition, as usually reported by the literature on this topic.

Hence, those employed in these activities are better off after the globalization shock. This explains also why the coefficient of R&D expenditure has a negative sign. Indeed, if an economy invests more in developing new technologies and/or techniques it enables itself to acquire the necessary capacity to grow economically and to remain competitive. The estimate shows that if the expenditure rises by 1%, there is a reduction in support for populism of roughly 1%. Nevertheless, the magnitude and significance of the proxy for technological shock are relatively small, possibly because, as seen in the literature review, technological change can be harmful for specific sectors. Due to the fact that the transition towards a supply of high-skill jobs can be slow in the economy, technological change produces economic insecurity (job and wage polarization), ultimately boosting populism.

Finally, models *(4)* to *(6)* adjust the estimate of income inequality by adding political variables. Both size and significance of inequality are driven down by such variables, but the elasticity for Gini coefficient remains statistically significant and at values between 3.4 and 3.1 percent. Trust in the governing class impacts voting behaviour negatively. Understandably, when trust increases, populism does not find the preconditions to succeed. The elasticity of populism to trust in government is not significant. In this setting, the importance claimed by several studies on the role of trust in the work of national institutions is denied. Nonetheless, the sign of the elasticity is in line with previous studies. On the other hand, the elasticities of populism to corruption and to trust in European institutions are positive. In the first case, the elasticity suggests that if society reduces its level of corruption, populism increases by 0.3% to 0.9%. This is similar to claims that social cohesion is positively correlated with populism, going against the evidence produced so far. Still, these values have a negligible magnitude and they are not significant. Similarly, trust in EU institutions does not have a meaningful effect and significance either, although the relationship maintains the direction suggested by *Figure 8.b*, when this variable is plotted ignoring the effect of the other variables.

5.3 Robustness Checks

European-regions and country-specific units are good enough to analyse a political phenomenon such as populism, which varies based on the different contexts in which it develops itself. Thus, by including regional and country unit fixed effects, I can be quite confident that possibly omitted location variables have been accounted for. Including time specific trends reinforces such a conclusion because it controls for variables that are constant across entities but vary over time, and that influence both populism and income inequality.

Nonetheless, random effects would have been an alternative identification strategy to the fixed effects one. Indeed, in addition to the conditions required by fixed effects, random effects assume that unobserved effects are uncorrelated with each explanatory variable used in the regression. If this is true, then random effects would be a more efficient strategy to estimate the elasticity of populism on inequality. To test whether this is the case, I have run a Hausman test, which compares the estimates obtained with the two approaches. The test rejects the additional assumption made by random effects and instead confirms that fixed effect is the best approach.

Still, to formally test for the validity of the conclusions driven by the estimates shown in *Table 2*, I rely on two different robustness checks. The first investigates the impact on the

elasticity of populism on income inequality when the business cycle proxies are converted from level variables to change variables. Indeed, as mentioned in the previous section, Algan et al. (2017) notice that voting behaviour is more responsive to changes in unemployment rather than to its levels. The same argument might equally applies to the variable which measures the real GDP per capita. Understandably, when the economy grows, individuals do not perceive economic insecurity as much as when the economy is in a contracting stage. This means that adjusting the regression with these new proxies for economic insecurity could have an impact on the estimates for income inequality. Moreover, it is understandable to expect that these variables have a higher explanatory power than their correspondent level ones. Thus, I test the validity of the relationship between income inequality and populism applying such twists. *Table 3* summarises the relative results using the same regression models from *Table 2*.

Table 3: Regression Table Fixed Effects with Δ Unemployment and Δ GDP

Log (Variable)	Model (3)	Model (4)	Model (5)	Model (6)
Gini	3.618**	2.763*	3.189**	2.546*
	(1.473)	(1.445)	(1.455)	(1.463)
Median Age	-12.72	-17.22	-12.00	-16.51
	(13.51)	(11.99)	(13.24)	(11.79)
Believers in God	-0.460	-0.079	-0.535	-0.207
	(1.429)	(1.244)	(1.403)	(1.184)
Tertiary Education	-1.855	-1.759	-1.888	-1.802
	(1.844)	(1.815)	(1.906)	(1.827)
Urbanisation Rate	-4.547	-4.418	-5.965	-4.503
	(5.201)	(5.414)	(5.076)	(5.308)
Foreign Population	-0.121	-0.191	-0.109	-0.181
	(0.232)	(0.224)	(0.219)	(0.230)
Δ GDP per capita	-0.119	0.140	-0.081	0.138
	(0.109)	(0.173)	(0.113)	(0.167)
Δ Unemployment Rate	0.026	0.004	0.032	0.014
	(1.134)	(0.145)	(0.136)	(0.148)
R&D Expenditure	-0.824	-0.944	-0.868	-0.973
	(1.014)	(0.917)	(1.038)	(0.927)
Manufacture Empl. Rate	1.231	1.526	1.563	1.505
	(1.873)	(1.719)	(1.813)	(1.578)
Perceived Corruption		-0.146	-1.047	-0.255
		(1.605)	(1.622)	(1.578)
Trust in Government		-0.919		-0.908
		(0.596)		(0.593)
Trust in EU			0.119	0.116
			(0.207)	(0.179)
Year Fixed-Effects	Yes	Yes	Yes	Yes
Region Fixed-Effects	Yes	Yes	Yes	Yes
Observations	139	139	139	139
Countries	28	28	28	28
R^2–*within*	0.495	0.522	0.500	0.524
R^2–*between*	0.003	0.006	0.001	0.005
R^2–*overall*	0.030	0.017	0.041	0.019
Rho	0.817	0.867	0.837	0.864

Standard errors in parenthesis. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

If compared to the model of *Table 2*, the magnitude of the estimate for the Gini coefficient in *Model (3)* of *Table 3* has a negligible change, remaining around 3.6%, value significant at a 95% level of confidence. As expected from the previous results, the elasticity is affected more by the political variables. The elasticity of Gini now ranges between 3.2% and 2.6%, with a level of significance between 90 and 95 percent. Besides, if compared to the relative level variable, the estimate of the change in GDP becomes negligible and loses all its significance. For what concerns unemployment, the result relative to the change variable does not confirm the evidence produced by Algan et al. (2017). The estimates for unemployment has a minor and insignificant effect on populism. To conclude, the elasticity of populism on inequality is

not heavily affected by the changing assumption of the economic variables, meaning that the regression already accounts well for changing economic conditions.

The second test for the validity of the relationship between populism and income inequality is made by analysing this relationship from a different perspective. Rather than using Gini coefficient, which gives a general picture of the level of inequality in the economy, I rely on the level of concentration of income in the hands of the richest individuals of the society. This information can be obtained observing the national income distribution, which registers the share owned by citizens, from the poorest to the richest percentile of the distribution. Targeting directly the wealthiest individuals within a society, I can obtain information about the share of the national income they own. Indeed, those citizens are viewed as the elite of society. The more income is concentrated in their hands, the higher is their political weight. In this conditions, populist rhetoric finds well its roots of existence. Thus, if politics is influenced by the amount of income owned by the elite, then this evidence confirms one more time that income distribution, and consequently income inequality, affects the strength of populism.

Table 4: Regression Table - Top 10% as main explanatory variable

Log (Variable)	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Top 10%	3.593**	3.284**	3.651***	3.417**	3.402**	3.162**
	(1.528)	(1.364)	(1.296)	(1.380)	(1.408)	(1.419)
Median Age		-10.930	-11.61	-13.89	-10.33	-12.67
		(10.90)	(12.30)	(11.37)	(12.18)	(11.29)
Believers in God		-0.271	-0.108	-0.007	-0.319	-0.191
		(1.301)	(1.374)	(1.256)	(1.325)	(1.201)
Tertiary Education		-1.580	-2.414	-2.324	-2.559	-2.433
		(1.733)	(2.026)	(1.968)	(2.040)	(2.007)
Urbanisation Rate		-3.199	-10.19*	-7.902	-9.734**	-8.296
		(5.547)	(5.103)	(5.189)	(5.074)	(5.131)
Foreign Population		-0.073	-0.022	-0.089	-0.012	-0.060
		(0.073)	(0.184)	(0.220)	(0.203)	(0.231)
GDP per capita			-2.401*	-2.462	-2.723*	-2.647*
			(1.223)	(1.467)	(1.539)	(1.489)
Unemployment Rate			0.244	-0.017	0.280	0.143
			(0.594)	(0.630)	(0.594)	(0.651)
R&D Expenditure			-0.848	-0.903	-0.902	-0.953
			(1.032)	(0.946)	(1.041)	(0.948)
Manufacture Empl. Rate			2.242	1.850	2.181	1.848
			(1.948)	(1.727)	(1.866)	(1.725)
Perceived Corruption				0.832	0.210	0.781
				(1.746)	(1.734)	(1.710)
Trust in Government				-0.671		-0.654
				(0.558)		(0.561)
Trust in EU					0.196	0.180
					(0.193)	(0.174)
Year Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Region Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	139	139	139	139	139	139
Countries	28	28	28	28	28	28
R^2–*within*	0.453	0.479	0.522	0.538	0.527	0.543
R^2–*between*	0.047	0.032	0.033	0.023	0.035	0.025
R^2–*overall*	0.000	0.020	0.049	0.045	0.050	0.046
Rho	0.870	0.794	0.949	0.941	0.953	0.947

Standard errors in parenthesis. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

To test for the new hypothesis of a positive correlation between populism and income owned by the elite, I collected information from Eurostat about the share of income owned by the top 10% of the income distribution. This index substitutes the Gini coefficient as the main independent variable. *Table 4* reports the results of this test, where the log-linear specification of the regression allow us to interpret the estimates as elasticities. The estimates of the elasticity of populism on the share of income owned by the top 10% reflect closely the results presented

in *Table 2* when regressing populism on the Gini coefficient. These new estimates show that a 1% increase in the share owned by the top 10% results in a rise of votes for populist parties that ranges between 3.2 and 3.7 percent. Besides, all estimates for the main independent variable are significant at a 95% and 99% interval of confidence. Finally, robust standard errors solve for eventual heteroskedasticity and serial correlation. Hence, this robustness check corroborates my hypothesis that voting behaviour is affected by the distribution of income within society. The higher the amount concentrated in the hands of the elite, the more unequal a society is and the stronger the populism becomes.

6 Conclusion

In this thesis, I analyse the trends of two socio-economic phenomena that have characterized the first twenty years of the 21st century, named income inequality and populism. While in 2018 income inequality has settled at its highest levels in most European democracies, electoral preferences for populist parties are at their maximum since the creation of the European Union. The impact that populism is expected to have on the European elections in May 2019 is an unprecedented and unpredictable event.

In Europe, populism is shaped differently based on the context in which it grows, a context that varies in each country. In some democracies, there is a rising backlash against multi-culturalism and progressive values. In others, especially after the financial crisis, the social contract between citizens and government is broken. Trust in government, economic insecurity, globalization are some of the many factors that have contributed to the rise of populism in Europe.

Although populism is not a new phenomenon to European democracies, a critical question remains yet without an answer. Why does populism become influential at specific points in time? This thesis strives to find an answer to this question by assuming that rising inequality is a fundamental element which creates the preconditions for the success of populism. Indeed, in a context where globalization and technological change have heavily impacted the labour conditions (wages, demand of skills, etc.) and a financial crisis that has deeply affected European welfare states, inequality has rapidly increased over the last 10 years. The evidence that populism has gained support when income inequality has risen to its historical highs suggests that the two phenomena are likely correlated.

To test my hypothesis, I perform a cross-sectional analysis using a sample of 28 European countries followed over the period 2000-2018. In total, the study collects the electoral data of 83 populist parties. The selection of these parties has depended on the PopuList, which offers an academically based classification of all European populist parties. To measure income inequality I rely on the Gini coefficient of equivalised disposable income. This index measures the level of income inequality in a specific economy after all social transfers, meaning after the redistribution action of the national welfare schemes. Due to its features, this index seems to be adequate for a study where the vote expressed by citizens is strongly dependent on such elements. The identification strategy used is country and time fixed effects. Notably, country fixed effects separate the impact of inequality on populism from other unobserved and correlated determinants of populism not captured in the regression. Adding macro-regional dummy variables adjusts for eventual macro-regional fixed effects. Simultaneously, time fixed effects account for the influence of factors specific to each location that affect populism over time. These adjustments ensure that the estimates obtained from the regression will be unbiased. Furthermore, I account for those demographic, economic and political variables which have been demonstrated to be correlated with populism. Finally, using a log-linear specification allows interpreting the estimates obtained from the regressions as elasticities.

The regression results show that the elasticity of populism on income inequality settles at values between 3.1% and 3.8%. In a country where the 20% of citizens supports already populist parties, a consistent rise in Gini coefficient of 5% (as for countries like Sweden, Denmark or Hungary) would provide the populist party with a 3.1 to 3.8 percent additional share.

The estimates of the elasticity of populism on income inequality are significant and robust to heteroskedasticity and serial correlation. Therefore, the main hypothesis of existing and significant positive relationship between populism and inequality is validated.

The size of the elasticity of populism on income inequality might vary based on classifications of populism with assumptions different from the PopuList ones. Still, the list is based on a widely accepted definition of populism, and it is the outcome of a collaboration of 30 academic personalities. Therefore I can conclude that the results obtained for my sample of 28 European countries are quite solid, an that income inequality is a key element to understand populism.

The study suggests several directions for further research. It would be important to conduct additional robustness tests, analysis the past waves of populism under the income inequality motive. Moreover, it would be interesting to include models of partisan affiliations with populist parties (hence not only voting, but also distinguishing between Left and Right populism), to replicate the results and see whether not only the results are confirmed, but also if income inequality has any role in shaping voters ideology. At the same time, it is important to understand populism, the consequences of its rise but especially its causes. And from this latter perspective, the implications of the findings of this study from a policy point of view are clear. Policymakers should either tackle the sources of income inequality directly or improve the existing redistribution plans, because populism grows as a response to unequal societies. Denying the role of specific cultural factors in determining the demand for populism would be a mistake. Still, the reasons behind rising populism can no longer be ignored. The call for redistribution is clear.

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7 Appendix

Table 5: List of Countries and relative Election Years

Abbreviation	Country	Election Year
AT	Austria	2002, 2006, 2008, 2013, 2017
BE	Belgium	2003, 2007, 2010, 2014
BG	Bulgaria	2001, 2005, 2009, 2013, 2014, 2017
HR	Croatia	2000, 2003, 2007, 2011, 2015, 2016
CY	Cyprus	2001, 2006, 2011, 2016
CZ	Czechia	2002, 2006, 2010, 2013, 2017
DK	Denmark	2001, 2005, 2007, 2011, 2015
EE	Estonia	2003, 2007, 2011, 2015
FI	Finland	2003, 2007, 2011, 2015
FR	France	2002, 2007, 2012, 2017
DE	Germany	2002, 2005, 2009, 2013, 2017
EL	Greece	2000, 2004, 2007, 2009, 2012, 2015
HU	Hungary	2002, 2006, 2010, 2014, 2018
IE	Ireland	2002, 2007, 2011, 2016
IT	Italy	2001, 2006, 2008, 2013, 2018
LV	Latvia	2002, 2006, 2010, 2011, 2014, 2018
LT	Lithuania	2000, 2004, 2008, 2012, 2016
LU	Luxembourg	2004, 2009, 2013, 2018
NL	Netherlands	2002, 2003, 2006, 2010, 2102, 2017
NO	Norway	2001, 2005, 2009, 2013, 2017
PL	Poland	2001, 2005, 2007, 2011, 2015
RO	Romania	2000, 2004, 2008, 2012, 2016
SK	Slovakia	2002, 2006, 2010, 2012, 2016
SI	Slovenia	2000, 2004, 2008, 2011, 2014, 2018
ES	Spain	2000, 2004, 2008, 2011, 2015, 2016
SE	Sweden	2002, 2006, 2010, 2014, 2018
CH	Switzerland	2003, 2007, 2011, 2015
UK	United Kingdom	2001, 2005, 2010, 2015, 2017

Note that election years are referred to elections for the renovation of National Parliaments

Table 6: List of Countries and relative Election Years

Country	Populist Party
AT	Alliance for the Future of Austria*, Freedom Party of Austria, Team Stronach*, Hans-Peter Martin's List*
BE	Libertarian Direct and Democratic, Flemish Interests, National Front*.
BG	Attack, Reload Bulgaria, Citizens for European Development of Bulgaria, National Front for the Salvation of Bulgaria*, National Movement Simeon II*, Order Law and Justice*, United Patriots.
CH	Swiss People's Party.
CY	Citizens' Alliance, National Popular Front.
CZ	ANO, Dawn-National Coalition*, Public Affairs*, Freedom and Direct Democracy, Sovereignty – Jana Bobosikova Bloc*, Rally for the Republic – Republican Party of Czechoslovakia.
DE	Alternative for Germany, The Left.
DK	Danish People's Party, Progress Party*.
EE	Conservative People's Party of Estonia, Res Publica Party*.
EL	Independent Greeks, Democratic Social Movement*, Popular Orthodox Rally, Coalition of the Left and Progress.
ES	We Can.
FI	True Finns, Blue Reform.
FR	France Unbowed, National Rally.
HR	Croatian Democratic Alliance of Slavonia and Baranja, Croatia Labourists – Labour Party, Human Shield, Bridge of Independent Lists.
HU	Movement for a Better Hungary, Fidesz – Hungarian Civic Union, Hungarian Justice and Life Party.
IE	We Ourselves
IT	Brothers of Italy, Go Italy, Northern League, Five Starts Movement.
LV	New Era*, Zatler's Reform Party*.
LT	The Way of Courage, Order and Justice, Labour Party, National Resurrection Party*, Lithuanian Centre Party.
LU	Alternative Democratic Reform Party.
NL	Party for Freedom, Socialist Party, Forum for Democracy, List 5 Fortuyn*.
NO	Progress Party.
PO	Law and Justice Party, Self Defence of the Republic of Poland*, League of Polish Families, Kukiz '15.
RO	Greater Romania Party, People's Party – Dan Diaconescu*, United Romania Party.
SI	United Left, Slovenian National Party, List of Marjan Sarec.
SK	Direction - Social Democracy, Alliance of the New Citizen*, Ordinary People and Independent Personalities, Slovak National Party, We are Family, True Slovak National Party*.
SE	Sweden Democrats.
UK	United Kingdom Independent Party.

**Parties no longer active in the national political scene.*
Source: The PopuList.

Table 7: Descriptive statistics

Variable	**Obs.**	**Mean**	**St. Dev.**	**Min**	**Max**
Populism Share	139	22.13	15.31	0.1	71.6
Gini Coeff.	139	29.50	4.00	22.0	40.2
Manufacture Emp.	139	17.58	5.89	4.42	31.0
Unemployment	139	8.74	4.66	2.8	24.9
GDP per capita	139	26,172	17,854	2,200	80,300
Media Age	139	39.91	2.50	32.8	45.9
Tertiary Education	139	27.07	8.70	9.3	43.6
R&D Expend (GDP %)	139	1.51	0.89	0.24	3.81
Foreign Born Pop.	139	10.37	7.62	0.1	45.7
Belief in God	139	48.81	21.52	12.0	94.0
Urbanisation	139	71.75	11.56	50.8	97.8
Perc. Corruption	139	63.96	19.06	29	97.0
Trust in Government	139	38.62	16.43	7.0	80.0
Trust in EU	139	36.32	22.81	0.0	74.0

Source: Personal elaboration of the data.