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Abstract

With populism gaining ground around the world, it is paramount to understand its roots. Economic downturns have been associated with extreme-leaning voting behaviour, including rising support for populist parties. This study analyses the repercussions of the Great Recession on populist and mainstream voting in Italy. It replicates the methodology of Algan et al [2018]: first, fixed effects models investigate the relationship between unemployment and the vote shares of both populist and mainstream parties, as well as turnout, at the provincial level; then, an IV approach is used to study particularly the effect of crisis-driven unemployment on voting, using the pre-crisis construction share of industry to instrument unemployment. Fixed effects results show a consistent, positive relationship between unemployment and voting for populist parties across specifications and sample splits, as well as a negative one with the mainstream party Go Italy. No clear relationship is established between unemployment and voting for minor populist parties, nor for the mainstream Democratic Party. Results suggest that rising populist support came at the expense of Go Italy and other minor Italian parties. In the particular case of the Five Star Movement, results show that the party managed to fuel voter participation as well. The IV approach yields no significant results, indicating that the instrument proposed by Algan et al [2018] does not apply to the specific setting of Italy.

Abstract — Deutsch

Mit dem weltweit steigenden Populismus, und dessen starken Anstieg in Europa, ist ein Verständnis seiner der Wurzeln unabdingbar. Wirtschaftliche Abschwünge werden mit extremem Wählerverhalten in Verbindung gebracht, einschließlich der zunehmenden Unterstützung populistischer Parteien. Diese Studie analysiert die Auswirkungen der Großen Rezession auf populistisches und Mainstream Wählerverhalten in Italien durch Arbeitslosigkeit. Es reproduziert die Methodologie von Algan et. al. [2018]: Zunächst analysieren Fixed Effects-Modelle den Zusammenhang zwischen Arbeitslosigkeit und dem Stimmenanteil populistischer Parteien, sowie der Wählerbeteiligung, auf Provinzebene. Anschließend wird ein IV-Ansatz verwendet, um insbesondere die Auswirkungen der krisenbedingten Arbeitslosigkeit auf das Wählerverhalten zu untersuchen, wobei der Industrieanteil der Baubranche vor der Krise zur Instrumentierung der Arbeitslosigkeit herangezogen wird. Fixed Effects zeigen einen konsistenten, positiven Zusammenhang zwischen Arbeitslosigkeit und dem Wählen von populistischen Parteien über mehrere Spezifikationen und Probenteilungen hinweg, sowie einen negativen Zusammenhang mit dem Wählen der Mainstream Partei Go Italy. Es gibt weder einen klaren Zusammenhang zwischen Arbeitslosigkeit und dem Wählen kleinerer populistischer Parteien, noch mit dem Wählen der Demokratischen Partei. Die Ergebnisse weisen darauf hin, dass steigende Unterstützung für populistische Parteien zu Ungunsten von Go Italy und anderen kleineren Italienischen Parteien stattfanden. Im konkreten Fall der M5S zeigen die Resultate, dass es der Partei gelang, Wähler zu mobilisieren. Die IV-Schätzung ergibt keine signifikanten Resultate, was darauf hinweist, dass die von Algan et. al. [2018] vorgeschlagenen Instrumente nicht auf den konkreten Fall Italiens anwendbar sind.

This dissertation is dedicated to my parents, Alvaro and Consuelo. You have taught me by example that knowledge is nothing without ethics and that justice and compassion are human rights. Thank you for shining your light on me. This is for you.

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Finally, I would like to lovingly thank my family. To my parents, Alvaro and Consuelo Pereira, my brother João Vicente, and my sister Isabel: I extend you my most sincere and heart-felt appreciation. None of this would have been possible without your unrelenting support. I thank you for the intellectual and academic exchanges, lively discussions over meals, and reassurance.

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Chapter 1

Introduction

1.1 Overview

1.1.1 Populism On The Rise

Around the globe, populism has been gaining strength in recent years. Even though it is not a new phenomenon, a surprising number of countries have registered increased support for populist figures, parties and policies of late. The approval of the Brexit referendum in 2016 seemed to be an outlier event of triumphing populist rhetoric, had it not been closely followed by Donald Trump's staggering election. It is not confined to the US-European axis either: 2018 witnessed the largest economy in South America, Brazil, elect the right-wing populist Jair Bolsonaro.[1] In the meantime, Europe registered increased support for several populist parties: the National Front in France, Freedom Party in Austria, Fidesz in Hungary, Law & Justice in Poland, AfD in Germany, Swedish Democrats in Sweden, to name a few. Presently, some of the main economies in the world and several inside the European Union are either being led by populist leaders or have gained significant populist presence in their parliaments. Among those, the first European country to elect a fully populist coalition to its highest office was Italy, in 2018.

The label 'populism' is a broad term encompassing many political movements and, most importantly, unrelated to the left-right ideological scale. Even thought the majority of populist parties active today are right-wing [Algan et al., 2018], populism can be both of right or left leaning, with

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[1]See Barros and Silva [2019] for an analysis of how labour market shocks affected this election.

varying degrees of extremism. The common denominator is the consensus around populist rhetoric, characterized by anti-establishment, in-group/out-group rhetoric. Mudde's seminal paper, 'The Populist Zeitgest', defines populism as "an ideology that considers society to be ultimately separated into two homogeneous and antagonistic groups, 'the pure people' versus 'the corrupt elite"'' [Mudde, 2004]. With a more policy-oriented approach, Guiso et al. [2017] define as populist "a party that champions short-term protection policies while hiding their long-term costs by using anti-elite rhetoric to manipulate beliefs.".

The fact is that parties making use of populist rhetoric are gaining ground around the world, taking up different shapes and ideological nuances — most of them right-leaning. Their simplistic and divisive discourse weakens the democratic process and the policy debate, as it provides a Manichean perspective in such a way that "opponents are not just people with different priorities and values, they are evil" [Mudde, 2004] — which contributes to fuelling divisiveness among parties and damping cooperation.[2] The "us-against-them" discourse is specially worrisome within the European Union, where the cultivation of European cooperation has contributed to peace keeping since WWII, and the incorporation of peripheral countries after the fall of the Iron Curtain. The political and economic robustness of the European Union allows it to, as a block, participate as one of the main players in the global environment and to cooperate among members in terms of economic and public policy [Algan et al., 2018]. Not less important, the EU embodies the most daring project in history of a monetary union.[3] With so much at stake, it is paramount to understand what causes populist platforms to emerge and what fuels voting behaviour in support of such platforms.

Much of the academic debate focuses on different aspects of one, broad root of populism: globalization. There are two main pathways suggested as to how globalization affects voting behaviour: a) economic anxiety, caused by out-sourcing, import competition and technological progress, and b) a "cultural backlash against progressive values" [Algan et al., 2018]. Cutting through both explanations is the fact that gains from globalization have been uneven — around the world and within the EU.[4]

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[2]Populism has been described as a "pathology [...] produced by the corruption of democratic ideals" [Taguieff, 1995].

[3]See Mundel [1961] for the seminal paper on monetary unions.

[4]One of the pillars of a monetary union as proposed by Mundel, which was the base for the Euro project, is of economic convergence among its members. However, two decades in, it is unclear whether the European Union effectively experienced said convergence. The

Looking at the European case, both explanations seem to resonate: the last decade experienced intense economic anxiety (e.g. shrinking GDP, rising unemployment, loss of FDI, to name a few) and a cultural convergence process. This study will focus on the economic aspect of rising populism. There has been a surge in populist support in Europe following the economic crisis started in 2008, also known as the Great Recession. This double-dip economic recession spread across the block and was followed by an acute increase in unemployment levels. While the entire block suffered the impact of the crisis, its effects were not homogeneous — different countries and different regions within each country absorbed the crisis in a particular way. It is exactly this differential effect of the economic aspects that is explored in this thesis.

1.1.2 Present Study and Basis Paper

This study contributes to the debate on the economic roots of populism, by examining how economic shocks affect voting behaviour. More specifically, it investigates how unemployment affects voting for populist parties. To do so, the case of Italy is taken into account — as the country was one of the hardest hit by the Great Recession [Bull, 2018] and the first EU member in recent times to be governed by a completely populist coalition.[5]

The Italian economy is the fourth largest within the EU, and was heavily affected by the crisis started in 2008.[6] In the following year, the country's economic activity contracted by 5,5% — in line with the Eurozone's contraction of 4,5% in the same period. However, it was the second blow of the recession, in 2011, that affected Italy the most — including political turmoil, which culminated in the resignation of then-Prime Minister Silvio Berlusconi.[7] While the Eurozone registered a 0,9% drop in activity in 2012, in the same period Italy contracted by 3,0% and saw its debt-to-GDP ratio climb to 130% — a long way from the Eurozone's usual 80%-90% level. Italian unemployment rose to a new landing and has not — as of 2019 — gone back to pre-crisis levels in any of the five Italian macro-regions (see Figure

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integration of former communist countries and the Great Recession brought this debate to the surface, as countries played a game of who to blame and who should foot the bill of the crisis.

[5]The League and Five Start Movement coalition following the 2018 general elections.

[6]Italy's GDP comes after only those of Germany, the United Kingdom and France. Source: Eurostat.

[7]Berlusconi resigned his post in November 2011.

2.2). While the country average unemployment has not surpassed the 13% threshold, in Southern regions it reached over 20% in 2014.

Amid this prolonged, dire economic situation, the political landscape of the country registered significant shifts. The first general elections Italy held post-crisis, in 2013, uprooted the bipolar party system in place since the 1990s as a new anti-establishment, populist party emerged: the Five Star Movement (*Movimento 5 Stelle*, or M5S), which swept up a staggering 25,6% of the votes.[89] It was a surprising result that a first-timer party would obtain almost one third of the votes in a general election.[10] Opposite to some predictions from the time, by the next election those results proved not to be an outlier. Following prolonged economic stagnation, and the ruling Democratic Party's perceived failure to address it, the general elections of 2018 crowned the rise of populism in Italy: the Five Star Movement expanded their support and another populist force emerged: the heavily re-branded League (*Lega*). Previously a Northern regionalist party, the *Lega Nord*, it took a turn to the extreme right under the leadership of Matteo Salvini [Conti et al., 2016]. Combined, the two anti-establishment and populist parties, Five Star Movement and League, obtained more than half of the votes cast in 2018.

In short, Italy experienced a prolonged period of economic hardship and a subsequent rise of political support for populist parties. By using unemployment as a proxy for the social cost of the economic crisis, this study investigates how the aftermath of the Great Recession affected voting behaviour in Italy. The aim is to shed light on the relationship between unemployment and Italians' choice to support new populist parties, namely the Five Star Movement and the League, in detriment of the established, mainstream parties, namely Go Italy (*Forza Italia*) and the Democratic Party (*Partito Democratico*).

To do so, this study replicates the methodology proposed by Algan, Papaioannou, Passari, and Guriev [2018] in 'The European Trust Crisis and the Rise of Populism'. This comprehensive study investigates the effects of regional unemployment on voting behaviour and trust levels across 26 Eu-

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[8]Results are for the Chamber of Deputies election.

[9]Italian politics had experienced a two-party system since 1994, with elected coalitions being headed by either Go Italy (*Forza Italia*) or the Democratic Party (*Partito Democratico*).

[10]Chiaramonte et al. [2018] coined the 2013 general elections a "political earthquake".

ropean countries, during the period from 2000 to 2017.[11] The analysis is performed at the NUTS 2 level of geographical disaggregation, and explores the differential effect of unemployment within each country.[12] Authors apply two estimation strategies: first, fixed effects models regress voting shares and trust levels on unemployment, respectively, accounting for the time-invariant specifics of each region; secondly, they explore causality with an instrumental variable approach. The instrument selected is the pre-crisis share of construction in industry gross value added, in an attempt to access how *crisis-driven* unemployment affected trust and voting behaviour as the Great Recession greatly constrained the construction and infra-structure segments of the economy.

This study focuses on the relationship between unemployment and voting behaviour, and applies the same framework mentioned above to the case of Italy. Four general elections are taken into account, two from before the Great Recession (2006 and 2008) and two after (2013 and 2018).[13] Unemployment, voting shares and the instrument variable, construction share of industry in gross value added, are studied at the provincial level.[14] The present study builds on Algan et al. [2018] in three main points: it adds one extra layer of detail by using provincial data, equivalent to NUTS 3 regions instead of NUTS 2; it uses original Italian data, foregoing gross approximations that are bound to happen when using NUTS units[15]; finally, it includes the latest Italian election of 2018.

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[11]This time frame is analysed in three different ways: yearly, averaged by four periods, and finally in a difference-in-difference comparison of the averages before and after the Great Recession.

[12]European countries have their statistics published by NUTS geographical units ("Nomenclature of Territorial Units for Statistics"); the NUTS 1 level represents the country itself, followed by two additional subnational disaggregation levels that are closely related to the country's own geographical division, such as regions (NUTS 2), and and provinces (NUTS 3), etc. See detailed information at https://ec.europa.eu/eurostat/web/nuts/history.

[13]Italian general elections are held in the first trimester of the year.

[14]Italy is divided in 20 regions, equivalent to NUTS 2 regions, and 112 provinces, equivalent to NUTS 3 regions.

[15]NUTS geographical units sometimes do not match actual regions in the countries, which can be misleading when analysing economic factors, local industry and voting data, which is usually only reported for country regions.

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1.2 Literature Review

The fact that economic aspects affect voting choices has been long established in the Political Economy literature.[16] Financial crisis and economic downturns have been associated with political unrest and polarization, as well as with extreme-leaning voting behaviour. Funke et al. [2016] analyses the aftermath of financial crises in 20 countries starting from 1870 and finds consistent change in voting behaviour in favour of far-right platforms following a financial fall out.[17]

The present study contributes to the literature of the Political Economy of Populism. As mentioned previously, globalization is established as one of the main roots of populism, a label that encompasses both right and left leaning movements. Rodrik et al. [2017] explores how different globalization shocks affect the ideological leaning of the surging populist movements. He argues that while economic grievances largely explain the surge in support for populists, the particularities of the globalization shock help explain the type of ideological discourse chosen. Authors find that immigration and cultural shocks usually lead to right-leaning, national-cultural rhetoric (such as in advanced economies of Europe), whereas trade, financial and investment shocks usually lead to income and social-class rhetoric (such as in Southern Europe and Latin America).[18] In post-crisis Italy, both types of shock and rhetoric coexist. The country was affected intensely by the economic crisis in Europe and also by the refugee situation that arose in 2015. The main insurgent populist party, the Five Star Movement, is considered "outside" the left-right spectrum.[19] While their economic discourse leans to the left and strongly builds on the anti-elite sentiment, they also support positions against the European Union and immigration.

Several studies empirically access the effects of globalization shocks in voting behaviour, many of them using instrumental variable strategies: a) Autor et al. [2016] finds that rising import competition from China has played a role in driving moderate politicians out of Congress in the US, shifting congressional voting toward ideological extremes, and electing more conservative

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[16]See Downs [1957], Bloom and Price [1975], Fair [1978].

[17]All countries analysed are Western advanced economies.

[18]Findings by Rodrik et al. [2017] appear to be changing in Latin America, where most recently an intense economic recession led to the election of a right-wing populist in Brazil.

[19]The Chappel Hill Expert Survey database classifies them as having "no ideological family", and strongly opposing the European Union [Polk et al., 2017].

Republicans (Tea Party members included)[20]; b) Colantone and Stanig [2018] study the effect of Chinese imports on the economic structure of British regions and how it played a role in the 2016 Brexit referendum. Authors establish a causal link between rising Chinese import penetration and support for the *Leave* option, suggesting that in places where more people felt the losses from globalization voters were more likely to support a populist, anti-EU campaign; c) considering imports from both China and Eastern Europe, Dippel et al. [2015] finds a causal effect between trade integration and voting behaviour in Germany, in the period between 1987 and 2009. Specifically, similar to Funke et al. [2016], they find that *extreme-right* platforms are the ones gaining strength from economic anxiety caused by trade exposure.

While most studies focus on how economic aspects affect voter behaviour and increasing support for populist parties, Guiso et al. [2017] explores both the demand (voter support) for and the supply (insurgence) of populist parties. Analysing several countries in Europe, authors find that populist parties are more likely to appear and flourish in scenarios with a "systemic crisis of economic security that incumbent parties (whether left-leaning, relying on government, or right-leaning, relying on markets) find hard to address" [Guiso et al., 2017]. This proposition resonates intimately with the Italian case.

As mentioned in the previous subsection, Italy's economy was heavily affected by the Great Recession and since then has registered the emergence of two populist parties: the M5S and the re-branded League. The incumbent government part of Guiso's proposition also holds true: Italy took the blow of the second dip of the recession in 2011, and the government's failure to address the debt crisis and to reassure financial markets culminated in the resignation of then-Prime Minister Silvio Berlusconi.[21] Italy then entered a long spell under the leadership of the Democratic Party, which boosted high levels of support at first. However, as the economic stagnation dragged on, as well as the banking crisis and the delicate state of public finances, the situation changed and public support plunged. Finally, in the elections of 2018, the two parties that previously dominated the mainstream of Italian politics, Go Italy and the Democratic Party, suffered massive vote share losses and gave way to the populists League and M5S.

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[20]They aim to unravel the effect of rising exposure to Chinese imports on the election of ideologically-extreme politicians at the district level in the US, from 2002 to 2010.

[21]At the time the party in power was the PdL, previously and posteriorly named Go Italy (*Forza Italia*).

Contrary to popular belief, the relationship with the European Union was not a major campaign topic in the run-up to the 2018 elections. The two most mentioned issues by the campaigns were the economy and immigration (Chiaramonte et al. [2018]) — in line with the literature on how globalization affects populist insurgence. The EU only became a central discussion topic in the process of government formation, which resulted in the partnership of League and the M5S — both parties highly opposed to European integration.

As it happened in several EU countries, in Italy the anti-establishment populist narrative flourished as an anti-European Union narrative. The prolonged consequences of the economic crisis led to sinking trust levels in both national parliaments and the European Union.[22][23] Analysing regional employment shocks across Europe, Lechler [2018] shows that in regions affected by unemployment and with high immigration levels the anti-EU sentiment has risen. Another aspect of this anti-establishment, anti-political-elite narrative of populism is the recent phenomenon of the "no-politician"-politician, the leader who paints himself or herself as an outsider to politics as he or she rans for office. In Italy, this was the case of the M5S. The party was founded by a comedian, Beppe Grillo, and since its conception positioned itself as not a political party, but the "instrument for a political revolution" [Tronconi, 2018].[24]

Finally, this study builds on the literature on voter turnout. Theory is vast when it comes to the question of what drives turnout and engagement in the electoral process. From social pressure [Gerber et al., 2008] to weather conditions [Gomez et al., 2007], several variables have been linked to voter participation. One of the main ones is political polarization, for which two main theories apply: based on the analysis of the American 2004 presidential elections, Fiorina et al. [2006] suggests that polarization disengages voters, as they "feel detached from the electoral process". On the other hand, Abramowitz and Saunders [2008] argue that turnout increases with political polarization: it makes people place such an importance to the electoral outcome that more of them are compelled to turn up to vote. In this study, results show that

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[22] "The eurozone crisis had a more significant and longer-lasting impact on Italy than on virtually any other member state" — Bull [2018].

[23] Algan et al. [2018], Kriesi et al. [2015], Dustmann et al. [2017].

[24] Donald Trump also played into this narrative, positioning himself as an outsider, someone not involved in Washignton's "swamp". In Brazil, Bolsonaro made abundant use of the anti political elite discourse, presenting himself as an alternative to mainstream politicians — even as he had been a public servant for more than 30 years, and his three sons are also in politics.

unemployment is connected to slightly higher levels of turnout, which is relevant since turnout in Italy has steadily decreased since 2003 [Chiaramonte et al., 2018]. Complimentary, Passarelli and Tuorto [2014] show that while many Italian voters chose to abstain as a political statement, most voters preferred to vote for a "radical" party instead, namely the M5S.

Following this introductory section, Chapter 2 contains the description of the data included in this study as well as a descriptive overview of unemployment and voting behaviour in Italy. Chapter 3 details the methodology implemented and reports the results. Finally, Chapter 4 includes a discussion of the findings. Additional data details and results are reported in the Appendix.

Chapter 2

Data and Descriptive Analysis of Italian Case

This section contains the description of the data used in this study and a descriptive overview of unemployment and voting behaviour in Italy.

2.1 Data Description

This study replicates the framework proposed by Algan et al. [2018], which uses unemployment and industry data from Eurostat at the NUTS 2 geographical level, and encompasses 227 NUTS 2 regions in 26 European countries. Their voting data is obtained at each country's particular archive, and includes elections up to 2017. Here, this methodology is applied to the Italian case at the provincial level. '

Novelty from data   This study builds on the basis paper's data in three ways. First, it includes the most recent Italian general election of 2018. Second, it uses data at the provincial level (104 provinces, comparable to the NUTS 3 regions), one level of detail deeper than the regional level studied by Algan et al. [2018] (which includes 20 NUTS 2 Italian regions). Since the modelling exploits the differential effects of unemployment on provinces to understand its relationship with voting, the additional level of detail is expected to bring accuracy to the results. Finally, not only anti-establishment parties are included in the analysis, but also the two biggest parties from the political mainstream. The aim is to shed light not only on who gained votes, but also where the votes came from — which parties lost votes and how turnout was affected.

2.1.1 Databases

This study makes use of three main datasets, concerning the following subjects: unemployment, voting and industry gross value added. In addition to those, control variables are used, such as: education attainment levels, income, population and share of non-EU citizens. Further details on main data and controls are specified in the Appendix. To classify the parties in terms of ideology and to access party continuity across the four elections analysed, the Manifesto Project and the Chappel Hill Expert Survey databases were used. [Volkens et al., 2018][Polk et al., 2017]

Italian unemployment data is obtained from the Labour Force Survey, released yearly by the Italian National Institute of Statistics, and analysed at the provincial level.[1] Italy is presently divided in 20 regions and 112 provinces (including regular and autonomous provinces, metropolitan cities and free municipal consortia), which are comparable to the NUTS 2 and NUTS 3 levels from Eurostat, respectively. Regions are also grouped in 5 macro-regions, namely North-West, North-East, Center, South and Isles. Over the time frame studied, changes were made to the composition of the provinces: in some cases, they were aggregated to form a new one; in others, a previous province was divided into several others. To be able to compare data across 2004-2018, provinces were aggregated back to the 104 provinces for which data had been released since 2004. Information on the provincial adjustments made is available in the Appendix.

For the instrumental variable approach, this study uses the Industry Gross Value Added series by Eurostat, obtained at the Italian National Statistics Institute (Istat), at the provincial level. Construction share of industry is used as an instrument for unemployment.[2] Other industrial categories are added as covariates: agriculture, manufacturing, financial activities, trade and government.

Electoral data included in this study is from the electoral archives of the Italian Ministry of Interior Affairs[3]. Detailed data is obtained for the general elections held in 2006, 2008, 2013 and 2018. Presently, general elections are held for the Chamber of Deputies (the Lower House, composed by 630

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[1]Database available at https://www.istat.it/en/.

[2]The construction share of industry is the gross value added of the construction segment as a percentage of the total industry gross value added.

[3]Electoral archives are available at https://elezionistorico.interno.gov.it/

members) and the Senate of the Republic (the Upper House, with 315 members). Votes considered are from the Chamber of Deputies elections, since the Senate and the European Parliament elections both present characteristics that could undermine the study. Firstly, Italy imposes a minimum age of twenty-five years old for a citizen to vote on the Senate elections, which would withhold information regarding youth unemployment and voting. Secondly, the European Parliament elections show very low levels of turnout overtime, thus failing to consider a large portion of the population. This study uses voting data at the provincial level. For each of the 104 provinces included, data is compiled for the following measures: votes cast for each party, total registered voters, total ballots cast, invalid votes and turnout.

The voting system in Italy is not geographically subdivided in the Region-Province system, but in 27 *Circoscrizioni* formed by several constituencies. Voting data for the elections of 2006, 2008 and 2013 is reported by *Circoscrizione* and already detailed by the 100+ provinces matching the ones for unemployment and the covariates included. The 2018 elections were the first held under a new system, the *Rosatellum*, and its electoral data output is released for electoral constituencies in their many levels of detail, with overlap between larger electoral areas and the provinces. For this reason, electoral data from 2018 was obtained at the commune level and aggregated to the province level so as to be comparable with both previous electoral data and the other variables in the study. Further details of the electoral constituencies aggregations can be found in the Appendix.

2.1.2 Party Classification

Basis paper In the basis paper by Algan et al. [2018], non-mainstream parties around Europe are classified into four different categories: far-right, radical-left, populist and Eurosceptic. Apart from far-right and radical-left, the categories are not mutually exclusive — i.e. a party can be both populist and far-right.[4] To test such categories of parties is possible in their case since over 25 countries are analysed, and there are both large and small parties in every category. In fact, their results show that some European countries such as Spain present a rise in leftist support following increasing unemployment. In others, such as Germany, support for right-wing platforms surged following the worsening of their economic situation [Algan et al., 2018]. As this present

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[4]To classify parties, Algan et al. [2018] uses the Chapel Hill Expert Survey [Polk et al., 2017]. For the ones not included in this resource, authors used each party's website and slogan to perform the classification.

study focuses on the case of one country, it is not useful to classify parties into the same categories, since not all of them are strongly represented in the political landscape and the particularities should be taken into account.

Italy   This study focuses on non-mainstream parties making use of populist rhetoric that flourished in Italy following the Great Recession. The Chapel Hill Expert Survey is used to classify the parties, and the Manifesto Project is the source to account for party continuity (the changing coalition and party names throughout the time frame analysed).[5]

Populism is not a new phenomenon in Italy. In fact, in the early 1990s the country registered a similar chain of events as the ones studied here: following a strong economic downturn and political crisis, two populist actors emerged in the subsequent elections: Berlusconi's Go Italy (*Forza Italia*) [Mudde, 2004] and the then-regionalist and small Northern League (*Lega Nord*)[Kriesi and Pappas, 2015].[67] The most recent Great Recession fuelled the emergence of ***new*** populist actors, namely the Five Star Movement (*Movimento 5 Stelle*, or M5S) and the heavily re-branded League (*Lega*). In the meantime, Italy went through a period with a strong two-party system, as Go Italy slipped into the mainstream and alternated political power with the Democratic Party.[8] That's why Italy has been called a country of "strong, enduring populism" [Kriesi and Pappas, 2015].

As this study focuses on the surging populism fuelled by the Great Recession and its economic consequences, it considers Go Italy as a established player of the mainstream Italian political arena. In fact, Go Italy was the most successful political party since the Second Republic: it was the main member of coalition governments in 1994, 2001-06, and 2008-11 [Kriesi et al., 2015]. For this analysis, Go Italy and the Democratic Party are considered the main players of the mainstream Italian politics, and the populist parties

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[5]The Chapel Hill database provides indexes estimating political positioning of parties across Europe. This study uses the following waves of the survey: 2010 Bakker et al. [2012], 2014 [Bakker et al., 2015] and 2017 [Polk et al., 2017].

[6]Bull et al. [2018] compares the 2011-2013 economic conditions to those experienced in 1992-1994, including the following populist surge.

[7]The 1993 referendum brought about extensive political reforms.

[8]The Democratic Party was created in 2007, a merger from the previous coalition of parties called the Olive Tree. Go Italy participated in the 2008 and 2013 elections under a party called PdL. In 2006 and 2018, the party ran with its original name. Source: The Manifesto Project [Volkens et al., 2018].

included in this study are: the League, the M5S, Italy of Value and Brothers of Italy. Below, it's detailed how they were classified.

Chappel Hill Database   As previously mentioned, populism is not characterized by ideological leanings, but by the trademark rhetoric of "us-versus-them" and anti-elites. In order to classify the Italian parties analysed, this study uses three components from the Chapel Hill Expert Survey that provide insight on populist leanings. The indexes used measure party positioning on the following: direct versus representative democracy, European integration, and salience of anti-establishment and anti-elite rhetoric.[9] Table 2.1 provides a summary of the indexes regarding the election of 2013, and illustrates how the mainstream and populist parties differ.

Table 2.1: Chapel Hill Indexes - Election of 2013[1]

	Left-Right Spectrum[2]	People vs Elite[3]	Anti-Elite[4]	European Integration[5]
Party				
Five Star Movement	5.2	9.8	10	2.6
Northern League	8.3	7.8	7.8	1.5
Brothers of Italy	8.4	6.8	6.5	1.9
Go Italy	6.5	3.8	3.6	4.7
Democratic Party	3.8	2.8	2.5	6.5

Source: Chapel Hill Expert Survey.   [1] This table reports indexes from the latest wave available (2017) of the Chapel Hill Expert Survey regarding the 2013 Italian election.
[2] Placing of the party on the left-right ideological spectrum, with 0 being "extreme left", 5 being "center", and 10 being "extreme right".   [3] This index measures how much the party values direct as opposed to representative democracy; 0 means the party believes elected officials should make the most important decisions, while 10 means the party advocates for "the people" making the main political choices (e.g. through referendums).   [4] This index measures the salience of anti-elite and anti-establishment rhetoric the party makes use of; 0 indicates no importance at all, and 10 indicates that anti-elite rhetoric is extremely important to that party.
[5] This index indicates the positioning of party leadership toward European Integration; 0 represents "strongly opposed", 4 means "neutral" and 7 represents "strongly in favor".

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[9]Those last two indexes were included in the last wave of the survey, and are available only for the 2013 elections in Italy.

The party with the clearer populist tendencies is the M5S, scoring the highest on the "anti-elite" salience index and the "people vs elite" one — not only in Italy, but among the 133 parties analysed across Europe.[10] Notably, the M5S has campaigned strongly in favor of direct democracy, and has even held online referendums since in office. The League is also presented as making abundant use of anti-elite rhetoric, and strongly opposing European integration. [11] The established parties, Go Italy and the Democratic Party, show more inclination towards European integration, and notably lower scores of anti-elite and direct democracy rhetoric.

Aditionally to the League and the M5S, two other parties are included in this analysis as populists: Italy of Value (*Italia dei Valori*) and Brothers of Italy (*Fratelli d'Italia*). Their votes are computed together to account for *smaller* populist parties in Italy. Brothers of Italy is a radical-right split from the Go Italy predecessor, the PdL, created in 2012 and strongly opposed to European integration. Representing the centrist, left-leaning populism, we consider the small Italy of Values. As the party took part in the elections of 2006 and 2008, they are not evaluated by Chapel Hill in the populism indexes mentioned above. Regarding the election of 2008, the survey describes the party as neutral to European integration. Literature depicts their rhetoric as strongly populist, as it posed the "common man" against the established political elite — namely, IdV strongly opposed the maintenance of Berlusconi's Go Italy in power [Bull, 2016] [Fabbrini and Lazar, 2013]. The party also strongly supports direct democracy to empower the 'people', in line with populist tendencies seen in the M5S.

2.2   Descriptive Analysis of Italy: Unemployment and Voting Behaviour

This section contains summary tables and a descriptive analysis of the evolution of unemployment and voting behaviour in Italy during the time frame analysed. Table 2.2 presents data averaged over the period before and after the Great Recession, and Table 2.3 reports averages divided by four periods. Detailed summary tables with data subdivided by Northern and Southern Italy, as well as by macro-region, can be found in the Appendix.

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[10]In those indexes, the M5S is closely followed by right-wing populist parties like the AfD from Germany, the FvD from the Netherlands, the SPD from the Czech Republic

Table 2.2: Summary Statistics - Italy - Pre and Post-crisis[1]

	2004-07					2008-17				
	Obs.	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Max
Unemployment[2]	103	7.3	4.3	2.6	18.4	104	10.5	4.8	3.5	22.4
Industry Shares[3]										
Construction	104	6.4	1.11	3.8	8.9	104	5.8	1.0	3.7	8.9
Manufacturing	104	17.1	8.0	3.1	35.9	104	15.4	8.1	2.8	35.5
Government	104	21.9	6.3	11.5	35.6	104	23.4	6.3	13.3	36.1
Financial	104	4.6	1.3	1.5	8.8	104	4.4	1.4	2.3	12.4
Trade	104	22.8	3.9	14.4	33.0	104	22.5	3.4	16.4	34.8
Agriculture	104	3.5	2.3	0.2	11.2	104	3.3	2.2	0.2	11.3
Voting Shares[4]										
Populist	104	8.9	7.0	2.1	29.1	104	40.6	4.8	15.5	49.3
League	104	5.7	7.0	0.1	26.8	104	10.0	6.6	1.5	29.5
Five Star	104	0.0	0.0	0.0	0.0	104	27.7	6.4	10.0	43.9
IdV/BofI	104	3.2	2.0	0.0	18.9	104	3.0	0.9	0.8	5.8
Go Italy	104	28.7	5.4	8.7	42.3	104	16.7	4.1	0.0	24.5
PD	104	31.3	8.1	0.0	50.7	104	20.7	6.0	0.0	39.0
Turnout	104	82.0	4.8	66.8	88.7	104	74.0	5.8	60.2	82.4

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from all Italian provinces.   [2] Unemployment rate (%).
[3] In percentage of total Industry Gross Value Added.   [4] Vote shares are percentages from the total of valid votes cast. The pre-crisis period (2004-07) includes the elections of 2006 and 2008, and the post-crisis period (2008-17) includes the elections of 2013 and 2018. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 2.3: Summary Statistics - Italy - 2004-2017[1]

	2004-05	2006-07	2008-12	2013-17	Total Obs.[2]
Unemployment	7.9	6.6	8.6	12.48	414
	(4.8)	(3.8)	(3.9)	(5.7)	
Industry Shares[3]					
Construction	6.3	6.5	6.3	5.3	416
	(1.2)	(1.1)	(1.1)	(0.9)	
Manufacturing	16.9	17.2	15.5	15.3	416
	(7.9)	(8.0)	(7.8)	(8.5)	
Government	21.8	22.0	23.4	23.4	416
	(6.2)	(6.4)	(6.3)	(6.3)	
Financial	4.5	4.8	4.3	4.6	416
	(1.3)	(1.3)	(1.4)	(1.4)	
Trade	23.0	22.5	22.4	22.4	416
	(3.9)	(3.8)	(3.4)	(3.5)	
Agriculture	3.7	3.2	3.2	3.4	416
	(2.4)	(2.2)	(2.2)	(2.4)	
	2006	2008	2013	2018	Total Obs.
Voting Shares[4]					
Populist	6.3	11.4	30.5	50.8	416
	(4.6)	(9.7)	(5.2)	(5.2)	
League	4.1	7.2	3.4	16.6	416
	(4.7)	(9.5)	(4.8)	(8.9)	
Five Star	0	0	25.1	30.2	414
	(0)	(0)	(4.9)	(9.7)	
IdV/BofI	2.2	4.2	2.0	3.9	416
	(1.1)	(3.1)	(1.2)	(1.1)	
Go Italy	22.2	35.2	20.2	13.1	416
	(4.9)	(7.1)	(4.6)	(3.9)	
PD	30.6	32.1	24.5	16.8	416
	(7.9)	(8.5)	(6.7)	(5.5)	
Turnout	83.7	80.5	75.1	72.9	416
	(4.9)	(4.9)	(6.2)	(5.5)	

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the all Italian provinces. All values are in percentage points and are means for the period indicated. Standard deviation is reported in parentheses. [2] This panel is strongly balanced. The exception is the province of South Sardinia, which has unemployment data starting from 2008. [3] In percentage of total industry Gross Value Added. [4] Vote shares are percentages from the total of valid votes cast. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 2.2 paints a straight-forward picture of the main components of this study. The unemployment rate in Italy went from an average of 7.3% in the years preceding the crisis to 10.5% in the period following it — the maximum registered being 22.4%, in the South of the country. The standard deviation of unemployment rose, meaning heterogeneity across provinces became more pronounced. Populist parties received an average of 8.9% of total votes in the two elections before the crisis, and jumped to an average 40.6% after it. The standard deviation of populist voting diminished, indicating that rising populism is not confined to certain regions of the country. Also worth noticing is the drop in the Go Italy's and Democratic Party's vote shares; together, the two mainstream parties accounted for an average of 60% of votes in the period before the crisis, registering only an average of 37.4% in the two elections after it.

Figure 2.1: Unemployment in Italy
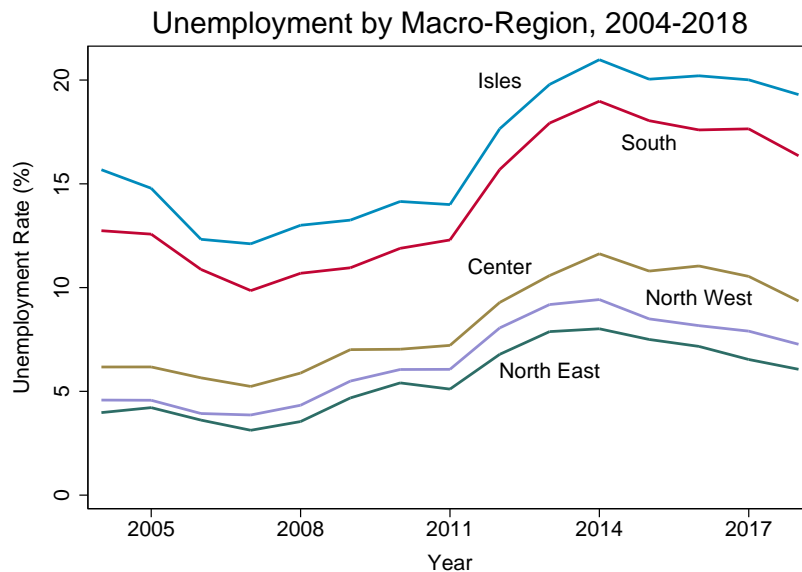
Source: Italian National Institute of Statistics.

Figure 2.2 illustrates the pronounced economic differences between the Northern (North East, North West and Center macro-regions) and Southern

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and the National Front from France.

[11]Both parties, the League and the M5S, have been thoroughly classified by recent literature as populist. See Bellucci [2018], Chiaramonte et al. [2018],Tronconi [2018].

Figure 2.2: Distribution of Unemployment Rate
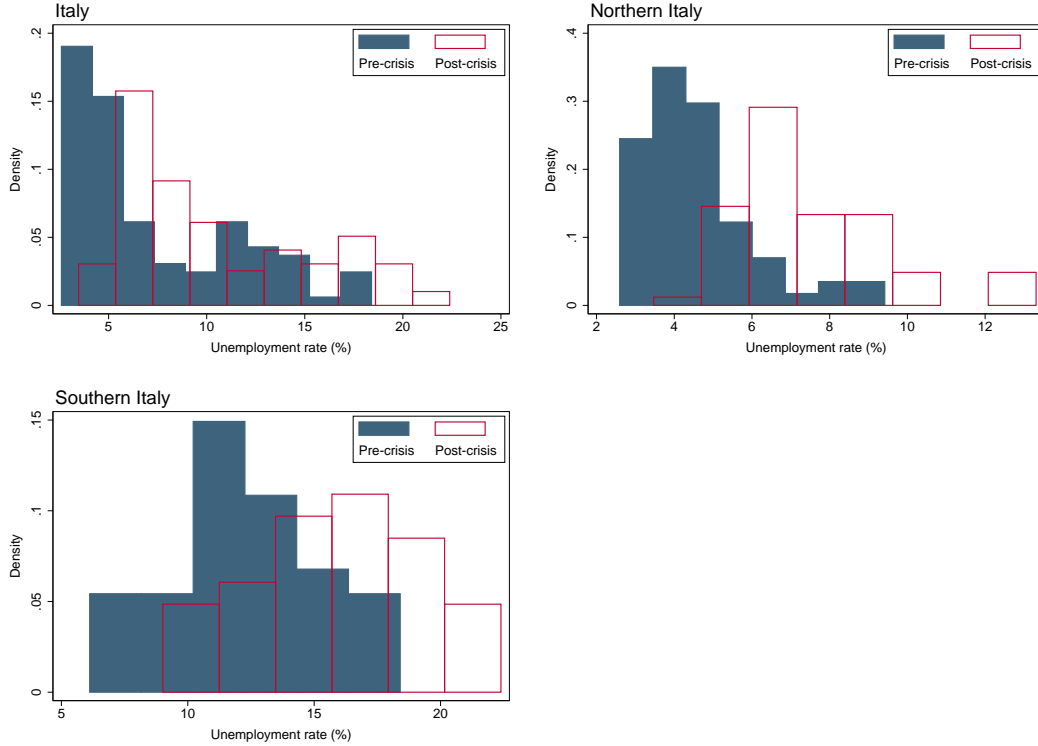
Source: Italian National Institute of Statistics.

(Isles and South macro-regions) parts of Italy. While in the North unemployment levels were at an average of 4.6% before the crisis, afterwards the average was of 7.5%, and the maximum registered was of 13.3% — which is close to the South's *pre*-crisis unemployment average of 12.3%. In figure 2.2, one can notice how the distribution of unemployment in both regions registered a shift to the right.

Voting behaviour patterns in Italy underwent a noticeable transformation since the early 2000s. Figure 2.3 provides a visual overview of how voting shares of populist parties registered a fierce shift to the right after the crisis, while the main parties of the mainstream registered a shift to the left in their vote share distributions. However, the minutia of it is worth unpacking.

The two elections before the Great Recession, 2006 and 2008, were dominated by the coalitions that would later be established as the Go Italy and the Democratic Party. In 2006, the majority of votes were cast for either the

Figure 2.3: Distribution of Vote Shares — Italy
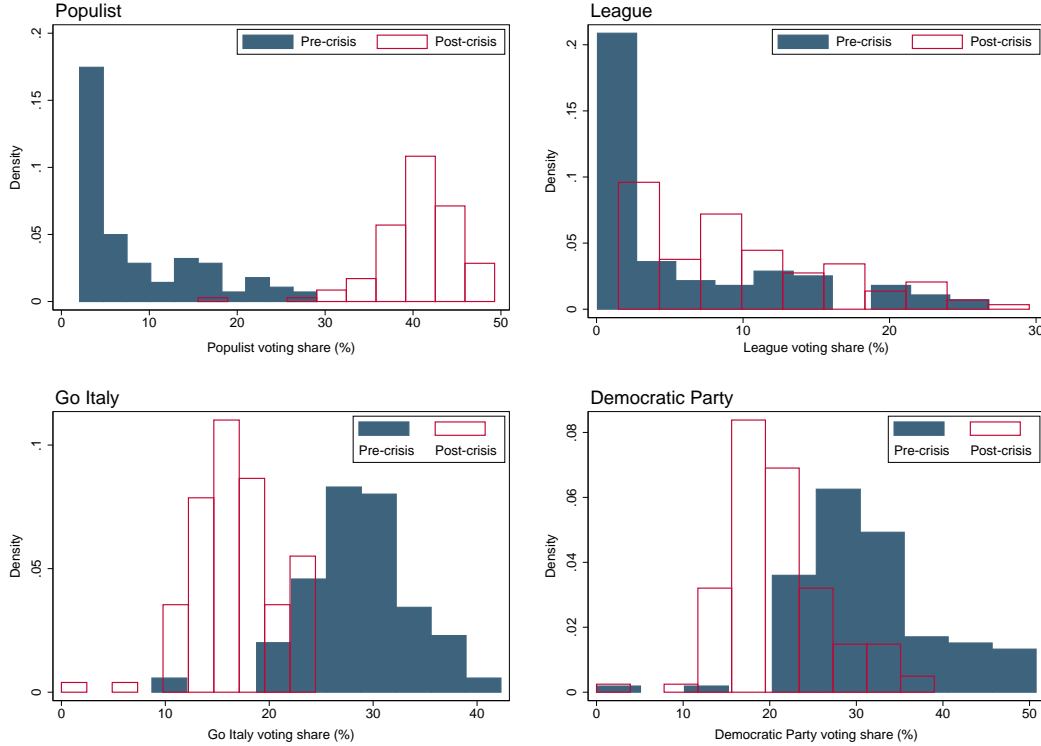
Sources: Italian National Institute of Statistics and Italian Ministry of Interior Affairs.

center-left coalition, from which the Democratic Party was merged in 2007, or Go Italy. In 2008, Go Italy ran alongside the National Alliance, under the name PdL, while the Democratic Party ran for the first time with its present date name.[12] The 2013 elections, the first after the crisis, saw the rise of the Five Star Movement as a populist giant able to rock the two-party system. Detailed vote shares for each election can be found in table 2.3.

For the 2018 elections, the mainstream giants Go Italy and Democratic Party were expected to be the ones forming a government together, and such a prospect was indeed put forward by opponents as the 'win of mainstream politics'.[13] However, over half of the votes cast (50.8%) went for a populist party. Even as no party reached the minimum number of seats required to

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[12]Party continuity is accounted for based on the Manifesto Project database. [Volkens et al., 2018]

[13]Anti-establishment parties like the League, the M5S and the Brothers of Italy all campaigned as the alternative to the mainstream [Chiaramonte et al., 2018].

form a government right away, eventually a governing coalition was forged between the League and the M5S, and Italy became the first EU member to be led by a fully populist government [Bellucci, 2018]. Most striking was the heavy loss of support of the larger mainstream parties: the Democratic Party obtained only 16.8% of the votes, coming from a 32.1% share in 2008; Go Italy obtained 13.1% of votes, over 20 percentage points lower from their peak of 35.2% before the crisis and Berlusconi's resignation.

Chapter 3

Methodology

In this section, different estimation strategies are used to shed light on the relationship between provincial unemployment and voting behaviour in Italy. Throughout the study, unless otherwise stated, voting shares are calculated as a fraction of the valid votes in a given province. Effects of unemployment on voter participation, measured by turnout, are also addressed.

First, OLS panel regressions are performed to access within-province correlations between unemployment and voting behaviour. Fixed effects are introduced to account for specific trends/particularities of the provinces, regions and macro-regions. Then, in order to explore a causal relationship between those two variables, an instrumental variable approach is implemented. Both methodologies are tested for two references of the same time frame: a) 4 periods, including two elections before and two after the Great Recession and b) 2 periods, namely the average of the pre and post-crisis periods. Furthermore, when relevant for the analysis and feasible in terms of sample size, methodologies are also applied for the following sample splits: North/South of Italy and High/Low pre-crisis construction share of industry in gross value added.

3.1 Panel Fixed Effects Models

3.1.1 Four Periods, 2004-2018

Here, four periods are included in the analysis. The vote shares are from two Italian general elections before the crisis (2006 and 2008) and two after (2013 and 2018). As elections in Italy take place in the first trimester of the year, unemployment and other control variables are compiled until the

previous year for a certain election. For the election of 2006, the equivalent unemployment in the panel is the average of the period right before the election (2004-05); the same is done for the elections of 2008 (equivalent period 2006-07), 2013 (equivalent period 2008-12) and 2018 (equivalent period 2013-17).[1]

All specifications include province fixed effects, to control for any particular trends in each of the 104 provinces studied. Additionally to province fixed effects, each of the three panels was tested with a different set of extra fixed effects: a) period fixed effects, to account for trends in the periods analysed, b) region-period fixed effects, interacting the 20 Italian regions to the aforementioned periods, to account for any period *and* region specifics, and c) macro-region-period fixed effects, interacting the 5 Italian macro-regions to the same periods, to account for any period *and* macro-region specifics. Results for each of those panels are reported, for the full sample, on Table 3.1. [2]

The general specification[3] is as follows:

$$y_{p,t} = \alpha + \beta U_{p,t} + \lambda_p + \psi_t + X'_{p,t}\gamma + \epsilon_{p,t} \tag{3.1}$$

In equation 3.1, $y_{p,t}$ is the share of valid votes for each of the parties (and in one case, turnout), and $U_{p,t}$ is the average unemployment rate of the period. λ_p captures the fixed effect of provinces, whereas ψ_t captures the extra fixed effects of each panel. Controls are added regarding educational attainment levels and population characteristics such as gender, age and EU membership.

There is a consistent and significant relationship between unemployment and the rise in populist vote shares across all specifications and sample splits tested. The top panel of Table 3.1, in which fixed effects are controlling for province and time period trends, shows that a 1 percentage point increase

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[1]The estimation was also performed using only the two previous years before an election (2011-2012 for 2013, and 2016-2017 for 2018) and yielded similar results.

[2]Results for the North (Table 5.8) and South (Table 5.9) sample splits, as well as for High (Table 5.10) and Low (Table 5.11) pre-crisis construction share splits are reported in the Appendix.

[3]The subscripts indicate the following: $_p$ for province and $_t$ for time period. $X'_{p,t}$ is the set of control variables included. Standard errors are clustered by province.

in unemployment is associated with a 0.9p.p. increase in the share of populist votes across Italy.[4] This result means that an increase of one standard deviation in unemployment is linked to a 17,8% rise in populist voting in relation to the mean. Once additional controls are introduced for specific trends of periods interacted with regions and macro-regions (middle and bottom panels of Table 3.1), the relationship between unemployment and rising populist shares still holds and is significant, though the magnitude of the effects diminishes.

Among the populist parties analysed, the Five Star Movement is the only one presenting a significant coefficient in the three panels included (second column of Table 3.1). Their results show that an increase of one standard deviation in unemployment is linked to a 15.6% to 24.9% rise in the voting share of M5S (in relation to their mean vote share), depending on how conservative the specification is.

There seems to be a stronger relationship between unemployment and populist voting in the North of the country. On the fourth column of Table 5.8, it's shown that a 1p.p. unemployment increase is associated with a 1.1 p.p. rise in populist voting shares in Northern macro-regions. In the South of the country, the effect is of 0.5p.p.. Once the coefficients are dimensioned, this pattern still holds: an increase of one standard deviation in unemployment is linked to a rise of 11% of populist voting at the mean in the North, while the effect is of 9.4% in the South.

The party most clearly pushing this trend of upward populism is the Five Star Movement (M5S), whose positive relationship with unemployment is significant across specifications and sample splits. The League shows a positive relationship with unemployment in the North (first column of Table 5.8), but a negative one in the South (first column of Table 5.9). As the party used to be regionalist Northern, it is not surprising that it is not the one capturing votes fuelled by economic hardships in the South. Additionally, the M5S's birthplace and foothold of support is the South. Voting for the other two minor populist parties, Italy of Value and Brothers of Italy, does not appear to have a clear relationship with unemployment (third column of Table 3.1).

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[4]This results are in line with those found by Algan et al. [2018], of an increase of 0.9p.p. to 1.1p.p. associated with a 1p.p. increase in unemployment.

Results show that unemployment contributed to the expansion of the populist voting in Italy — but at whose cost? Analysis of the two main mainstream parties show that Go Italy consistently lost votes in provinces experiencing rising unemployment, as can be seen in column 5 of Table 3.1. Across the country, an increase of 1p.p. in unemployment is associated with a drop of 0.4p.p in the vote share of Go Italy, and in the North the drop was up to 0.8p.p. (column 5 of Table 5.8). Through dimensioning, these results convey that an increase of one standard deviation in unemployment is connected to a reduction in Go Italy vote shares by 8,5% in Italy and by 10.2% in the North, at the mean. The Democratic Party, however, does not show a clear or significant relationship with employment levels. This goes in line with the findings of Poletti et al. [2013], which shows that the worsening of economic conditions only affected voters' perception of Go Italy, but not of the Democratic Party. Those results, combined with the non-significance of turnout results, also suggest that other minor parties were the ones who lost the majority of the votes that were relocated for populist parties.

Table 3.1: Panel FEs - Provincial Unemployment and Voting Shares - 2004-2018[1,2]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Period FEs[3]							
Unemployment	0.030	0.726***	0.104	0.860***	-0.378**	0.023	0.106
	(0.126)	(0.167)	(0.063)	(0.145)	(0.143)	(0.147)	(0.081)
Adjusted R^2	0.869	0.941	0.408	0.954	0.914	0.932	0.960
Region-Period FEs							
Unemployment	0.151	0.454**	-0.048	0.557***	-0.340***	-0.143	0.165*
	(0.076)	(0.143)	(0.043)	(0.149)	(0.097)	(0.129)	(0.080)
Adjusted R^2	0.977	0.984	0.809	0.986	0.974	0.966	0.976
MacroRegion-Period FEs							
Unemployment	0.034	0.533***	0.101	0.668****	-0.176	-0.083	0.087
	(0.097)	(0.133)	(0.078)	(0.147)	(0.144)	(0.165)	(0.080)
Adjusted R^2	0.949	0.969	0.462	0.970	0.947	0.945	0.965
No. of Clusters	104	104	104	104	104	104	104
Observations[4]	414	414	414	414	414	414	414

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior. [1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the independent variable is the average provincial unemployment in the years preceding the election. All specifications include province fixed effects. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p <$ 0.05, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.   [3] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.   [4] There are two missing observations as unemployment data for the province of South Sardinia has only been reported from 2008 onwards.

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3.1.2 Two Periods, Pre and Post-Crisis

To better understand the implications of the Great Recession on populism, the same methodology mentioned above is applied to periods before and after the crisis. Here, all variables are averaged throughout the pre (2004-2008) and post (2009-2018) crisis periods. The difference is taken between them, and a cross section regression is performed to access the relationship between the change in unemployment before and after the economic crisis and the change in the vote shares of relevant parties and that of turnout. Then, dummies are introduced and two extra specifications are run: with region and macro-region dummies, to control for particular trends.

General specifications are the following[5]:

$$\Delta y_{p,post-pre} = \alpha + \beta \Delta U_{p,post-pre} + \Delta X'_{p,post-pre} \gamma + \epsilon_p \qquad (3.2)$$

In equation 3.2, $\Delta y_{p,post-pre}$ is the difference in the share of valid votes for each of the parties (and in one case, turnout) before and after the crisis. $\Delta U_{p,post-pre}$ is the difference in the average unemployment rate. It's a cross-section, and in two panels dummies for regions and macro-regions are included in the control matrix $X'_{p,post-pre}$. Results are reported in Table 3.2.

Again, populist voting is positively and significantly associated with unemployment throughout the specifications, which can be seen on the fourth column of Table 3.2. In the cross-section, reported on the top panel of Table 3.2, an increase of 1p.p. in the unemployment rate in the post-crisis period in relation to the pre-crisis period is associated with an increase of the same magnitude in populist votes. When controlling for trends in the macro-regions (bottom panel), the increase in populist voting is of 1.1 percentage point — in line with the findings by Algan et al. [2018]. The M5S is the main driver of this effect, showing significant and positive effects in all specifications (second column of Table 3.2), while the League does not appear to have a clear relationship with unemployment (first column of Table 3.2). While this could be because the party has broader support in its place of birth, the North, the number of observations does not allow to test it there as it would be too few.

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[5]Data over the two periods are averaged for the modelling. The $_{pre}$ time period ranges from 2004 to 2008, and the $_{post}$ from 2009 to 2018. Controls are added regarding educational attainment levels, income and population characteristics such as gender, age and EU membership. Standard errors are clustered by province.

Mainstream parties do not show a consistent relationship between the difference in vote shares and unemployment in the pre and post-crisis periods. Go Italy is not significant in any specification (column 5 of Table 3.2), and the Democratic Party's difference in vote share shows a drop of 0.39p.p. associated with an increase of 1p.p. in the difference in unemployment when controlling for trends in the regions (column 6 of Table 3.2, middle panel). Results are in line with the relationships depicted in scatter plots in Figure 3.1. On the right-side column, it's possible to spot a clear trend between difference in unemployment and voting shares: it is an upward slopping one for populist parties and the M5S, and downward slopping for the Democratic Party. On the left-side column, however, the trend is not so clear for the League and Go Italy vote shares.

Figure 3.1: Populist Voting and Unemployment by Party
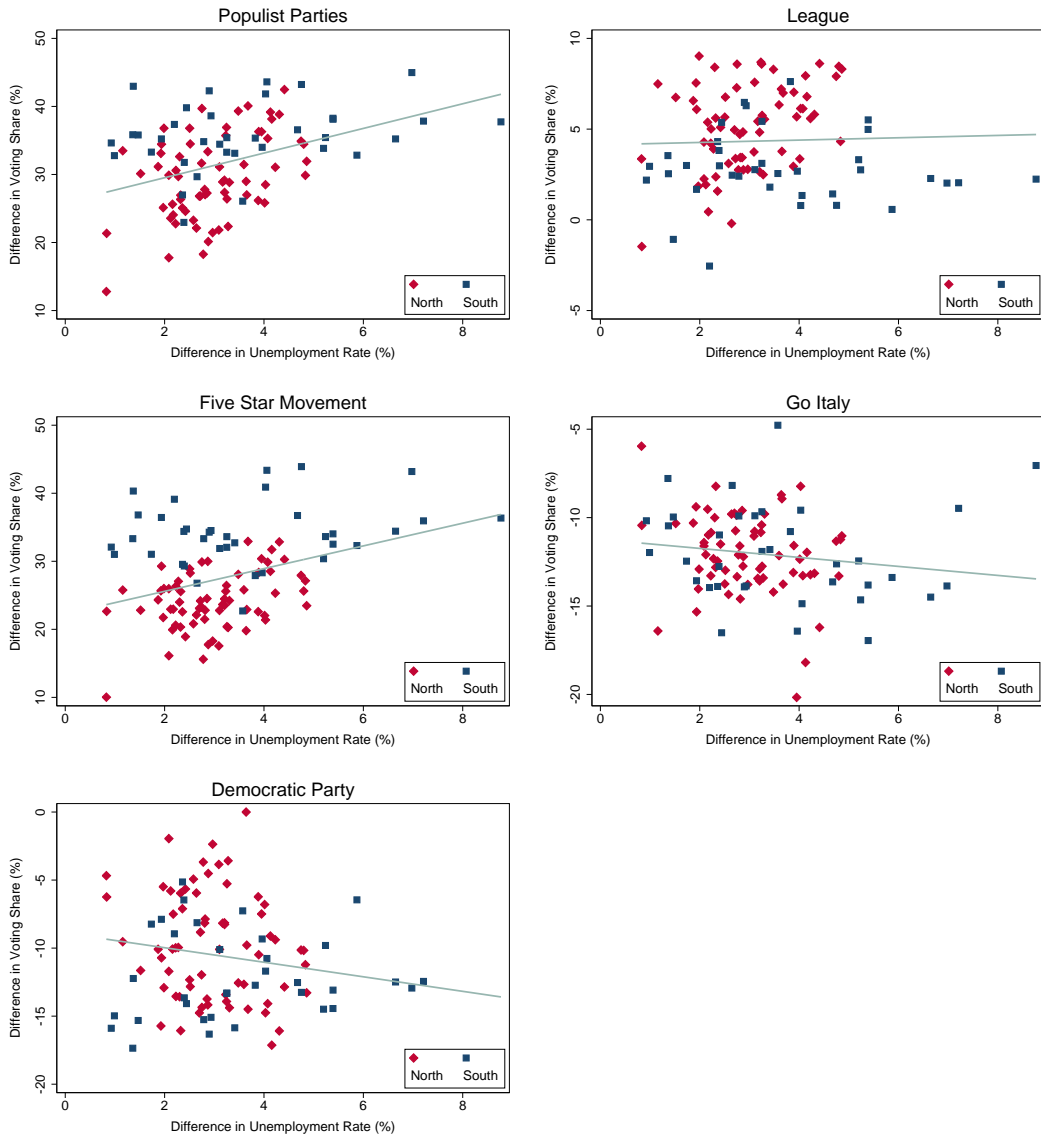
Sources: Italian National Institute of Statistics and Italian Ministry of Interior Affairs.

Table 3.2: Panel FEs - Provincial Unemployment and Voting Shares - Pre and Post-crisis periods[12]

	Populists				Mainstream		-
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
No FEs[3]							
ΔUnemployment	0.192	0.730*	0.122	1.044**	-0.183	-0.187	0.134
	(0.154)	(0.357)	(0.152)	(0.370)	(0.172)	(0.276)	(0.132)
Adjusted R^2	0.347	0.568	-0.001	0.379	0.220	0.255	0.295
Region FEs							
ΔUnemployment	0.148	0.784**	-0.111	0.821**	-0.295	-0.390*	0.255*
	(0.115)	(0.246)	(0.076)	(0.259)	(0.150)	(0.186)	(0.106)
Adjusted R^2	0.737	0.851	0.692	0.808	0.511	0.712	0.618
MacroRegion FEs							
ΔUnemployment	0.173	0.873***	0.042	1.088***	-0.176	-0.287	0.152
	(0.127)	(0.243)	(0.127)	(0.300)	(0.160)	(0.247)	(0.114)
Adjusted R^2	0.559	0.726	0.129	0.588	0.242	0.385	0.344
No. of Clusters	103	103	103	103	103	103	103
Observations[4]	103	103	103	103	103	103	103

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports OLS cross-section and fixed effects panel results. The dependent variable is the difference between vote shares for each party in the pre and post crisis periods. The independent variable is the difference in the average provincial unemployment for the pre and post crisis periods. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.   [3] This panel reports cross-section results.   [4] There is one missing observation as unemployment data for the province of South Sardinia has only been reported from 2008 onwards.

3.1.3 Turnout and Registered Voters

Throughout this study, the voting share of each party is calculated as a fraction of the votes for the party in a given election and the total of valid votes in that province in the same election. Overtime, this measurement shows us if that specific party gained space among the valid votes of that province.

However, at any election, parties can gain ground not only by obtaining votes from other parties, but also from new voters — namely, increased turnout. Considering the Italian case, this means that populist parties might have gained ground both because voters migrated from other parties to populist ones and because people who did not vote before felt compelled to do so.

As shown in the previous section, Tables 3.1 and 3.2 report a positive correlation between unemployment and turnout, though only significant when controlling for region trends (middle panel of both tables). This suggests that more people turned up to vote in places more affected by unemployment, in line with the perspective of Abramowitz and Saunders [2008], that the more importance people place in an election (which can be fueled by political polarization and economic hardship), the more they will turn up to vote. From the four period estimation reported in Table 3.1, the dimensioned coefficient shows that one standard deviation in unemployment is connected to an increase of 1% in turnout at the mean. This is rather relevant when one accounts for the fact that turnout in Italy has been dropping consistently since the late 1970s [Chiaramonte et al., 2018], including during the time frame of this study (see Table 2.3).

To better understand the dynamics of increasing populist shares and turnout in the Italian provinces, the same specifications as the previous section were run with the vote share over registered voters, not valid voters. Tables 3.3 and 3.4 report the results. As expected from a bigger pool of voters, coefficients drop in absolute numbers. The dimensioned effect of unemployment on populist voting shares (last column, middle panel of Table 3.3) remains similar: following a one standard deviation increase in unemployment, a rise of 16% in populist support at the mean (over valid votes, the result was of 17.8%). Conversely, in the pre/post crisis specification (absolute coefficient at last column, middle panel of Table 3.4) the dimensioned result shows a one stardard deviation increase in the difference of unemployment is associated

with a difference in populist voting 4.3% higher than average (results from Table 3.2 show a 4.7% increase when dimensioned).

From the fact that effects of unemployment on populist voting remain similar when considering registered voters, even with a positive (albeit small) link between unemployment and voting participation, one can argue that it is not rising turnout that is driving populist voting in general to go up. However, it does seem to be the case with the Five Star Movement. When considering only valid votes, the M5S's vote share increases by 15.6% in association with a one standard deviation rise in unemployment. Accounting for registered voters, this effect climbs to 24.1% (dimensioning the result found on the last column of Table 3.3). This suggests that the M5S managed to positively affect turnout, and that the party not only gained votes from rival parties but also from new voters.

Table 3.3: Panel FEs - Provincial Unemployment and Voting Shares - 2004-2018[12] - Registered voters

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Period FEs[3]							
Unemployment	0.026	0.474***	0.084	0.584***	-0.191	0.075	0.106
	(0.100)	(0.120)	(0.048)	(0.113)	(0.122)	(0.117)	(0.081)
Adjusted R^2	0.861	0.943	0.417	0.947	0.918	0.944	0.960
Region-Period FEs							
Unemployment	0.128*	0.313**	-0.027	0.413***	-0.174	-0.074	0.165*
	(0.059)	(0.096)	(0.031)	(0.110)	(0.088)	(0.093)	(0.080)
Adjusted R^2	0.975	0.984	0.817	0.984	0.972	0.974	0.976
MacroRegion-Period FEs							
Unemployment	0.040	0.296**	0.081	0.418***	-0.065	-0.022	0.087
	(0.077)	(0.092)	(0.060)	(0.119)	(0.129)	(0.119)	(0.080)
Adjusted R^2	0.946	0.967	0.471	0.964	0.948	0.955	0.965
No. of Clusters	104	104	104	104	104	104	104
Observations[4]	414	414	414	414	414	414	414

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.   [1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the independent variable is the average provincial unemployment in the years preceding the election. All specifications include province fixed effects. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p <$ 0.05, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.   [3] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.   [4] There are two missing observations as unemployment data for the province of South Sardinia has only been reported from 2008 onwards.

Table 3.4: Panel FEs - Provincial Unemployment and Voting Shares - Pre and Post-crisis periods[12] - Registered voters

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
No FEs[3]							
ΔUnemployment	0.159	0.412	0.109	0.680*	-0.066	-0.059	0.134
	(0.133)	(0.246)	(0.120)	(0.278)	(0.158)	(0.235)	(0.132)
Adjusted R^2	0.318	0.364	0.004	0.260	0.273	0.235	0.295
Region FEs							
ΔUnemployment	0.125	0.516**	-0.069	0.573**	-0.122	-0.221	0.255*
	(0.093)	(0.170)	(0.057)	(0.185)	(0.129)	(0.131)	(0.106)
Adjusted R^2	0.740	0.770	0.701	0.781	0.478	0.717	0.618
MacroRegion FEs							
ΔUnemployment	0.161	0.498*	0.046	0.705**	-0.041	-0.132	0.152
	(0.108)	(0.196)	(0.100)	(0.240)	(0.148)	(0.201)	(0.114)
Adjusted R^2	0.556	0.485	0.138	0.477	0.279	0.377	0.344
No. of Clusters	103	103	103	103	103	103	103
Observations[4]	103	103	103	103	103	103	103

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.   [1] This table reports OLS cross-section and fixed effects panel results. The dependent variable is the difference between vote shares for each party in the pre and post crisis periods. The independent variable is the difference in the average provincial unemployment for the pre and post crisis periods. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
[2] Votes shares are calculated as a fraction of registered voters in the province. Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.   [3] This panel reports cross-section results.   [4] There is one missing observation as unemployment data for the province of South Sardinia has only been reported from 2008 onwards.

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3.2 Instrumental Variable Approach

While the OLS panel results presented in the previous section are consistent and statistically significant, they do not imply a causal relationship between unemployment and populist voting. Firstly, because while the fixed effects methodology does control for several specific trends in the provinces, it cannot be ruled out that there are other, omitted trends that are not accounted for. Secondly, there is the issue of possible reverse causality. In this case, it seems safe to assume that it was not the rise in populist voting shares that caused the Great Recession. Lastly, there are the shortcomings of unemployment reporting: this type of data tends to be rather noisy, and official data does not account for the informal labour market.

To tackle these three limitations from OLS and explore a causal relationship between the variables studied, a 2SLS approach is implemented. Replicating the estimation strategy proposed by Algan et al. [2018], the share of construction in provincial industry gross value added is used as a Bartik-like instrument for provincial unemployment.[6] The construction segment is chosen as an instrument for two reasons: first, as it is one of the less representative sectors in local industry and therefore less likely to be endogenously affected by unobserved characteristics and trends. This way, the pre-crisis provincial industry specialization is assumed to capture an *exogenous* variation in unemployment.[7] Secondly, construction is chosen since the Great Recession hit this segment of the industry particularly hard. Thus, using it to instrument unemployment would better capture *crisis-driven* unemployment, as opposed to unemployment in general.

Two premises are the pillars of this instrumental variable approach: a) the provincial construction share of industry *does* affect unemployment, including when controlling for other industry shares and b) the provincial construction share *only* affects voting through unemployment (in the case of the pre/post specification, the premisse is that the pre-crisis construction share only affects the difference in voting shares through the difference in unemployment). This exclusion restriction is the paramount condition for causality, and a rather

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[6]The choice is based on the findings by Goldsmith-Pinkham et al. [2018] that the Bartik instrument is "numerically equivalent to using local industry shares as instruments". For more on Bartik instruments and how they interact local industry shares with country-wide industry growth, see Bartik [1991] and Blanchard and Katz [1992].

[7]In Algan et al. [2018], which studies 227 NUTS 2 regions across Europe, the construction shares range from 2% to 15%. In the Italian provinces (104 provinces equivalent to NUTS 3 regions), it ranges from 3% to 11%.

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difficult one to check directly in any instrumental variable estimation. In this case, considering the restricted time frame (and therefore a short-term effect), it is sensible to assume that any changes in the provincial industry specialization would affect voting behaviour through unemployment — here, shocks to the labour market are considered a proxy of the social cost of the crisis. There are, nevertheless, other channels through which the construction share of industry could affect voting, the main ones being immigration and education. To account for those, this study includes controls for educational attainment levels and the population share of non European-Union citizens. However, these channels cannot be ruled out and further research on it for the case of Italy would be needed.

3.2.1 Instrument Validity Check and First Stage of IV

First it's needed to establish that there is a significant relationship between the instrument and the endogenous variable. In the first stage of the 2SLS modelling, Italian provincial unemployment is regressed on the share of construction in the province's industry gross value added.

The general specification[8] is as follows:

$$U_{p,t} = \alpha + \beta C_{p,t} + \lambda_p + \psi + X'_{p,t}\gamma + \epsilon_{p,t} \tag{3.3}$$

In equation 3.3, $U_{p,t}$ is the provincial unemployment rate, and $C_{p,t}$ is the provincial construction share of industry in gross value added. λ_p captures the fixed effect of provinces, whereas ψ captures the extra fixed effects of each panel. This modelling is run for the four periods preceding each Italian election and also for the average periods pre and post-crisis. Results are addressed below.

Four Periods, 2004-2018

Including the four periods previously mentioned (2004-05, 2006-07, 2008-12 and 2013-17), OLS fixed effects panel regressions of provincial unemployment and the construction share of industry in value added are tested for the full Italian sample and two splits: North/South of Italy and provinces with high pre-crisis construction shares and those with low pre-crisis shares. Results

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[8]The subscripts indicate the following: $_p$ for province and $_t$ for time period. Controls are added in $X'_{p,t}$ regarding educational attainment levels and population characteristics such as gender, age and EU membership.

for Italy are reported in Table 3.5, and the splits results can be found in the Appendix. In all of them, only the least conservative specification shows a statistically significant result: the one controlling for provincial trends. When controls for time period trends and other industrial shares are introduced (columns 2-5 of Table 3.5), results become non-significant.

Across specifications and sample splits, results show a negative relationship between rising construction shares and unemployment. This goes in line with this study's hypothesis: provinces experiencing a *drop* in construction share report an *increase* in unemployment levels. When taking into account all 104 Italian provinces, the significant effect found is of a 1.05 percentage point drop in unemployment associated with an increase of 1p.p. in the construction share (first column of Table 3.5).

Table 3.5: First Stage of IV[1] - Unemployment and Construction Share - 2004-2017, 4 periods[2]

	(1)	(2)	(3)	(4)	(5)
ConstrShare[3]	-1.049***	0.033	-0.170	-0.013	-0.197
	(0.199)	(0.178)	(0.196)	(0.213)	(0.232)
No. of Clusters	104	104	104	104	104
Observations	414	414	414	414	414
Adjusted R^2	0.896	0.938	0.944	0.938	0.943
F-stat	46.437	4.662	1.619	3.448	1.280
ProvinceFE	Yes	Yes	Yes	Yes	Yes
PeriodFE[4]	No	Yes	No	Yes	No
MacroRegionPeriodFE	No	No	Yes	No	Yes
IndustryControls[5]	No	No	No	Yes	Yes

Sources: Eurostat, Italian National Institute of Statistics. [1] This table reports OLS fixed effects panel results. The dependent variable is provincial unemployment, and the independent variable is the share of construction in the provinces' total industry gross value added; [2] Average unemployment and industry data for the periods preceding each election: 2004-2005, 2006-2007, 2008-2012 and 2013-2017. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [3] Share of construction in Gross Value Added. [4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017. [5] Controls are included for the following Industry segments: Agriculture, Manufacturing, Financial activities, Trade and Government.

Differently from what Algan et al. [2018] found in Europe at the NUTS 2 level, it seems that in Italy the construction share of a province is not a good

predictor of its unemployment levels - therefore undermining this attempt of isolating a causal relationship between crisis-driven unemployment and populist voting.

When we look separately at the North and South, it's clear the effect is stronger in the Southern provinces, where a 1p.p. increase in the construction share is associated with a drop of 1.3p.p. in unemployment(first column of Table 5.14). [9] The scatter plots shown in Figure 3.2 illustrate how different the dynamics between North and South are. In the next sub-section, the first-stage of the IV is run interacting the construction share with each of the Italian macro-regions, to better understand the dynamics of the variables studied with further geographical detail.

Figure 3.2: Construction Share and Unemployment
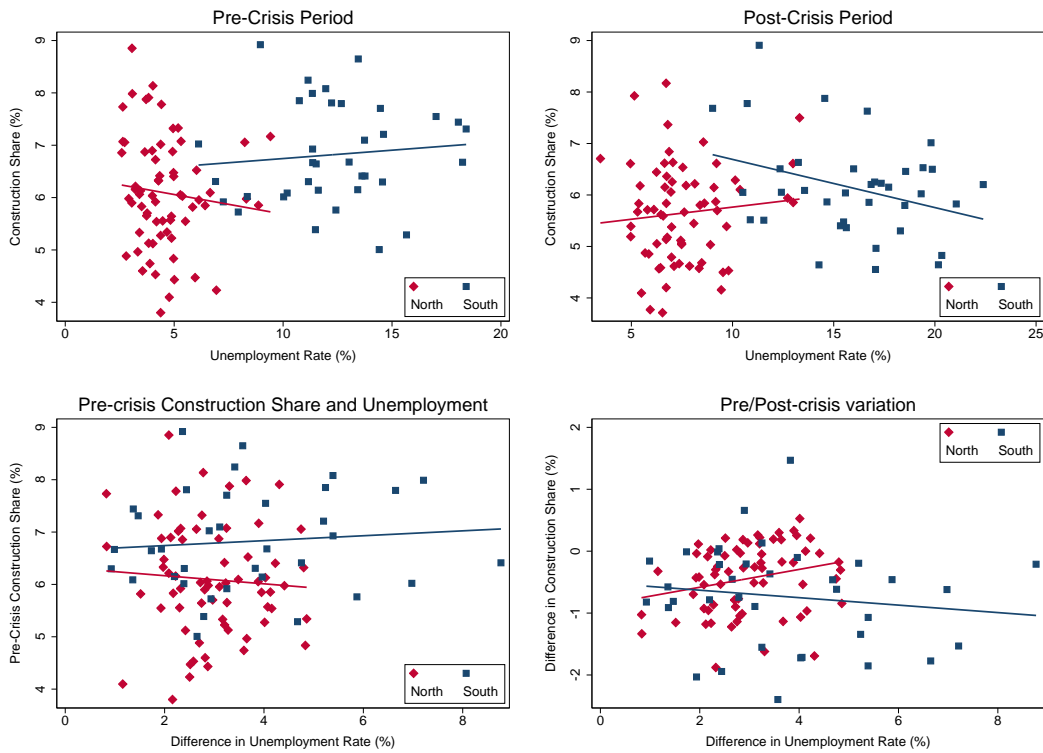
Sources: Italian National Institute of Statistics, Italian Ministry of Interior Affairs and Eurostat.

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[9]Interestingly, there seems to be no difference in this relationship in provinces with lower and higher pre-crisis construction shares (Table 5.15), and the effect is close to -1p.p. — in line with the other specifications.

Macro-regions When specifications are run on the interactions between the construction share of the provinces and the macro-region they belong to, results become more colourful. This interaction provides further details on what is driving the relationship (or lack therof) between construction shares and unemployment in the country. Results for the first stage with macro-region interactions are reported in Table 3.6.

The Southern macro-region shows a statistically significant relationship between construction share and unemployment across all models performed, even though the dimension of it diminishes the more conservative the specification becomes (bottom line of Table 3.6). In the Southern macro-region, the effect on unemployment connected to an increase of 1p.p. in the construction share ranges from -1.99p.p., when controlling for provincial trends (column 1), to around -0.8p.p. when controlling for time period, macro-region, and other industrial shares (columns 3-5). The Center and Isles macro-regions also show significant and negative results, whereas the North-East and North-West show significant but positive relationships. This suggests that construction share might be a good predictor of unemployment in the South of Italy, but not throughout the country, and that the relationship between those variables is different in the North and in the South. This might be due to the heterogeneity in economic and industrial characteristics between the regions.

Two Periods, Pre and Post-Crisis

To focus on the impact of the Great Recession, the difference in the average of the periods before and after it is taken into account. Once this difference is performed,, the number of observations drops considerably. This way, the results obtained from the two sample splits are not very reliable, as the number of observations is really small. Table 3.7 shows the results of the first stage of the IV considering the difference between the pre and post-crisis periods, and none of the four specifications tested shows any significant results. Similar results were obtained when testing the sample splits of North/South and High/Low pre-crisis construction shares. Testing the full sample divided by macro region also yields no significant results. With this instrument, it's not possible to establish a causal link between the unemployment derived from the Great Recession and populist voting at the provincial level in Italy.

General specification is the following[10]:

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[10]Data over the two periods are averaged for the modelling. The $_{pre}$ time period ranges from 2004 to 2008, and the $_{post}$ from 2009 to 2018.

Table 3.6: First Stage of IV[1] - Unemployment and Construction Share - 2004-2017, 4 periods[2] by MacroRegion

|	(1)	(2)	(3)	(4)	(5)
Northern					
Center × ConstrShare[3]	-1.727***	-0.017	-0.528	-0.040	-0.506
	(0.319)	(0.316)	(0.429)	(0.305)	(0.390)
NorthEast × ConstrShare	-0.248	0.760**	0.290	0.780*	0.248
	(0.315)	(0.275)	(0.330)	(0.298)	(0.382)
NorthWest × ConstrShare	0.454	1.268***	0.924*	1.274***	0.937*
	(0.361)	(0.280)	(0.381)	(0.354)	(0.442)
Southern					
Isles × ConstrShare	-0.673	-0.154	0.461	-0.133	0.655
	(0.481)	(0.374)	(0.777)	(0.410)	(0.796)
South × ConstrShare	-1.994***	-0.786*	-0.770*	-0.803*	-0.847*
	(0.417)	(0.304)	(0.332)	(0.312)	(0.341)
Observations	414	414	414	414	414
Adjusted R^2	0.905	0.943	0.945	0.942	0.945
F-stat	47.700	5.523	2.083	4.283	1.769
ProvinceFE	Yes	Yes	Yes	Yes	Yes
PeriodFE[4]	No	Yes	No	Yes	No
MacroRegionPeriodFE	No	No	Yes	No	Yes
IndustryControls[5]	No	No	No	Yes	Yes

Sources: Eurostat, Italian National Institute of Statistics. [1] This table reports OLS fixed effects panel results. The dependent variable is provincial unemployment, and the independent variable is the interaction between the share of construction in the provinces' total industry gross value added and the macro region it belongs to. [2] Average unemployment and industry data for the periods preceding each election: 2004-2005, 2006-2007, 2008-2012 and 2013-2017. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [3] Share of construction in Gross Value Added. [4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017. [5] Controls are included for the following Industry segments: Agriculture, Manufacturing, Financial activities, Trade and Government.

$$\Delta U_{p,post-pre} = \alpha + \beta PreC_p + \lambda_p + \psi + \Delta X'_{p,post-pre}\gamma + \epsilon_p \qquad (3.4)$$

In equation 3.4, $\Delta Uy_{p,post-pre}$ is the difference in the provincial unemployment rate before and after the crisis. $PreC_p$ is the pre-crisis construction share of industry in the province. λ_p captures the fixed effect of provinces, whereas ψ captures the extra fixed effects of each panel.

Table 3.7: First Stage of IV - Unemployment and Construction Share - Post and Pre Crisis Periods [1][2]

	(1)	(2)	(3)	(4)
Pre-crisis ConstrShare	-0.105	-0.141	-0.142	-0.241
	(0.193)	(0.168)	(0.191)	(0.197)
Observations	102	103	102	103
Adjusted R^2	0.202	0.174	0.304	0.181
RegionFE	Yes	No	Yes	No
MacroRegionFE	No	Yes	No	Yes
IndustryControls	No	No	Yes	Yes

Sources: Eurostat, Italian National Institute of Statistics. [1] This table reports OLS fixed effects panel results. The dependent variable is the difference of average provincial unemployment before (2004-2007) and after (2008-2017) the crisis, and the independent variable is the pre-crisis share of construction in the provinces' total industry gross value added; [2] Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

3.2.2 Reduced Form of IV

To access whether provincial construction share of industry and populist voting present any significant relationship, reduced-form estimates of the 2SLS are performed both using 4 periods and the difference between the pre and post-crisis periods.

The general specification is as follows:

$$y_{p,t} = \alpha + \beta C_{p,t} + \lambda_p + \psi_t + X'_{p,t}\gamma + \epsilon_{p,t} \qquad (3.5)$$

In equation 3.5, $y_{p,t}$ is the share of valid votes for each of the parties (and in one case, turnout), and $C_{p,t}$ is the provincial construction share of industry in gross value added. λ_p captures the fixed effect of provinces, whereas ψ_t captures the extra fixed effects of each panel.

Four Periods, 2004-2018

In these OLS fixed effects panels, voting shares are regressed directly on provincial construction shares. The expected relationship is negative, as dropping construction shares are expected to have positively affected populist voting. Algan et al. [2018] finds significant negative coefficients when performing these panels. This study, on the other hand, finds mainly positive coefficients when running the reduced-form estimates for the full sample (Table 3.8), albeit not statistically significant. The only party whose vote share shows a significant result is the League, suggesting that in places where the construction share rose by 1p.p. (rather than shrank) voting for the League increased by the same amount (first column, top panel of Table 3.8).

Figure 3.3: Differences in Construction Share and Populist Voting
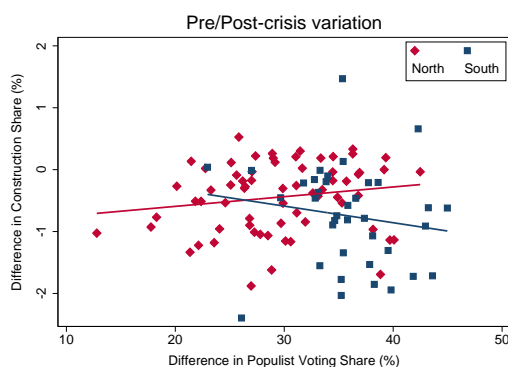
Sources: Italian National Institute of Statistics, Italian Ministry of Interior Affairs and Eurostat.

To better understand how this relationship plays out across the country, we perform the same panel controlling for time period trends on the interaction between construction shares and the five macro-regions. The results reported on Table 3.9 illustrate how the link studied varies greatly across regions. On the fourth column of the table, coefficients found suggest an opposite sign link in the South and the North of the country: the only macro-region that shows an expected negative result are the Isles; the South, the other macro-region composing the Southern part of Italy, has no statistically significant relationship between those two variables, only a positive effect on League votes (consistent with the OLS results that the League was negatively affected by unemployment in the South of Italy). In the Center, populist voting is

not significant, but League vote share is and it's negative as expected. In the North-East and North-West, the effect is significant but positive: as construction share rises, populist voting rises as well.

Those results are consistent with the first stage findings that construction shares are only good predictors of unemployment in the South. For a visual representation of how the relationship between construction share and populist voting is different in the Northern and Southern parts of Italy, see Figure 3.3. There, it is possible to see that, in the South, provinces that experienced a drop in construction share after the crisis mostly registered an increase in unemployment. Contrarily, Northern provinces exhibit an upward sloping relationship.

Table 3.8: IV Reduced Form - Voting and Construction Shares[1][2] - 2004-2018

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Period FEs[3]							
ConstrShare[4]	1.030**	-0.728	0.111	0.412	-0.970*	0.442	0.566***
	(0.360)	(0.760)	(0.231)	(0.666)	(0.424)	(0.442)	(0.157)
Adjusted R^2	0.871	0.938	0.405	0.951	0.914	0.932	0.961
Region-Period FEs							
ConstrShare	-0.069	0.378	0.263	0.571	0.004	-0.472	-0.056
	(0.278)	(0.673)	(0.183)	(0.669)	(0.405)	(0.473)	(0.185)
Adjusted R^2	0.976	0.983	0.811	0.985	0.973	0.967	0.976
MacroRegion-Period FEs							
ConstrShare	0.635*	0.114	0.089	0.838	-0.822	-0.265	0.456*
	(0.302)	(0.646)	(0.227)	(0.571)	(0.421)	(0.436)	(0.201)
Adjusted R^2	0.950	0.968	0.460	0.969	0.948	0.944	0.965
No. of Clusters	104	104	104	104	104	104	104
Observations	416	416	416	416	416	416	416

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior. [1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the independent variable is the is the share of construction in the provinces' total industry gross value added. All specifications include province fixed effects. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.   [3] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.   [4] Share of construction in Gross Value Added.

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Table 3.9: IV Reduced Form - Voting and Construction Shares[1][2] - 2004-2018 - Province and Period FEs by Macro-region

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Center × ConstrShare	-2.101***	1.851	-0.386	-0.636	1.226	1.339*	0.022
	(0.544)	(1.101)	(0.203)	(0.893)	(0.633)	(0.558)	(0.205)
Isles × ConstrShare	1.685**	-4.286***	-0.014	-2.615**	-0.321	1.117	1.118***
	(0.568)	(0.872)	(0.414)	(0.801)	(0.456)	(0.630)	(0.231)
NorthEast × ConstrShare	1.213	1.761*	0.307	3.281**	-2.838***	0.640	0.452
	(0.664)	(0.832)	(0.227)	(0.981)	(0.641)	(0.717)	(0.236)
NorthWest × ConstrShare	-0.692	5.440***	0.579	5.327***	-2.396***	-2.184**	0.298
	(0.691)	(1.105)	(0.383)	(1.079)	(0.560)	(0.760)	(0.430)
South × ConstrShare	2.178***	-2.371	0.188	-0.005	-0.499	-0.356	0.451
	(0.484)	(1.504)	(0.384)	(1.033)	(0.787)	(0.654)	(0.312)
No. of Clusters	104	104	104	104	104	104	104
Observations	416	416	416	416	416	416	416
Adjusted R^2	0.881	0.950	0.405	0.957	0.922	0.936	0.961

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.   [1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the interaction between the share of construction in the provinces' total industry gross value added and the macro region it belongs to. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/Bol). The Democratic Party is under the abbreviation 'PD'. Fixed effects are included for the provinces and periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.

Two Periods, Pre and Post-Crisis

In this subsection, the reduced form links *changes* in the voting shares to the pre-crisis construction share. General specification is the following[11]:

$$\Delta y_{p,post-pre} = \alpha + \beta PreC_p + \Delta X'_{p,post-pre}\gamma + \epsilon_p \tag{3.6}$$

In equation 3.6, $\Delta y_{p,post-pre}$ is the difference in the share of valid votes for each of the parties (and in one case, turnout) before and after the crisis. $PreC_p$ is the pre-crisis construction share of industry in the province. This is a cross-section.

Here, the coefficients are expected to be positive, as the hypothesis is that provinces with a higher pre-crisis construction share were more severely affected by the economic crisis and in turn increased their support for populist parties. As can be seen in Figure 3.4, this relationship is not true in the North of the country, and is not straight-forward in the South either.

Figure 3.4: Pre-crisis Construction Share and Populist Voting
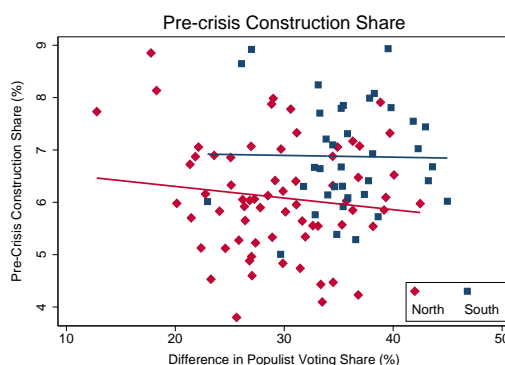
Sources: Italian National Institute of Statistics, Italian Ministry of Interior Affairs and Eurostat.

Results from the OLS fixed effects panels can be found in Table 3.10, and they are also the opposite of the expected and the ones found by Algan et al. [2018]. Not only populist voting is negatively related to pre-crisis construction share and not significant, but the Democratic Party's votes are positively related and significant. Sample splits also report similar results.

[11]Data over the two periods are averaged for the modelling. The $_{pre}$ time period ranges from 2004 to 2008, and the $_{post}$ from 2009 to 2018.

Table 3.10: IV Reduced form - Voting and Construction Shares - Pre and Post Crisis Periods - Cross-Section[12]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Pre-crisis ConstrShare	-0.222	-0.449	-0.213	-0.884	0.094	1.058*	-0.062
	(0.201)	(0.539)	(0.219)	(0.620)	(0.280)	(0.450)	(0.163)
Observations	103	103	103	103	103	103	103
Adjusted R^2	0.406	0.566	-0.003	0.387	0.194	0.327	0.301

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.   [1] This table reports OLS cross-section results. The dependent variable is the difference of average provincial voting shares before (2004-2007) and after (2008-2018) the crisis. The independent variable is the pre-crisis share of construction in the provinces' total industry gross value added. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: $*$ $p < 0.05$, $**$ $p < 0.01$, $***$ $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.

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3.2.3 Second Stage of IV

From the first stage and reduced form results, it becomes clear that the construction share of industry is not a good instrument for modelling unemployment in this scenario.

Firstly, because it violates the premiss that construction share holds a significant relationship with unemployment. As illustrated in the first stage, construction share is only a good predictor of unemployment in the South of the country, and even there it only shows statistical significance in the less conservative specifications. Secondly, the reduced form results show that pre-crisis industry specialization in construction does not have a clear, direct or positive relationship with populist voting. Finally, it could be case that the exclusion restriction has not been properly addressed by the controls on education and EU membership, and therefore the other, omitted channels through which construction share affects populist voting can be at play here.

The previous sections consistently argued that this instrumental variable approach is not statistically robust. Therefore, the results of the second stage estimation of the instrumental variable approach are, for the sake of curiosity, reported in the Appendix.

Chapter 4

Discussion

The purpose of this dissertation is to shed light on the relationship between economic anxiety and voting behaviour. Specifically, it studies the link between unemployment and voting for populist and mainstream parties in Italy between 2004 and 2018. Since the country endured prolonged economic hardship following the Great Recession and registered relevant growing support for the populists Five Star Movement and League on the subsequent elections, this study investigates whether the rising unemployment levels affected voters' choices on the ballots. The initial hypothesis is that rising unemployment positively affected voting for populist parties and negatively affected voting for mainstream ones.

Replicating the methodology proposed by Algan et al. [2018] to the Italian provinces, this study finds that rising unemployment is associated with increased support for populist parties in Italy, most strongly the M5S, as well as diminished support for the previous mainstream party Go Italy. Support for the mainstream Democratic Party does not seem to have a clear relationship with unemployment. This goes in line with the findings of Poletti et al. [2013], which shows that the worsening of economic conditions only affected voters' perception of Go Italy, but not of the Democratic Party.

By analysing voting shares from four general elections (2006, 2008, 2013 and 2018), fixed effects panel results show that the effect of a 1 percentage point increase in unemployment is associated with a surge of 0.9 p.p. in populist voting across the country. In other words, an increase of one standard deviation in unemployment is linked to a 17,8% rise in populist voting in relation to the mean. This relationship remains positive and significant when additional controls for period and regions are introduced. The party most clearly pushing this trend is the M5S, the only populist party to

present consistently positive and significant results across specifications and sample splits. Their results show that an increase of one standard deviation in unemployment is linked to a 15.6% to 24.9% rise in the voting share of M5S (in relation to their mean vote share), depending on how conservative the specification is. Those results are in line, albeit lower, with findings by Algan et al. [2018]: authors find a 1 to 1 percentage point relationship between unemployment and voting for populist parties across Europe, and a standardized coefficient of up to 30% in relation to the mean.

A stronger relationship between unemployment and populist voting is found in the Northern part of Italy. An increase of one standard deviation in unemployment is linked to a rise of 11% of populist voting at the mean in the North, while the effect is of 9.4% in the South. This effects is driven by the other main populist party, the League, which shows a positive relationship with unemployment in the North but a *negative* one in the South. Since the party was previously focused on Northern regionalism, it's not striking that it is not the one capturing votes fuelled by economic hardships in the South — it's the M5S that is. In fact, voting for the M5S is more sensitive to increasing unemployment levels in the South (17% above average following a one standard deviation increase in unemployment) then in the North (13% for the same reference). This study finds no evidence that rising unemployment is linked to voting for small populist parties, namely Italy of Value and Brothers of Italy.

These results support the claim that unemployment contributed to the expansion of populist support in Italy — but at the cost of whom? Analysis of the two main mainstream parties show that Go Italy consistently lost votes in provinces experiencing rising unemployment: across the country, an increase of 1p.p. in unemployment is associated with a drop of 0.4p.p in the vote share of Go Italy, and in the North the drop was up to 0.8p.p.. Through dimensioning, these results convey that an increase of one standard deviation in unemployment is connected to a reduction in average Go Italy vote shares by 8,5% in Italy and by 10.2% in the North. The Democratic Party did display a mostly negative relationship to unemployment, but not significant in most specifications. This suggests that other minor parties, not accounted for in this study, lost the majority of votes that ended up being cast for populists. Another concurrent possibility is that turnout increased.

Results show a consistently positive, but seldom significant relationship between turnout and unemployment. The dimensioned coefficient shows that

one standard deviation in unemployment is connected to an increase of 1% in turnout at the mean. This is rather relevant when one accounts for the fact that turnout in Italy was on a consistently downward trajectory during the time frame considered here. To better understand the dynamics of turnout, the same fixed effects specifications are run considering not the share of valid votes cast, but the total registered voters. While the dimensioned effect of unemployment on populist voting shares remains similar, the effect of the M5S increases. When considering only valid votes, the M5S's vote share increases by 15.6% in association with a one standard deviation rise in unemployment. Accounting for registered voters, this effect climbs to 24.1%. This suggests that the M5S managed to positively affect turnout, and that the party not only gained votes from rival parties but also from new voters.

While this study does find a significant, positive relationship between provincial unemployment and populist voting shares through fixed effects modelling, the instrumental variable approach does not yield statistically significant results and a causal link cannot be established. From the first stage and the reduced form estimates it becomes clear that the pre-crisis construction share of industry is not a valid instrument for unemployment in the case of the Italian provinces. Selected hypotheses for this are addressed below.

It might be the case that this estimation strategy works for large set of countries at NUTS 2 level, such as in Algan et al. [2018], but not for specific settings of NUTS 3 level as this study. It could also be that data available from Italy is not detailed or accurate enough, or still that the country's informal employment sector renders the unemployment statistics too noisy. Finally, there could be other channels through which industry specialization can affect voting behaviour that would violate the exclusion restriction of the IV approach.

Concisely, this study finds that unemployment has a positive relationship with populist voting in Italy: provinces experiencing rising unemployment also reported increases in vote shares for populist parties, specially the M5S. From the mainstream, Go Italy was particularly affected by the prolonged economic hardship the country endured and consistently lost vote shares in provinces experiencing higher unemployment levels. This study also finds that the instrument proposed by Algan et al. [2018] to investigate a causal link between crisis-driven unemployment and voting behaviour is not valid for the case of Italy. Further research would be to test other instruments for

crisis-led unemployment, in order to explore the possibility of causality in this case.

This study's findings build on the ever-growing empirical literature demonstrating that economic distress is a root of both populist supply and populist demand. Populism weakens the democratic process, dampens party cooperation and can have long-term economic implications [Algan et al., 2018]. Its rise is specially worrisome within the EU, as it fuels divisiveness among a block that has kept peace and fostered common economic growth since WWII — not to mention the fact that many countries in it share a currency. It is paramount for European policy makers to grasp that rising unemployment can be a fuel to political fallout.

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Chapter 5

Appendix

5.1 Detailed Information on Data

5.1.1 Italy: Geographical Information

Italy is divided in 20 regions and 112 provinces (including regular provinces, metropolitan cities, free municipal consortia and autonomous provinces), which are comparable to the NUTS 2 and NUTS 3 levels, respectively. Regions are also grouped in 5 macro-regions. Over the time frame studied, 2004-2018, changes were made to the composition of the provinces: in some cases, they were aggregated to form a new one; in others, a previous province was divided into several others. To be able to compare recent data with previous, provinces were aggregated back to the 104 provinces for which data was released since 2004.

Italian Macro-regions: North West, North East, Center, South, Isles.

Italian Regions: Piedmont, Aosta Valley, Liguria, Lombardy, Trentino-Alto Adige/Südtirol, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Tuscany, Umbria, Marche, Lazio, Abruzzo, Molise, Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Italian Provinces: L'Aquila, Teramo, Pescara, Chieti, Aosta, Bari, Brindisi, Foggia, Taranto, Lecce, Matera, Potenza, South Tyrol (capital: Bolzano), Cosenza, Catanzaro, Reggio Calabria, Crotone, Vibo Valentia, Caserta, Benevento, Naples, Avellino, Salerno, Bologna, Ferrara, Forli-Cesena, Modena, Parma, Piacenza, Ravenna, Reggio Emilia, Rimini, Udine, Gorizia, Pordenone, Triste, Viterbo, Rieti, Roma, Latina, Frosinone, Imperia, Savona,

Genova, La Spezia, Bergamo, Brescia, Como, Cremona, Lecco, Lodi, Mantua, Milan, Pavia, Sondrio, Varese, Macerata, Pesaro and Urbino, Ancona, Ascoli Pisceno, Campobasso, Isernia, Turin, Vercelli, Novara, Cuneo, Asti, Alessandria, Biella, Verbano Cusio Ossola, Sassari, Nuoro, Cagliari, Oristano, South Sardinia, Trapani, Palermo, Messina, Agrigento, Caltanissetta, Enna, Catania, Ragusa, Syracuse, Trento, Massa and Carrara, Lucca, Pistoia, Florence, Livorno, Pisa, Arezzo, Siena, Grosseto, Prato, Perugia, Terni, Verona, Vicenza, Belluno, Treviso, Venice, Padua, Rovigo.

Geographical Adjustments

Barletta-Andria-Trani   This province, part of the Italian region of Apulia, was created in 2009 by the joining of 10 comunes previously situated in the provinces of Bari and Foggia, both in the Apulia region. Population-wise, the new province of Barletta-Andria-Trani has 90% of its inhabitants originally from Bari. Therefore, data for both Bari and Barletta-Andria-Trani was aggregated under Bari.

Monza and Brianza   This province became active in 2009, formed of communes previously situated in the north-eastern part of the province of Milan. Therefore, data for both Monza and Brianza and Milan was aggregated under Milan.

Fermo   This province became active in 2009, formed of communes previously situated in the province of Ascoli Piceno. Therefore, data for both Fermo and Ascoli Piceno was aggregated under Ascoli Piceno.

South Sardinia   From 2008 to 2016, four provinces of the Sardinia Region - Olbia-Tempo, Ogliastra, Medio Campidano and Carbona-Iglesias - existed separately. From 2016 on, they were grouped into a new province called South Sardinia. The communes which formed those 4 provinces and, subsequently, South Sardinia, were from the provinces of Sassari, Nuoro and Cagliari. There is a change in the level of population in those three provinces between 2007 and 2008. For this study, the four provinces of Olbia-Tempo, Ogliastra, Medio Campidano and Carbona-Iglesias were aggregated to form a proxy South Sardinia starting in 2008. Because the objective of study here is the change in level of certain data on the year previous to the election, we consider the provinces of Sassari, Nuoro and Cagliari to be comparable throughout the time frame analysed.

Changes in Provinces' and Electoral Colleges' areas   As previously mentioned, some provinces had their geographical areas altered overtime. This process also took place in the division of electoral colleges, the majority of changes occurring following the implementation of the *Rosatellum* in 2017.

Fermo   Fermo has been a province since 2009, and it is formed of communes previously situated in the province of Ascoli Piceno. After the Electoral Law of 2017, the electoral college of Fermo was absorbed in its majority by the province of Ascoli Piceno, and in part my the province of Macerata. Therefore, electoral data for both Fermo and Ascoli Piceno was aggregated under Ascoli Piceno.

Monza and Brianza   This province became active in 2009, formed of communes previously situated in the north-eastern part of the province of Milan. Therefore, data for both Monza and Brianza and Milan was aggregated under Milan.

Trapani and Agrigento   One of the uninomial electoral colleges, Sicily 1 - 09 Mazara del Vallo, is composed of communes in both Trapani and Agrigento provinces. As the majority of the population resides on the Trapani communes, this electoral college was considered as part of Trapani.

5.1.2   Data Details

Unemployment   Italian unemployment data is obtained from the Labour Force Survey, released yearly by the Italian National Institute of Statistics. The unemployment rate is calculated by dividing the following data series: thousands of unemployed people older than 15 years old and the size of the labour force, also considering those over 15 years of age. Data is obtained yearly, starting in 2004. The province of South Sardinia, however, only presents data starting from 2008.

Education   Data is obtained from Eurostar. It considers people aged 25 to 64 and 3 ISCED 2011 [1] categories of education are used [2]. Data is available only at the NUTS 2 level, that is, the 20 region level. The Italian Institute of Statistics does not publish education attainment data at the provincial level on a yearly basis. However, such data exists from the National Census

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[1]International Standard Classification of Education

[2]Education categories included at the regional level are: primary (ISCED levels 0-2), secondary (ISCED levels 3-4) and tertiary (ISCED levels 5-8).

of 2011, which is included in some specifications of the models, namely the pre/post ones [3].

Population   Data obtained from the Italian National Statistics Institute (Istat). Data used: male/female ratio and total resident population divided in four different age groups, as follows: 18-25 year-olds, 26-39 year-olds, 40-59 year-olds and +60 year-olds.

Foreign population   Data is from the Italian National Statistics Institute (Istat). Two sets of data are used, depending on the specification and on the robustness check: the resident population of non-EU citizens and the resident population of all foreigners, including those from the European Union.

Income   There is no income data published yearly at the provincial level (equivalent to NUTS 3), only at the regional level (equivalent to NUTS 2). This study uses data from the Italian National Statistics Institute (Istat) on provincial per-capita wages for the year of 2014, 2015 and 2016.

5.1.3   Additional Summary Tables and Descriptive Graphs

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[3]At the provincial level, for the specifications that allow its use, one more category is included: no education, which ranges from illiteracy to literacy without formal education.

Table 5.1: Summary Statistics - Northern Italy - Pre and Post-crisis[1]

	2004-07					2008-17				
	Obs.	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Max
Unemployment[2]	67	4.6	1.5	2.6	9.4	67	7.5	2.0	3.5	13.3
Industry Shares[3]										
Construction	67	6.1	1.1	3.8	8.9	67	5.6	1.0	3.7	8.2
Manufacturing	67	20.4	7.3	4.2	35.9	67	19.1	7.3	4.1	35.5
Government	67	18.2	3.8	11.5	29.0	67	19.8	4.0	13.3	33.9
Financial	67	5.2	1.1	3.3	8.8	67	5.0	1.4	3.4	12.4
Trade	67	23.7	3.6	17.4	33.0	67	22.8	3.2	17.1	30.5
Agriculture	67	2.6	1.9	0.2	8.9	67	2.5	1.9	0.2	8.6
Voting Shares[4]										
Populist	67	11.2	7.5	2.1	29.1	67	40.7	5.1	15.5	49.3
League	67	8.4	7.4	0.1	26.8	67	13.6	5.6	4.7	29.5
Five Star	67	0.0	0.0	0.0	0.0	67	24.2	4.3	10.0	32.9
IdV/BofI	67	2.7	0.6	0.0	4.2	67	3.0	0.9	0.8	5.5
Go Italy	67	26.9	5.2	8.7	42.3	67	14.8	3.4	0.0	24.1
PD	67	32.7	9.4	0.0	50.8	67	22.9	6.3	0.0	39.0
Turnout	67	84.9	2.4	78.6	88.7	67	77.4	2.7	70.5	82.4

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the Italian provinces situated in the North East, North West and Center macro-regions. [2] Unemployment rate (%). [3] In percentage of total Industry Gross Value Added. [4] Vote shares are percentages from the total of valid votes cast. The pre-crisis period (2004-07) includes the elections of 2006 and 2008, and the post-crisis period (2008-17) includes the elections of 2013 and 2018. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 5.2: Summary Statistics - Southern Italy - Pre and Post-crisis[1]

	2004-07					2008-17				
	Obs.	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Max
Unemployment[2]	36	12.3	3.1	6.1	18.4	37	16.0	3.4	9.0	22.4
Industry Shares[3]										
Construction	37	6.9	1.0	5.0	8.9	37	6.1	1.0	4.6	8.9
Manufacturing	37	11.1	5.4	3.1	25.7	37	8.8	4.6	2.8	23.9
Government	37	28.7	3.8	19.4	35.6	37	30.0	3.7	20.3	36.1
Financial	37	3.6	0.9	1.5	5.1	37	3.4	0.6	2.3	4.6
Trade	37	21.1	3.9	14.4	32.2	37	21.8	3.6	16.4	34.8
Agriculture	37	5.0	2.2	1.1	11.2	37	4.8	2.2	1.0	11.3
Voting Shares[4]										
Populist	37	4.7	3.0	2.6	19.0	37	40.5	4.3	28.6	48.6
League	37	0.7	1.0	0.1	4.9	37	3.6	1.5	1.5	8.2
Five Star	37	0.0	0.0	0.0	0.0	37	34.0	4.6	22.7	43.9
IdV/BofI	37	4.0	3.1	2.0	18.9	37	2.9	1.0	1.7	5.8
Go Italy	37	32.1	4.0	22.2	38.7	37	20.0	3.0	13.9	24.4
PD	37	28.9	4.4	20.4	39.2	37	16.6	2.3	12.1	21.9
Turnout	37	76.9	3.6	66.8	83.9	37	67.9	4.7	60.2	76.7

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the Italian provinces situated in the South and Isles macro-regions.   [2] Unemployment rate (%).
[3] In percentage of total Industry Gross Value Added.   [4] Vote shares are percentages from the total of valid votes cast. The pre-crisis period (2004-07) includes the elections of 2006 and 2008, and the post-crisis period (2008-17) includes the elections of 2013 and 2018. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 5.3: Summary Statistics - North West Macro-region - 2004-2017[1]

	2004-05	2006-07	2008-12	2013-17	Total Obs.[2]
Unemployment	4.6	3.9	6.0	8.6	96
	(1.2)	(0.8)	(1.1)	(1.8)	
Industry Shares[3]					
Construction	5.9	6.1	6.2	5.5	96
	(1.2)	(1.2)	(1.2)	(1.0)	
Manufacturing	21.3	21.4	19.8	20.3	96
	(7.8)	(7.6)	(7.2)	(7.8)	
Government	17.0	17.1	18.6	18.8	96
	(3.8)	(3.4)	(3.8)	(3.8)	
Financial	5.2	5.6	4.9	5.2	96
	(1.3)	(1.4)	(1.4)	(1.3)	
Trade	23.9	23.3	22.8	22.1	96
	(4.2)	(4.1)	(3.5)	(3.5)	
Agriculture	2.5	2.2	2.2	2.2	96
	(2.1)	(1.9)	(1.8)	(1.9)	
	2006	2008	2013	2018	Total Obs.
Voting Shares[4]					
Populist	11.0	20.6	33.7	50.9	96
	(4.7)	(8.2)	(2.9)	(3.4)	
League	9.1	16.9	8.9	25.3	96
	(4.7)	(8.2)	(5.7)	(5.3)	
Five Star	0	0	22.8	21.9	94
	(0)	(0)	(5.1)	(3.6)	
IdV/BofI	1.9	3.7	2.1	3.7	96
	(0.5)	(1.1)	(0.9)	(0.9)	
Go Italy	24.7	33.1	19.5	12.7	96
	(6.1)	(5.3)	(4.6)	(3.1)	
PD	26.3	27.4	23.1	17.4	96
	(7.3)	(7.6)	(5.8)	(4.2)	
Turnout	85.9	82.3	77.3	75.1	96
	(2.2)	(3.0)	(3.0)	(2.5)	

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the Italian provinces situated in the North West macro-region. All values are in percentage points and are means for the period indicated. Standard deviation is reported in parentheses. [2] This panel is strongly balanced.
[3] In percentage of total industry Gross Value Added. [4] Vote shares are percentages from the total of valid votes cast. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 5.4: Summary Statistics - North East Macro-region - 2004-2017[1]

	2004-05	2006-07	2008-12	2013-17	Total Obs.[2]
Unemployment	4.1	3.4	5.1	7.4	88
	(0.9)	(0.7)	(1.1)	(1.7)	
Industry Shares[3]					
Construction	6.0	6.4	5.9	4.9	88
	(1.0)	(1.2)	(1.0)	(0.8)	
Manufacturing	21.4	22.1	20.8	21.2	88
	(7.0)	(7.3)	(7.2)	(7.3)	
Government	17.7	17.8	19.1	18.8	88
	(3.8)	(3.7)	(3.6)	(3.6)	
Financial	4.7	5.0	4.8	5.3	88
	(1.1)	(1.2)	(1.6)	(1.9)	
Trade	24.2	23.6	23.2	23.1	88
	(3.8)	(3.9)	(3.7)	(3.9)	
Agriculture	2.8	2.5	2.5	2.7	88
	(1.4)	(1.3)	(1.4)	(1.6)	
	2006	2008	2013	2018	Total Obs.
Voting Shares[4]					
Populist	8.4	18.2	31.2	50.1	88
	(4.4)	(9.4)	(6.6)	(7.7)	
League	6.5	14.2	5.6	23.2	88
	(4.1)	(9.3)	(3.8)	(6.6)	
Five Star	0	0	24.2	23.0	86
	(0)	(0)	(4.3)	(3.6)	
IdV/BofI	1.9	4.0	1.4	3.8	88
	(0.4)	(0.7)	(0.7)	(1.1)	
Go Italy	20.7	28.2	16.7	9.6	88
	(4.0)	(5.1)	(3.3)	(1.6)	
PD	32.8	33.8	27.0	19.0	88
	(10.0)	(9.5)	(8.1)	(5.2)	
Turnout	87.6	84.2	80.5	77.1	88
	(2.4)	(2.8)	(3.1)	(3.0)	

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the Italian provinces situated in the North East macro-region. All values are in percentage points and are means for the period indicated. Standard deviation is reported in parentheses. [2] This panel is strongly balanced. [3] In percentage of total industry Gross Value Added. [4] Vote shares are percentages from the total of valid votes cast. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 5.5: Summary Statistics - Center Macro-region - 2004-2017[1]

	2004-05	2006-07	2008-12	2013-17	Total Obs.[2]
Unemployment	6.2	5.5	7.3	10.9	84
	(1.7)	(1.7)	(1.9)	(2.6)	
Industry Shares[3]					
Construction	5.9	6.3	6.2	5.2	84
	(1.0)	(0.9)	(1.0)	(0.8)	
Manufacturing	17.9	17.9	16.1	16.0	84
	(6.6)	(6.6)	(6.5)	(6.6)	
Government	20.1	19.9	21.7	21.8	84
	(3.6)	(3.5)	(4.0)	(4.3)	
Financial	5.1	5.4	4.7	5.0	84
	(0.9)	(0.9)	(1.0)	(0.9)	
Trade	23.6	23.4	22.7	22.8	84
	(2.6)	(2.6)	(2.4)	(2.7)	
Agriculture	3.0	2.8	2.8	2.9	84
	(2.3)	(2.3)	(2.2)	(2.2)	
	2006	**2008**	**2013**	**2018**	**Total Obs.**
Voting Shares[4]					
Populist	2.4	4.9	29.2	48.9	84
	(0.6)	(1.4)	(3.7)	(5.0)	
League	0.9	1.5	0.6	16.81	84
	(0.5)	(1.2)	(0.3)	(2.4)	
Five Star	0	0	26.4	27.2	82
	(0)	(0)	(3.5)	(4.5)	
IdV/BofI	1.6	3.4	2.2	4.8	84
	(0.4)	(0.7)	(0.7)	(1.3)	
Go Italy	18.9	35.5	19.4	10.9	84
	(3.9)	(6.7)	(4.2)	(2.5)	
PD	36.9	40.3	29.9	21.8	84
	(7.2)	(6.8)	(6.5)	(6.0)	
Turnout	86.6	83.1	78.5	76.4	84
	(1.4)	(1.5)	(2.1)	(2.2)	

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the Italian provinces situated in the Center macro-region. All values are in percentage points and are means for the period indicated. Standard deviation is reported in parentheses.   [2] This panel is strongly balanced.
[3] In percentage of total industry Gross Value Added.   [4] Vote shares are percentages from the total of valid votes cast. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 5.6: Summary Statistics - South Macro-region - 2004-2017[1]

	2004-05	2006-07	2008-12	2013-17	Total Obs.[2]
Unemployment	12.7	10.4	12.3	18.0	92
	(3.3)	(2.5)	(2.7)	(4.8)	
Industry Shares[3]					
Construction	6.8	6.9	6.8	5.9	92
	(1.1)	(1.1)	(1.1)	(1.0)	
Manufacturing	12.6	12.8	11.0	10.1	92
	(5.9)	(5.7)	(5.0)	(5.0)	
Government	27.5	27.9	28.9	28.7	92
	(3.7)	(3.9)	(3.6)	(3.7)	
Financial	3.3	3.5	3.2	3.5	92
	(0.8)	(0.9)	(0.7)	(0.6)	
Trade	21.5	21.0	21.7	22.0	92
	(4.2)	(3.9)	(3.8)	(4.1)	
Agriculture	4.9	4.2	4.1	4.6	92
	(2.0)	(1.6)	(1.6)	(2.0)	
	2006	**2008**	**2013**	**2018**	**Total Obs.**
Voting Shares[4]					
Populist	3.5	6.3	26.5	50.9	92
	(1.6)	(6.0)	(4.3)	(4.3)	
League	0.5	0	0.2	7.0	92
	(0.5)	(0)	(0.2)	(3.2)	
Five Star	0	0	23.7	40.1	90
	(0)	(0)	(3.5)	(5.3)	
IdV/BofI	3.0	6.3	2.6	3.8	92
	(1.6)	(5.9)	(2.0)	(0.9)	
Go Italy	22.9	40.7	23.8	16.7	92
	(3.6)	(4.8)	(3.8)	(3.0)	
PD	28.6	29.6	20.9	12.9	92
	(3.6)	(5.0)	(2.2)	(1.6)	
Turnout	79.5	76.7	70.1	69.4	92
	(3.8)	(4.4)	(5.3)	(4.5)	

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the Italian provinces situated in the Center macro-region. All values are in percentage points and are means for the period indicated. Standard deviation is reported in parentheses.   [2] This panel is strongly balanced.
[3] In percentage of total industry Gross Value Added.   [4] Vote shares are percentages from the total of valid votes cast. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Table 5.7: Summary Statistics - Isles Macro-region - 2004-2017[1]

	2004-05	2006-07	2008-12	2013-17	Total Obs.[2]
Unemployment	15.2	12.2	14.4	20.2	54
	(3.7)	(3.0)	(2.3)	(3.2)	
Industry Shares[3]					
Construction	7.0	6.9	6.4	5.3	56
	(1.0)	(0.8)	(0.8)	(0.8)	
Manufacturing	8.3	8.5	6.7	5.2	56
	(3.3)	(3.3)	(2.4)	(1.2)	
Government	29.9	30.7	31.9	32.2	56
	(3.4)	(3.2)	(3.2)	(2.7)	
Financial	3.8	4.0	3.4	3.7	56
	(0.8)	(0.9)	(0.4)	(0.6)	
Trade	21.2	20.7	21.4	22.2	56
	(3.9)	(3.7)	(3.4)	(2.8)	
Agriculture	6.0	5.2	5.2	5.7	56
	(2.8)	(2.7)	(2.7)	(2.7)	
	2006	**2008**	**2013**	**2018**	**Total Obs.**
Voting Shares[4]					
Populist	5.2	3.3	32.8	54.2	56
	(2.8)	(0.7)	(4.3)	(2.7)	
League	2.6	0	0.2	6.8	56
	(2.7)	(0)	(0.1)	(2.8)	
Five Star	0	0	31.2	43.9	54
	(0)	(0)	(4.5)	(4.4)	
IdV/BofI	2.6	3.3	1.5	3.5	56
	(1.2)	(0.7)	(0.4)	(0.6)	
Go Italy	24.4	40.8	22.2	16.9	56
	(4.5)	(4.6)	(3.5)	(3.0)	
PD	28.5	28.9	20.9	11.6	56
	(5.1)	(6.1)	(4.1)	(2.0)	
Turnout	76.1	73.5	65.8	63.6	56
	(2.0)	(2.0)	(2.5)	(2.3)	

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports summary statistics from the Italian provinces situated in the Isles macro-region. All values are in percentage points and are means for the period indicated. Standard deviation is reported in parentheses.   [2] This panel is strongly balanced. The exception is the province of South Sardinia, which has unemployment data starting from 2008.   [3] In percentage of total industry Gross Value Added.   [4] Vote shares are percentages from the total of valid votes cast. The label 'Populist' represents the sum of votes from the following parties: League, M5S, Italy of Value and Brothers of Italy.

Figure 5.1: Distribution of Vote Shares — Northern Italy
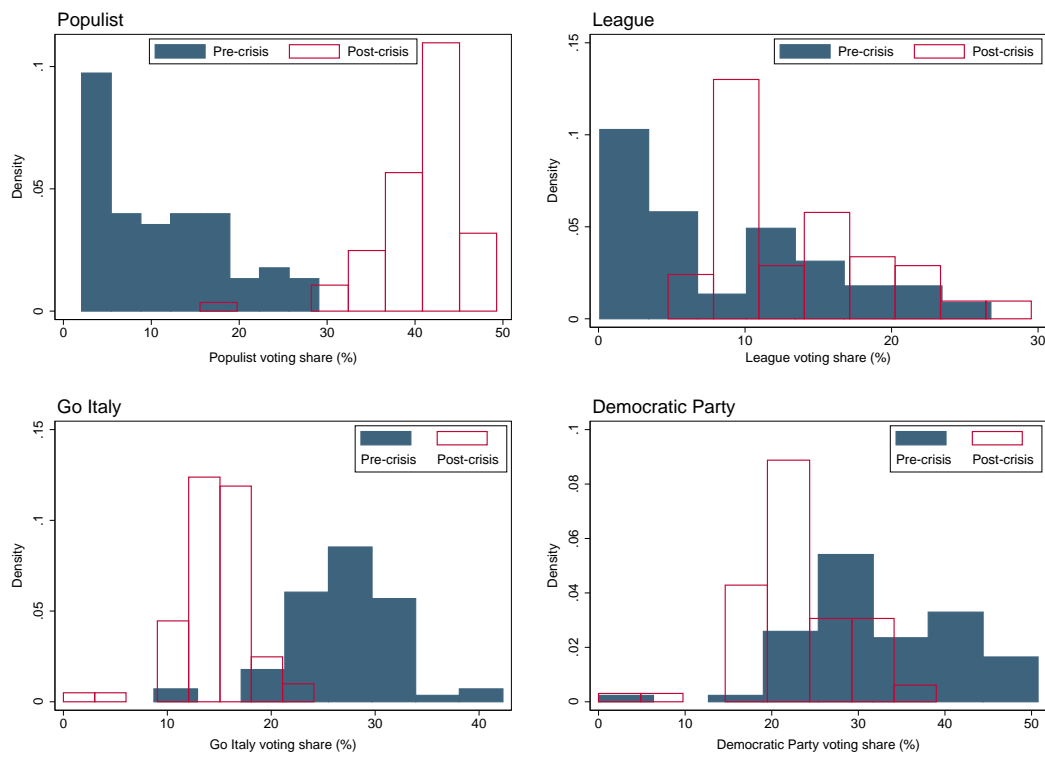
Sources: Italian National Institute of Statistics and Italian Ministry of Interior Affairs.

Figure 5.2: Distribution of Vote Shares — Southern Italy
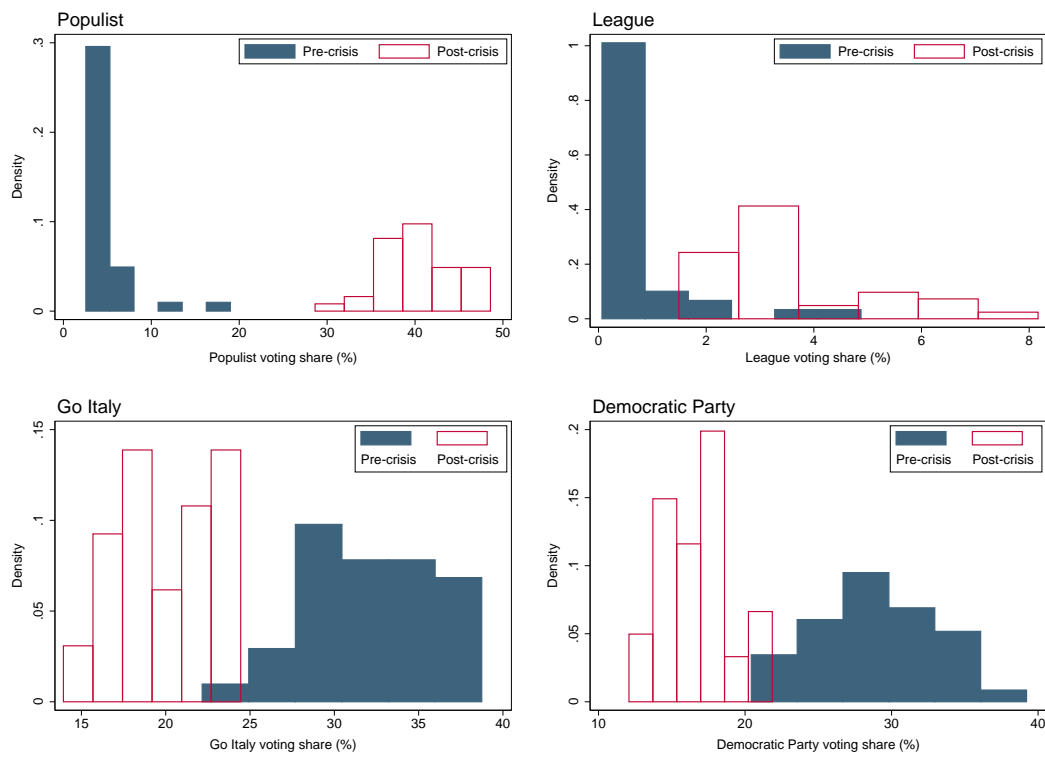
Sources: Italian National Institute of Statistics and Italian Ministry of Interior Affairs.

5.1.4   Italy: The Electoral System

Following the end of WWII, Italy transitioned from a Monarchy to a Republic, adopting a bicameral parliamentary system in place until present day. The voting system used has undergone several reforms throughout the years and, presently, general elections are held for the Chamber of Deputies (composed by 630 members) and the Senate of the Republic (315 members). A special parliamentary council defines who will fill the ceremonial role of President of the Republic, and the system requires that both houses support the Prime Minister in order for him or her to govern.

Over the decades following the First Republic, intense voter fragmentation across the country made it extremely difficult for parties to obtain majority on their own, which led to the forming of multiparty coalitions many times unpredictable and unstable. Italy has had 66 governments since 1946, becoming a country known for political instability and short-lived coalitions.

Amid political unrest and extensive corruption scandals, not to mention economic instability, Italians voted in favour of a massive electoral reform, the *Matarellum*, in a wide-ranging referendum in 1993. The proportional representation voting system was abandoned, and a new, intricate system mixing plurality voting, proportional representation, special proportionality methods and lifelong terms for selected senators was put in place. The new voting system was intended to diminish instability. The following elections took place in 1994 and elected many first-timers, which signalled voters' desire for change and redirecting.

In 2005, the government controversially approved a new voting system: the *Porcellum*, which regulated the elections of 2006, 2008 and 2013. The new system kept proportional representation, and introduced majority prizes and blocked lists of candidates.[4] There were thresholds of minimum vote share each party needed to be allocated seats at the Chamber (4%) and at the Senate (8%), as well as extra seats rewarded for the majority winner country-wide. In 2017, Italy again reformed its electoral system following an economic and political crisis. The Italian Electoral Law of 2017 became informally known by *Rosatellum*, given the name of its proposer, Ettore Rosato. The new parallel voting system implemented mixes around 1/3 (37%) of first-past-the-post voting with 2/3 (63%) proportional voting.

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[4]The system was based on the Hare-Niemeyer Method.

5.2 Modelling: Additional Results

Table 5.8: Panel FEs - Provincial Unemployment and Voting Shares - 2004-2018[12] - North[3]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Period FEs[4]							
Unemployment	0.534**	0.610*	-0.029	1.116**	-0.831***	-0.283	0.129
	(0.195)	(0.280)	(0.059)	(0.337)	(0.225)	(0.248)	(0.116)
Adjusted R^2	0.925	0.958	0.697	0.956	0.917	0.953	0.957
Region-Period FEs							
Unemployment	0.461**	0.393	-0.065	0.789***	-0.459**	-0.223	0.116
	(0.144)	(0.206)	(0.074)	(0.224)	(0.165)	(0.198)	(0.089)
Adjusted R^2	0.975	0.984	0.815	0.987	0.976	0.974	0.966
MacroRegion-Period FEs							
Unemployment	0.580**	0.656*	-0.045	1.191***	-0.644**	-0.387	0.125
	(0.171)	(0.301)	(0.063)	(0.326)	(0.222)	(0.235)	(0.116)
Adjusted R^2	0.951	0.960	0.721	0.969	0.949	0.968	0.958
No. of Clusters	67	67	67	67	67	67	67
Observations	268	268	268	268	268	268	268

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior. [1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the independent variable is the average provincial unemployment in the years preceding the election. All specifications include province fixed effects. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p <$ 0.05, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'. [3] Northern region sample, which encompasses the following macro regions: North-East, North-West and Center. [4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.

Table 5.9: Panel FEs - Provincial Unemployment and Voting Shares - 2004-2018[12] - South[3]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Period FEs[4]							
Unemployment	-0.254*	0.648***	0.080	0.474*	-0.156	0.110	0.023
	(0.106)	(0.177)	(0.095)	(0.188)	(0.113)	(0.191)	(0.124)
Adjusted R^2	0.782	0.973	0.371	0.971	0.950	0.893	0.930
Region-Period FEs							
Unemployment	-0.057	0.414*	-0.081	0.275	-0.221	-0.033	0.155
	(0.061)	(0.197)	(0.072)	(0.200)	(0.111)	(0.144)	(0.113)
Adjusted R^2	0.911	0.983	0.794	0.985	0.968	0.934	0.959
MacroRegion-Period FEs							
Unemployment	-0.257*	0.570**	0.097	0.410*	-0.142	0.084	-0.001
	(0.111)	(0.178)	(0.106)	(0.183)	(0.111)	(0.192)	(0.116)
Adjusted R^2	0.786	0.979	0.395	0.978	0.950	0.891	0.934
No. of Clusters	37	37	37	37	37	37	37
Observations[5]	146	146	146	146	146	146	146

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.
[1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the independent variable is the average provincial unemployment in the years preceding the election. All specifications include province fixed effects. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.   [3] Southern region sample, which encompasses the following macro regions: South and Isles.   [4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.   [5] There are two missing observations as unemployment data for the province of South Sardinia has only been reported from 2008 onwards.

Table 5.10: Panel FEs - Provincial Unemployment and Voting Shares - 2004-2018[12] - High Pre-Crisis Construction Share[3]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Period FEs[4]							
Unemployment	0.078	0.661**	0.100	0.839***	-0.268	0.071	0.127
	(0.165)	(0.202)	(0.069)	(0.173)	(0.181)	(0.162)	(0.098)
Adjusted R^2	0.854	0.942	0.480	0.950	0.902	0.929	0.954
Region-Period FEs							
Unemployment	0.100	0.455*	-0.070	0.484*	-0.312*	-0.080	0.116
	(0.101)	(0.184)	(0.038)	(0.205)	(0.122)	(0.115)	(0.111)
Adjusted R^2	0.980	0.987	0.626	0.987	0.973	0.961	0.971
MacroRegion-Period FEs							
Unemployment	-0.061	0.610**	0.043	0.592***	-0.026	-0.021	0.083
	(0.114)	(0.181)	(0.072)	(0.161)	(0.151)	(0.184)	(0.094)
Adjusted R^2	0.942	0.970	0.494	0.974	0.949	0.943	0.956
No. of Clusters	52	52	52	52	52	52	52
Observations[5]	206	206	206	206	206	206	206

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior. [1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the independent variable is the average provincial unemployment in the years preceding the election. All specifications include province fixed effects. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.   [3] Sample includes provinces with a pre-crisis construction share above the median, 0.0625.   [4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.   [5] There are two missing observations as unemployment data for the province of South Sardinia has only been reported from 2008 onwards.

Table 5.11: Panel FEs - Provincial Unemployment and Voting Shares - 2004-2018[1][2] - Low Pre-Crisis Construction Share[3]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Period FEs[4]							
Unemployment	0.072	0.712*	0.145	0.928**	-0.644***	0.069	0.064
	(0.198)	(0.334)	(0.138)	(0.269)	(0.179)	(0.256)	(0.144)
Adjusted R^2	0.881	0.940	0.350	0.956	0.928	0.932	0.965
Region-Period FEs							
Unemployment	0.415*	0.387	-0.021	0.780**	-0.158	-0.424	0.113
	(0.166)	(0.249)	(0.086)	(0.280)	(0.144)	(0.231)	(0.066)
Adjusted R^2	0.976	0.983	0.782	0.986	0.980	0.968	0.983
MacroRegion-Period FEs							
Unemployment	0.193	0.548*	0.279	1.020**	-0.525**	-0.208	0.049
	(0.177)	(0.254)	(0.199)	(0.313)	(0.170)	(0.350)	(0.132)
Adjusted R^2	0.955	0.968	0.429	0.968	0.951	0.944	0.969
No. of Clusters	52	52	52	52	52	52	52
Observations	208	208	208	208	208	208	208

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior. [1] This table reports OLS fixed effects panel results. The dependent variable is the vote share for each party, and the independent variable is the average provincial unemployment in the years preceding the election. All specifications include province fixed effects. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.
[3] Sample includes provinces with a pre-crisis construction share below the median, 0.0625.
[4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.

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5.2.1 Instrument Validity Check

Table 5.12: Instrument Validity Check[1] - Unemployment and Construction Share - 2004-2017, yearly[2]

	(1)	(2)	(3)	(4)	(5)
ConstrShare [3]	-1.071***	-0.073	-0.213	-0.128	-0.250
	(0.153)	(0.150)	(0.166)	(0.187)	(0.199)
Observations	1348	1348	1348	1348	1348
Adjusted R^2	0.866	0.918	0.924	0.918	0.924
F-stat	52.655	5.100	1.933	4.562	1.506
No. of Provinces	104	104	104	104	104
No. of Regions	20	20	20	20	20
ProvinceFE	Yes	Yes	Yes	Yes	Yes
PeriodFE[4]	No	Yes	No	Yes	No
MacroRegionPeriodFE	No	No	Yes	No	Yes
IndustryControls [5]	No	No	No	Yes	Yes

Sources: Eurostat, Italian National Institute of Statistics.

[1] This table reports OLS fixed effects yearly panel results. The dependent variable is provincial unemployment, and the independent variable is the share of construction in the provinces' total industry gross value added;

[2] Yearly unemployment and industry data for the period from 2004 to 2017. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [3] Share of construction in Gross Value Added.   [4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.   [5] Controls are included for the following Industry segments: Agriculture, Manufacturing, Financial activities, Trade and Government.

5.2.2 First Stage of IV, Sample Splits

Table 5.13: Instrument Validity Check[1] - Unemployment and Construction Share - 2004-2017, yearly[2] - MacroRegions

	(1)	(2)	(3)	(4)	(5)
Northern					
Center × ConstrShare[3]	-1.363***	-0.050	-0.566	-0.079	-0.576
	(0.265)	(0.284)	(0.312)	(0.285)	(0.291)
NorthEast × ConstrShare	-0.170	0.564*	0.184	0.558*	0.161
	(0.270)	(0.240)	(0.291)	(0.255)	(0.314)
NorthWest × ConstrShare	0.155	0.916***	0.504	0.899**	0.509
	(0.282)	(0.254)	(0.342)	(0.304)	(0.386)
Southern					
Isles × ConstrShare	-0.994**	-0.249	0.183	-0.257	0.208
	(0.363)	(0.301)	(0.607)	(0.350)	(0.657)
South × ConstrShare	-2.111***	-0.793**	-0.635*	-0.802**	-0.680*
	(0.359)	(0.278)	(0.300)	(0.281)	(0.307)
Observations	1348	1348	1348	1348	1348
Adjusted R^2	0.874	0.921	0.925	0.922	0.925
F-stat	51.818	5.350	2.523	4.553	2.221
ProvinceFE	Yes	Yes	Yes	Yes	Yes
PeriodFE[4]	No	Yes	No	Yes	No
MacroRegionPeriodFE	No	No	Yes	No	Yes
IndustryControls[5]	No	No	No	Yes	Yes

Sources: Eurostat, Italian National Institute of Statistics. [1] This table reports OLS fixed effects yearly panel results. The dependent variable is provincial unemployment, and the independent variable is the interaction between the share of construction in the provinces' total industry gross value added and the macro region it belongs to. [2] Yearly unemployment and industry data for the period from 2004 to 2017. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [3] Share of construction in Gross Value Added; [4] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017.
[5] Controls are included for the following Industry segments: Agriculture, Manufacturing, Financial activities, Trade and Government.

Table 5.14: Instrument Validity Check[1] - Unemployment and Construction Share - 2004-2017[2] - North and South[3]

	(1)	(2)	(3)	(4)	(5)
North					
ConstrShare[4]	-0.525**	0.029	-0.005	-0.100	-0.122
	(0.188)	(0.178)	(0.173)	(0.190)	(0.191)
Observations	871	871	871	871	871
F-stat	49.063	4.551	1.519	3.393	1.115
South					
ConstrShare	-1.268***	-0.349	-0.376	-0.347	-0.388
	(0.311)	(0.288)	(0.293)	(0.319)	(0.314)
F-stat	67.947	9.372	8.565	7.948	7.481
ProvinceFE	Yes	Yes	Yes	Yes	Yes
PeriodFE[5]	No	Yes	No	Yes	No
MacroRegionPeriodFE	No	No	Yes	No	Yes
IndustryControls[6]	No	No	No	Yes	Yes

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Sources: Eurostat, Italian National Institute of Statistics. [1] This table reports OLS fixed effects panel results. The dependent variable is provincial unemployment, and the independent variable is the share of construction in the provinces' total industry gross value added; [2] Unemployment and industry data for the period from 2004 to 2017. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [3] Sample is split between North (including macro regions North-East, North-West and Center) and South (including macro regions South and Isles). [4] Share of construction in Gross Value Added. [5] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017. [6] Controls are included for the following Industry segments: Agriculture, Manufacturing, Financial activities, Trade and Government.

Table 5.15: Instrument Validity Check[1] - Unemployment and Construction Share - 2004-2017[2] - High and Low Pre-Crisis Construction Shares[3]

	(1)	(2)	(3)	(4)	(5)
High					
ConstrShare[4]	-1.052***	-0.099	-0.351	-0.175	-0.497*
	(0.204)	(0.220)	(0.215)	(0.280)	(0.247)
Observations	672	672	672	672	672
F-stat	24.942	2.976	1.535	5.056	2.236
Low					
ConstrShare	-0.974***	0.185	0.051	0.107	-0.061
	(0.270)	(0.246)	(0.225)	(0.224)	(0.215)
F-stat	42.496	2.841	2.332	2.107	2.012
ProvinceFE	Yes	Yes	Yes	Yes	Yes
PeriodFE[5]	No	Yes	No	Yes	No
MacroRegionPeriodFE	No	No	Yes	No	Yes
IndustryControls[6]	No	No	No	Yes	Yes

Sources: Eurostat, Italian National Institute of Statistics. [1] This table reports OLS fixed effects panel results. The dependent variable is provincial unemployment, and the independent variable is the share of construction in the provinces' total industry gross value added; [2] Unemployment and industry data for the period from 2004 to 2017. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ [3] Sample is split at the median pre-crisis construction share. [4] Share of construction in Gross Value Added. [5] Fixed effects are included for the periods 2004-2005, 2006-2007, 2008-2012 and 2013-2017. [6] Controls are included for the following Industry segments: Agriculture, Manufacturing, Financial activities, Trade and Government.

5.2.3 Second Stage of IV

As it was clear by the first stage and reduced form results, the instrument of construction share of industry is not a good fit for modelling unemployment in this scenario. Therefore, the results of the second stage are of the instrumental variable approach are reported here in the Appendix.

Four Periods, 2004-2018

The general specification is as follows:

$$y_{p,t} = \alpha + \beta \tilde{U}_{p,t} + \lambda_p + \psi_t + X'_{p,t}\gamma + \epsilon_{p,t} \tag{5.1}$$

In equation 5.1, $y_{p,t}$ is the share of valid votes for each of the parties (and in one case, turnout), and $\tilde{U}_{p,t}$ is the average unemployment rate of the period, instrumented by the provinces' construction share of industry in the same period. λ_p captures the fixed effect of provinces, whereas ψ_t captures the extra fixed effects of each panel.

The three panels with different fixed effects are performed for the full sample and results can be found in Table 5.16. However, as from the first stage of the 2SLS the only specification that shows a significant relationship between the construction share of industry and unemployment is the one controlling for provincial trends, this is the one reported here for the North/South (Table 5.17) and High/Low (Table 5.18) splits.

Results show a positive relationship between construction share instrumented unemployment and populist voting shares in every sample split but in the North — however, none of the results is statistically significant. From the populist parties, the only one that shows significant results in some of the specifications is the Lega. Across the country, a 1p.p. hike in unemployment is associated with a 1.3p.p. increase in Lega's voting shares (first column, top panel of Table 5.16); in the North, the party's region of origin, the effect goes up to 4.8 p.p. (first column, top panel of Table 5.17). However, we know from the first stage that construction share is not a good predictor of unemployment in the North. The M5S and the smaller populist parties, Italy of Value and Brothers of Italy, also lack statistically significant results. These results go in line with Algan et al. [2018], which finds coefficients ranging from 2p.p. to 3.6p.p. for populist voting.

Surprisingly, in the South, the only place the first stage shows a consistent relationship between unemployment and construction share, none of the results from the second stage yield significant (bottom panel of Table 5.17).

One of the most interesting results comes from turnout, which presents a positive relationship with construction share instrumented unemployment. Across the country, turnout responded to an increase of 1p.p. in unemployment with an increment of 0.6p.p (last column, top panel of Table 5.16); in the North, this effect was of 2.3p.p. (last column, top panel of Table 5.17), suggesting that in places more affected by unemployment more people took to the polls [5].

Focusing on the previously mainstream parties, they show consistently negative relationships to unemployment, and statistically significant in many specifications. The Democratic Party presents considerable drops in vote shares, ranging from -1.9p.p. across the country (sixth column of Table 5.16) to -3.7p.p. in the North (sixth column, top panel of Table 5.17). Go Italy presents similar results: a drop of -2p.p. across the country (fifth column of Table 5.16) and -3.8p.p. in the North (fifth column, top panel of Table 5.16). While Go Italy shows a significant relationship in places below the median construction share of industry (a drop of -2.3p.p. to a +1p.p. in unemployment, see Table 5.18) but not in those above the median. The Democratic Party shows significant negative relationships in provinces both of high and low pre-crisis construction shares.

Those results have to be taken with a grain of salt, since the first stage shows that construction share is not a great instrument for unemployment in the Italian provinces. However, in line with previous OLS results, it's possible to notice the positive relationship between unemployment and populist voting, and the negative relationship between economic insecurity and the drop in support for mainstream parties. It's also clear from the results that dynamics seem to change across the different macro-regions of the country, and that construction share cannot be used to instrument crisis-driven unemployment in Italy.

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[5]Results go in line with Abramowitz and Saunders [2008], who suggests that unrest in the political environment can energise voters.

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Table 5.16: Second Stage of IV - Provincial Unemployment and Voting - 2004-2018[12]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Province FEs							
Unemployment	1.280*	-4.901	-0.037	0.886	-2.029***	-1.961***	0.614*
	(0.549)	(10.150)	(0.220)	(0.651)	(0.587)	(0.448)	(0.260)
Adjusted R^2	0.412	-2.583	-0.190	0.905	0.645	0.651	0.751
F-stat	51.204	6.501	5.791	499.795	96.724	116.112	176.076
Period FEs[3]							
Unemployment	8.729	-4.901	0.830	4.658	-10.345	4.325	4.268
	(14.482)	(10.150)	(2.284)	(7.758)	(16.137)	(7.462)	(6.913)
Adjusted R^2	-14.442	-2.583	-0.808	-1.466	-26.071	-5.686	-19.702
F-stat	0.536	6.501	1.065	4.767	0.134	1.654	0.239
Region-Period FEs[3]							
Unemployment	0.438	3.227	1.952	5.617	-0.686	-3.567	-0.852
	(1.979)	(5.239)	(3.490)	(8.758)	(2.160)	(6.052)	(2.193)
Adjusted R^2	-0.619	-4.776	-11.758	-10.980	-0.481	-10.028	-2.506
F-stat	2.476	0.669	0.174	0.242	5.158	0.271	0.558
Observations	410	410	410	410	410	410	410

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.

[1] This table reports 2SLS panel fixed effects results. The dependent variable is the vote share for each party. The independent variable is the provincial unemployment for the period preciding the elections, instrumented by the provinces' construction share. Standard errors are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.

[3] These two panels also include province fixed effects.

Table 5.17: Second Stage of IV - Provincial Unemployment and Voting - 2004-2018 - Province FEs

	Populists			Populist	Mainstream		-
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
North[3]							
Unemployment	4.784*	-5.767	-0.228	-1.211	-3.789**	-3.678***	2.354*
	(1.905)	(3.174)	(0.337)	(1.990)	(1.205)	(1.043)	(0.937)
Observations	268	268	268	268	268	268	268
Adjusted R^2	0.215	0.266	0.202	0.845	0.746	0.666	0.437
F-stat	29.120	36.914	19.418	197.338	100.709	79.937	55.104
South[4]							
Unemployment	0.413	0.123	0.277	0.812	-0.217	0.489	-0.125
	(0.406)	(0.978)	(0.436)	(0.754)	(1.009)	(0.554)	(0.474)
Observations	146	146	146	146	146	146	146
Adjusted R^2	0.467	0.899	-0.202	0.951	0.575	0.793	0.672
F-stat	19.434	167.009	3.394	354.557	29.382	79.052	43.907

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.

[1] This table reports 2SLS panel fixed effects results. The dependent variable is the vote share for each party. The independent variable is the provincial unemployment for the period preciding the elections, instrumented by the provinces' construction share. Standard errors are reported in parentheses. Significance is reported as follows: $*$ $p < 0.05$, $**$ $p < 0.01$, $***$ $p < 0.001$

[2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.

[3] Northern region sample, which encompasses the following macro regions: North-East, North-West and Center.

[4] Southern region sample, which encompasses the following macro regions: South and Isles.

Table 5.18: Second Stage of IV - Provincial Unemployment and Voting - 2004-2018 - Province FEs

	Populists				Mainstream		-
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
High[3]							
Unemployment	0.784	-0.171	-0.037	0.576	-1.180	-1.777*	0.422
	(0.817)	(1.390)	(0.279)	(1.055)	(0.981)	(0.706)	(0.413)
Observations	206	206	206	206	206	206	206
Adjusted R^2	0.360	0.743	-0.246	0.897	0.569	0.632	0.734
F-stat	20.830	82.494	2.571	228.546	37.239	55.222	79.048
Low[4]							
Unemployment	3.563**	-2.667	0.268	1.164	-2.316**	-2.750**	1.174*
	(1.265)	(1.919)	(0.446)	(1.030)	(0.860)	(0.833)	(0.502)
Observations	208	208	208	208	208	208	208
Adjusted R^2	0.054	0.527	-0.236	0.916	0.742	0.580	0.676
F-stat	18.950	44.060	3.608	283.658	72.659	49.645	71.242

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.

[1] This table reports 2SLS panel fixed effects results. The dependent variable is the vote share for each party. The independent variable is the provincial unemployment for the period preciding the elections, instrumented by the provinces' construction share. Standard errors are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.

[3] Sample includes provinces with a pre-crisis construction share above the median, 0.0625.

[4] Sample includes provinces with a pre-crisis construction share below the median, 0.0625.

Two Periods, Pre and Post-crisis

General specifications are the following[6]:

$$\Delta y_{p,post-pre} = \alpha + \beta \Delta \tilde{U}_{p,post-pre} + \Delta X'_{p,post-pre} \gamma + \epsilon_p \qquad (5.2)$$

In equation 5.2, $\Delta y_{p,post-pre}$ is the difference in the share of valid votes for each of the parties (and in one case, turnout) before and after the crisis. $\Delta \tilde{U}_{p,post-pre}$ is the difference in the average unemployment rate, instrumented by the construction share. Results for this cross-section are reported in Table 5.19.

None of the results are significant. For the full sample and the South macro-region (the one significant in the first stage), coefficient for populist voting is positive but not statistically significant. All populist parties show positive coefficients and the mainstream ones, negatives. However, no statistical significance. As was expected from the first stage, this is not a great instrument.

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[6]Data over the two periods are averaged for the modelling. The $_{pre}$ time period ranges from 2004 to 2008, and the $_{post}$ from 2009 to 2018.

Table 5.19: Second Stage of IV - Provincial Unemployment and Voting - Pre and Post Crisis Periods[12]

| | Populists | | | | Mainstream | | - |
	League	Five Star	IdV/BofI	Populist	Go Italy	PD	Turnout
Full Sample							
ΔUnemployment	0.559	3.426	1.851	5.836	-1.332	-6.207	0.254
	(1.301)	(4.052)	(2.214)	(5.709)	(2.128)	(6.788)	(1.082)
Observations	103	103	103	103	103	103	103
Adjusted R^2	0.304	0.238	-1.460	-0.705	-0.213	-4.679	0.303
F-stat	7.678	6.964	0.423	3.082	2.350	1.433	4.890
South MacroRegion							
ΔUnemployment	-1.069	-0.436	3.751	2.246	-0.648	-1.640	-0.862
	(0.849)	(2.170)	(2.592)	(1.948)	(2.049)	(2.397)	(1.261)
Observations	23	23	23	23	23	23	23
Adjusted R^2	-0.326	0.097	-2.515	0.005	0.047	-0.273	-1.022
F-stat	4.973	8.429	0.759	2.160	7.487	0.603	1.670

Sources: Eurostat, Italian National Institute of Statistics, Italian Ministry of Interior.

[1] This table reports 2SLS cross-section results. The dependent variable is the difference between vote shares for each party in the pre and post crisis periods. The independent variable is the difference in average provincial unemployment for the pre and post crisis periods, instrumented by the pre-crisis construction share. Standard errors clustered by province are reported in parentheses. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] Vote shares are from the following Italian elections: 2006, 2008, 2013 and 2018. The label 'Populist' represents the sum of the following parties: League, Five Star, Italy of Value and Brothers of Italy (IdV/BoI). The Democratic Party is under the abbreviation 'PD'.