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Cohesion Policy and electoral outcomes

The case of Greece

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Abstract

This dissertation investigates how much Cohesion Policy is supported or not in Greece, based on the electoral outcomes for the national and European elections and a referendum that took place between the years 2014-2019. Even if our preliminary results lack statistical significance, we can have some first indications. Generally, the variables of payments and share of votes do not seem to be strongly related, even though there might seem that regions receiving less amount of funds support a financial assistance from Europe by voting for Nea Dimokratia, the non-Eurosceptic party, while those receiving more money, reject it by voting for SYRIZA, the Eurosceptic party. However, the reader should be informed that the latent hypothesis lacks statistical significance, and thus, it cannot be reliable. Overall, funds do not seem to have a substantial impact on voting outcomes, but again, this issue needs further research and discussion.

Keywords: European Union funds, Cohesion Policy, Greece, Electoral outcomes, Linear regression

1. Introduction

Cohesion Policy has been applied for years to many countries of the European Union, Greece being one of them. It is a policy consisting of several funding programs addressed mostly to the less developed regions of European Union, aiming for Convergence Objective, for European Territorial Cooperation objective for the regions that are more developed, as well as for Regional Competitiveness and Employment objective. According to (Dijkstra A. R.P., 2021), it is one of the two largest policies in budgetary terms with common agricultural policy for the programming period 2014-2020. The purpose of Cohesion Policy is to improve the quality of life and reduce disparities in rural and urban areas by qualifying people with necessary skills (especially technological), creating more job opportunities, supporting the industrial and agricultural development of a region and offer more sustainable conditions of living.

The core program of Cohesion Policy, European Structural and Investment Funds (ESIF), consists of Cohesion Fund (CF), European Regional Development Fund (ERDF), European Agricultural Fund for Rural Development (EAFRD), European Maritime and Fisheries Fund (EMFF) and European Social Fund (ESF).

There is a wide literature concerning Eurosceptic parties and Cohesion Policy funds (Borin, 2018, Bachtler, 2020), especially for countries where Eurosceptic parties have seen a rise lately (Bachtrogler, 2018) or as in the case of UK, voted to leave European Union (Rodriguez-Pose, 2018, Becker, 2017, Dijkstra and R.-P., 2021).

The issue of Euroscepticism might have a deeper cause beginning at the level at which a person coming from a country member of European Union feels as part of it, or whether he feels more national than European and even if he believes that this feeling will remain the same or will change in the future (Bachtler, 2020). What if he feels more national and then European, if not at all, and if more people share the same feeling? This is how Euroscepticism can rise. According to (Bachtler, 2020), in 2015 more than half of EU citizens felt both national and European which helps to support a European perception, but people's trust to European Union remains below the levels that existed before the crisis in 2010.

However, there exists an idea that funding methods like Cohesion Policy may have as final goal to change people's perception and make them "love" more Europe (Bachtrogler, 2018). On the other hand, studies of (Fidrmuc, 2019 and Becker, 2017) for Brexit do not find any connection between votes to remain in EU and Cohesion Policy. It is essential though to understand whether these policies are effective enough or how they should be implemented. Is more of that kind of policies enough or a different approach of intervention should be applied (Rodriguez-Pose, 2018)?

In the following part we are going to acquaint the reader with the political background of Greece during the last decade and explore how the electoral outcomes of the three last elections can be related to Cohesion Policy applied in the country. In section 3 we introduce the data and sources that are being used and in section 4 we perform the analysis of the data. Finally, in the last section we make some conclusions and remarks comparing our results to the existing literature and research in the field.

2. Political background and Cohesion policy in Greece

Political background in Greece

The financial crisis that started during 2010 has been very challenging for Greece since the country has been trying to emerge from it for more than a decade. The political landscape was unbalanced for years with the discussion of leaving the Eurozone coming up every now and then.

Since the beginning of the implementation of the measures proposed by “troika”, (the European Commission (EC), the European Central Bank (ECB) and the International Monetary Fund (IMF)) and the acceptance of bailout deals to lower the amount of Greek public debt, Greek people were divided to those supporting being a member of the Eurozone and to those opposing to any financial help from Europe, preferring to return to the currency that had been used before euro was introduced in 2001, the Greek drachma. As a result, during 2010-2019 numerous elections were held, a lot of parties were restructured, and new ones were proposed. Europe’s contribution to help Greece was controversial for a large part of population and extreme right-wing or left-wing parties started emerging, like for instance Chrysi Avyi, (the so-called Golden Dawn), an extreme right and thus Eurosceptic party which rose very unexpectedly, objecting to any kind of negotiation with Europe and supporting leaving the Eurozone.

Is it true thought that these extreme right or left parties saw a very sudden increase in their votes, and how should we define Euroscepticism in the first place? According to the word’s definition “Euroscepticism is a European political doctrine that advocates disengagement from the European Union (EU). Political parties that espouse a Eurosceptic viewpoint tend to be broadly populist and generally support tighter immigration controls in addition to the dismantling or streamlining of the EU bureaucratic structure.”¹ Furthermore, according to Vasilopoulou (2018), during a crisis: a) mainstream parties maintain their positive to EU position. b) parties partly strongly opposed to EU will defend their position, but in case of their participation in the government they are likely to become more positive. Crises are exogenous phenomena that might occur unexpectedly (Halikiopoulou et al., 2017). Thus, political parties might also change the attitude of a party towards EU policies and beliefs. (ex. Mainstream parties and parties that often form the government, may become more pro-EU). These assumptions, as we will see later, became true in the Greek case during the

¹ <https://www.britannica.com/topic/Euroscepticism>

referendum of 2015, where even though, Greek people voted for no more European financial assistance and bailouts, the left-wing Eurosceptic party SYRIZA, finally decided on an agreement with Europe for a new contribution.

In 2015, national elections were held twice, on 25th of January and on 20th of September, where SYRIZA (a left Eurosceptic party opposing to measures applied by the IMF) won both times. Between these two elections a referendum took place, on the 5th of July, whose result was basically ignored. The question of the referendum was *“Should the draft of the Agreement be accepted, which was submitted by the European Commission, the European Central Bank and the International Monetary Fund in the Eurogroup of 25.06.2015 and comprises of two parts, which constitute their unified proposal? The first document is entitled “Reforms for The Completion of The Current Program and Beyond” and the second “Preliminary Debt Sustainability Analysis”*. Although the outcome was “Not Accepted/No” by 61.31%, the government of SYRIZA did accept the measures proposed by the Agreement. As a result, several members of the party objected to this decision and resigned, leading the country to the second elections of that year.

Because of the long economic crisis and the measures implemented from troika, Greek people were tired and the feeling of mistrust to the government was very intense. Like in the case of the Brexit in UK and the votes for Eurosceptic parties, the main issue was not completely about Europe but according to the literature it was more “a reflection of the deep levels of uncertainty, insecurity and frustration that people felt about governance decisions, scarce resources and the future for themselves and their children” (Willett et al., 2019: 1, Rodríguez-Pose et al 2021).

In the meanwhile, there were also other countries where people questioned European contribution to the development and member countries like United Kingdom, where a referendum was held in June 2016 when 51.9% of people voting supported leaving European Union (Jan Fidrmuc et al, 2019).

Cohesion Policy in Europe

Like UK, most of EU countries, also Greece receives EU funds from Policies scheduled to be implemented on a regional level or based on specific subjects and case studies like immigration and young entrepreneurship (Capello, Perucca 2017). There is a wide literature analyzing the relationship of Eurosceptic parties and the effectiveness of these kind of Policies (Kemmerling et al 2006), (Rodríguez-Pose 2017), (Bachtrögler et al 2018), (Borin et al

2018), (Crescenzi et al 2020, Di Cataldo 2017, Fidrmuc et al 2017 in the case of UK), while (Becker et al 2017 for the case of France) focus on the population characteristics in the regions highly opposed to remain in Europe during the Brexit referendum. Dellmuth's (2011) findings do not coincide with previous findings that regional and structural funds are impartially allocated.

Greece has been receiving the main package of funds of Cohesion Policy, ESIF, and additionally, the European Agricultural Guarantee Fund (EAGGF), the Financial Instrument for Fisheries Guidance (FIFG) and the Youth Employment Initiative (YEI), while at the same time other national funding programs were implemented to support industrial development.

The Greek case has not yet been deeply explored as to in which extend Cohesion Policy has an effect or even a slight connection with electoral outcomes. It is an appealing subject considering the events that have taken place lately but needs further investigation to understand how much people support or even are aware of Cohesion Policy. Moreover, it is important to understand if there are benefits from such an intervention. Should a different approach of measures be made or enhance the existing? These are questions that are crucial and need a to be studied further in order to have a better performance of each region of the country.

We are trying to make an initial analysis for Greece studying the relationship of regional and structural funding programs of Cohesion Policy for the years 2000-2006, 2007-2013 and 2014-2020 with the electoral outcomes of the two biggest parties during the last 8 years, Nea Dimokratia a center-right, non-Euroscaptic and SYRIZA, a left Euroscaptic party. Given that people's trust to European Union has been doubted, we expect regions receiving higher proportions of funds from European programs of Cohesion Policy to vote for SYRIZA, especially if the funding programs do not seem to offer a big development for the regions. On the other hand, it should also be mentioned that the mistrust to government, or the local institutions are some reasons to either expect similar results if not a relationship at all. Besides, it is quite doubtful how many people are aware of the funding methods and if they are they are probably prejudiced against them.

3. Data

The electoral data are from the Greek Ministry of Foreign Affairs at regional level NUTS 3 as a sum of votes per electoral district. Since the rest of the variables that we are using are

available at regional level NUTS 2 aggregated and calculated the share of votes for each party at regional level NUTS 2, even though our number of observations will be 13, rather than 45. We focus on 2 National elections during 2015, the first being in January and the second in September, the referendum that took place in July of 2015, the National elections of 2019, and the European elections of 2014 and 2019. Unfortunately, we miss data for one of the three electoral districts of Ionian islands, Zakynthos, for the European elections of 2014. Given that two of the total number of parties are the ones earning most of the votes, we are going to use the results of Nea Dimokratia as a pro-Euro party and SYRIZA as a Eurosceptic party. We are also going to use the NUTS 3 level of electoral results for a final test. Since the regions at NUTS 2 level are 13 and we are only using data for 3 years (2014, 2015 and 2019), our sample is very small, which can be the main cause of lacking statistically significant results.

Moreover, the source of data concerning total population, GDP at current prices, percentage of employment at ages 15-64, percentage of unemployment of complete tertiary education at ages 15-64, percentage of complete tertiary education of ages 24-65 and percentage of land use for agriculture is Eurostat, while the numbers for Cohesion Policy payments of the funding programs of 2000-2006, 2007-2013, 2014-2020 are reported from the Commission's² website public data, categorized by programming period, per year of payments. We sum the payments by year and divide them by the number of paying years that we are using each time and the population for each year to use the funds per capita. We finally obtain the logarithms of GDP per capita and that of payments.

As already stated above, during 2015 two national elections took place with similar results, as the winning party was SYRIZA both times. In order to be more accurate, and since the first elections were held in January, in the very beginning of 2015, we consider the payments only until 2014 as pre-election funds in order to construct our panel model. Equivalently, for the elections of September 2015 we also consider the funds of 2015, adding this year's payments. For the elections of 2019 we consider as pre-election payments the years 2015-2018.

² <https://cohesiondata.ec.europa.eu/>

Table 1: Description of variables

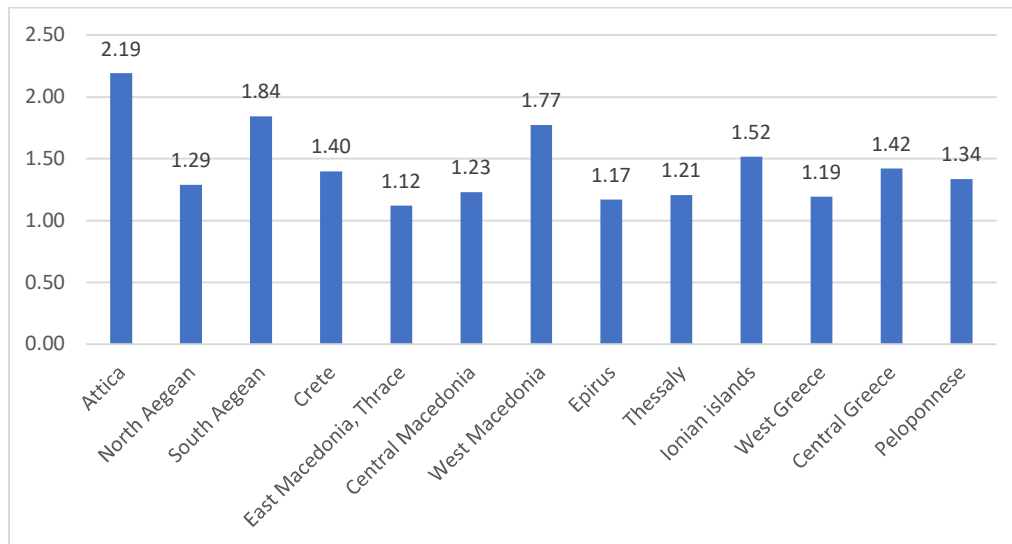
Variable	Description
Population	Regional population at NUTS 2 level in hundreds of thousands for the years 2014,2015 and 2019
Education ($edu_{i,t}$)	Percentage of people with complete tertiary education at the age group 24-65 of regional population at level NUTS 2 for the years 2014,2015 and 2019
Employment ($emp_{i,t}$)	Percentage of employment at the age group 15-64 of regional population at level NUTS 2 for the years 2014,2015 and 2019
Unemployment ($unemp_{i,t}$)	Percentage of active unemployed people with complete tertiary education at the age group 15-64 of regional population at level NUTS 2 for the years 2014,2015 and 2019
Use of land for agriculture ($land_{i,t}$)	Percentage of land use for agriculture for the years 2012, 2015 and 2018
Share of votes for Nea Dimokratia (ND) ($VND_{i,t}$)	Percentage of people who voted for Nea Dimokratia during the national elections of January 2015, September 2015 and July 2019 per electoral district
Share of votes for SYRIZA ($VSZRZA_{i,t}$)	Percentage of people who voted for SYRIZA during the national elections of January 2015, September 2015 and July 2019 per electoral district
Payments ($F_{i,t}$)	Payments of funds per capita in millions of euros (€) at current prices annualized for each programming period 2000-2006, 2007-2013 and 2014-2020
Log. of population	Log of population
Log of GDP per capita ($\log(GDP)_{i,t}$)	Log of GDP per capita at current prices in million euros (€) for the years 2014,2015 and 2019
Log of payments ($\log(F_{i,t})$)	Log of payments
Share of EU votes for Nea Dimokratia ($VEUND_{i,t}$)	Percentage of people who voted for Nea Dimokratia during the European elections of May 2014 and July 2019 per electoral district
Share of EU votes for SRIZA ($VEUSZRZA_{i,t}$)	Percentage of people who voted for SYRIZA during the European elections of May 2014 and July 2019 per electoral district
Share pf votes for outcome “NO” of referendum 2015 ($VREF_{i,2015}$)	Percentage of people who voted for “NO” during the referendum of July 2015 per electoral district

Table 2: Summary statistics

Variable	Obs.	Mean	Std. Dev	Min	Max
Population	39	8.354	9.702	1.99	38.64
Education	39	24.728	5.322	17.7	40.2
Employment	39	52.656	4.540	45.7	61.9
Unemployment	39	17.869	5.355	7.1	27
Use of land for agriculture	39	39.489	8.965	20.6	58.4
Share of votes for Nea Dimokratia	39	30.842	8.455	4.74	47.21
Share of votes for SYRIZA	39	32.105	7	10.19	44.55
Payments	39	233.632	181.273	19.99	617.06
Log of GDP per capita	39	1.944	1.108	0.293	3.973
Log of payments	39	11.558	8.107	1.137	32.115
Share of EU votes for Nea Dimokratia 2014	13	22.433	3.085	15.62	27.36
Share of EU votes for SRIZA 2014	13	25.622	4.539	15.81	32.29
Share of EU votes for Nea Dimokratia 2019	13	20.266	6.478	9.17	29.81
Share of EU votes for SRIZA 2019	13	15.091	4.997	7.04	24.01
Share pf votes for outcome "NO" of referendum 2015	13	62.366	3.660	57.34	69.86

Figure 1 below shows how GDP per capita is distributed at regional level NUTS 2. It is not surprising that Attica claims the largest share since it's where the capital of the country, Athens, is located with South Aegean and West Macedonia following next. The regions with the lowest income are East Macedonia and Thrace, Epirus and West Greece.

Figure 1: GDP per capita in current prices (in billions) by NUTS 2, 2014



According to the graph of GDP per capita for each region, (Figure 2), West Macedonia, North Aegean and West Greece are the regions that claim the highest decrease of 4.95 %, 2.62% and 2.25% respectively, from 2014 to 2019.

Figure 1: Percentage change of GDP by NUTS 2, 2014-2019

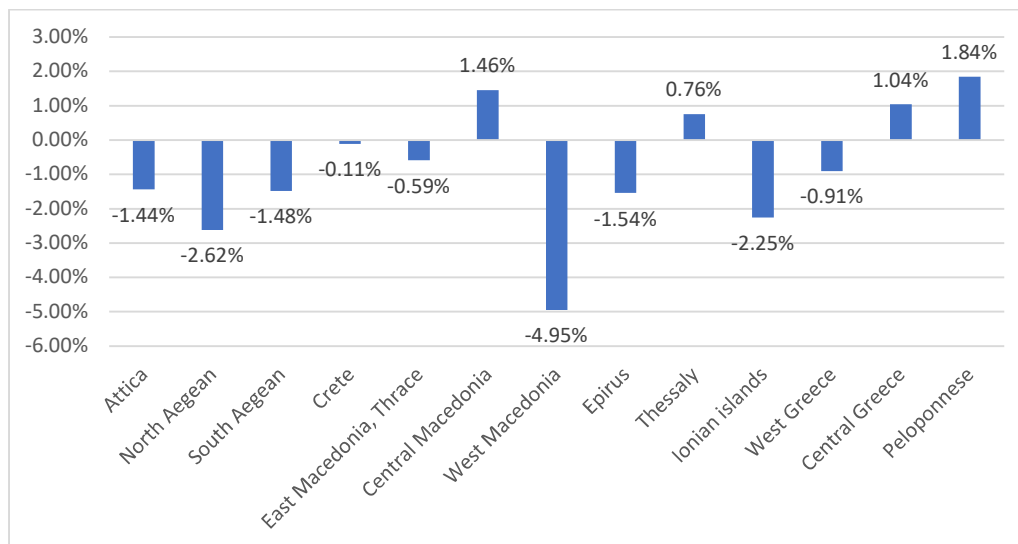


Figure 3: Complete tertiary education for 25-64 percentages by NUTS 2 2014

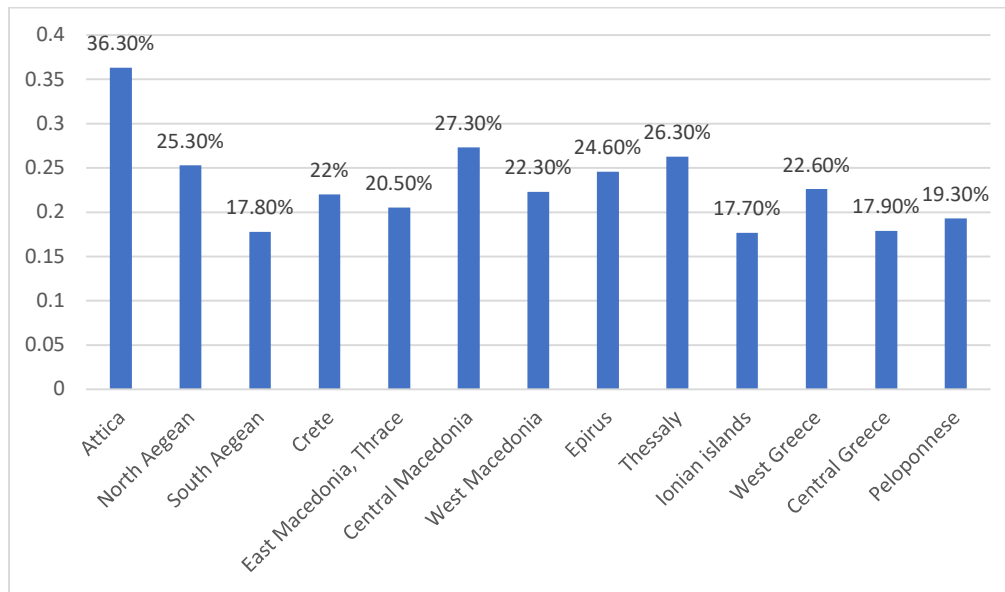
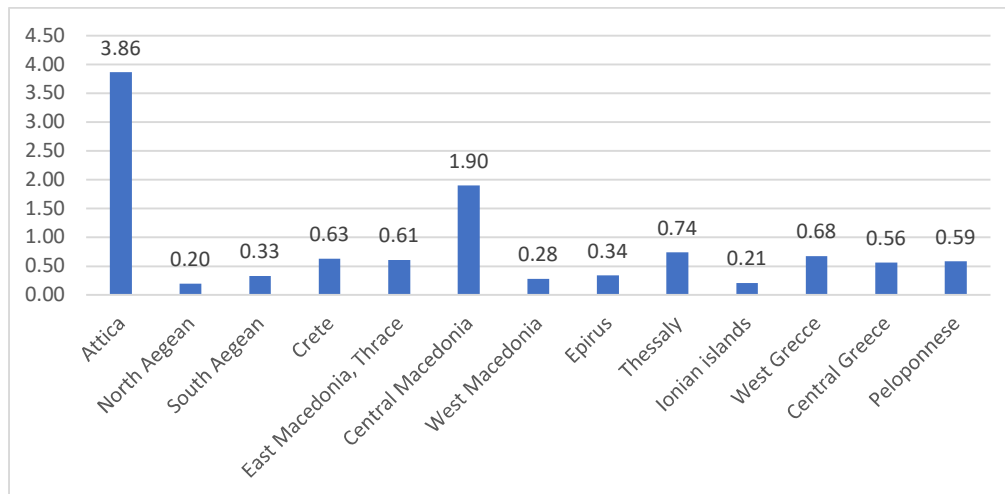


Figure 4: Total population (in millions) per region, NUTS 2, 2014



This last occurrence can be also explained by the regional population and other characteristics of each region. More specifically, both North Aegean and West Macedonia are two of the least populated regions, but they are not the regions with the lowest educational level. Figure 3 shows that the regions of islands, (South Aegean and the Ionian islands) as well as Central Greece are the regions with the lowest percentage of people that have completed tertiary education. Moreover, Central Greece, West Macedonia and Thessaly are the regions with the highest unemployment rates (Figure 5), while (apart from Attica), Epirus is by far the region with the lowest share of land use for agriculture because of its geomorphology and mountainous areas (Figure 6).

Figure 5: Percentage of unemployment for ages 15-64 with tertiary education, NUTS 2 2015

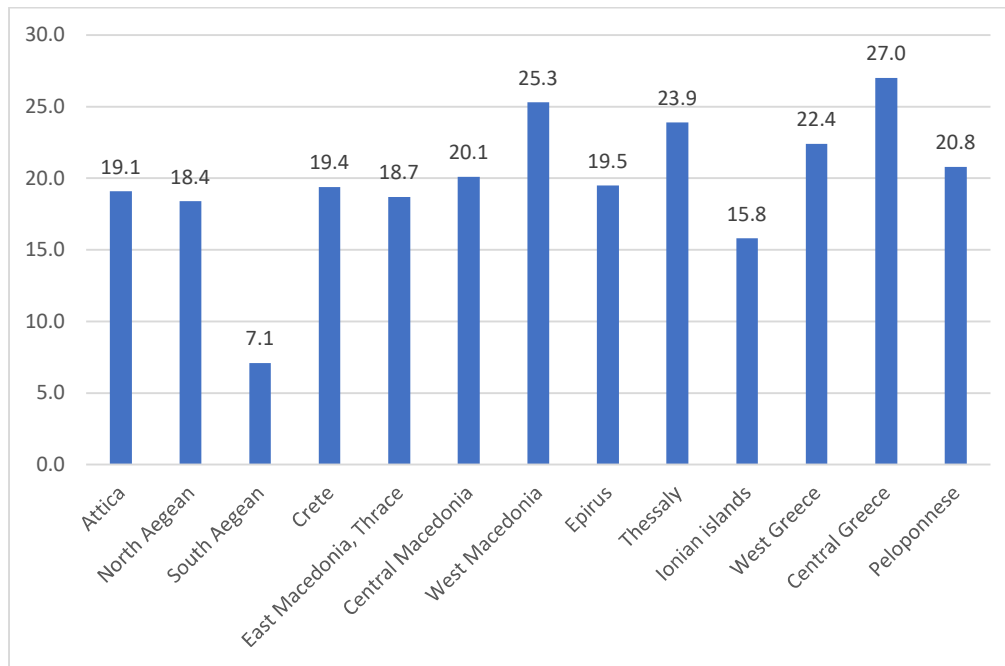
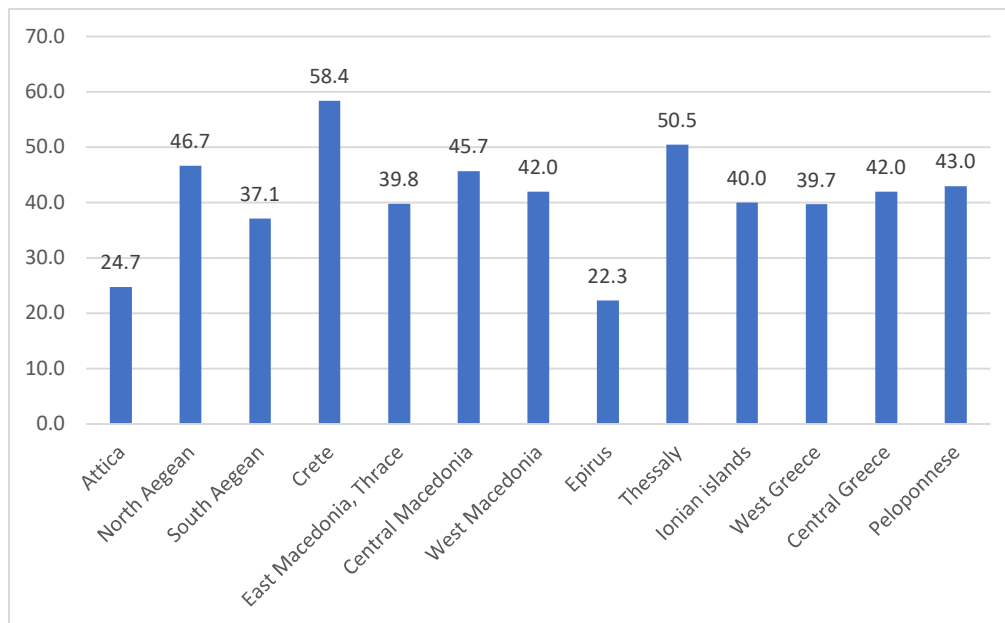


Figure 6: Percentage of land use for agriculture, NUTS 2 2015

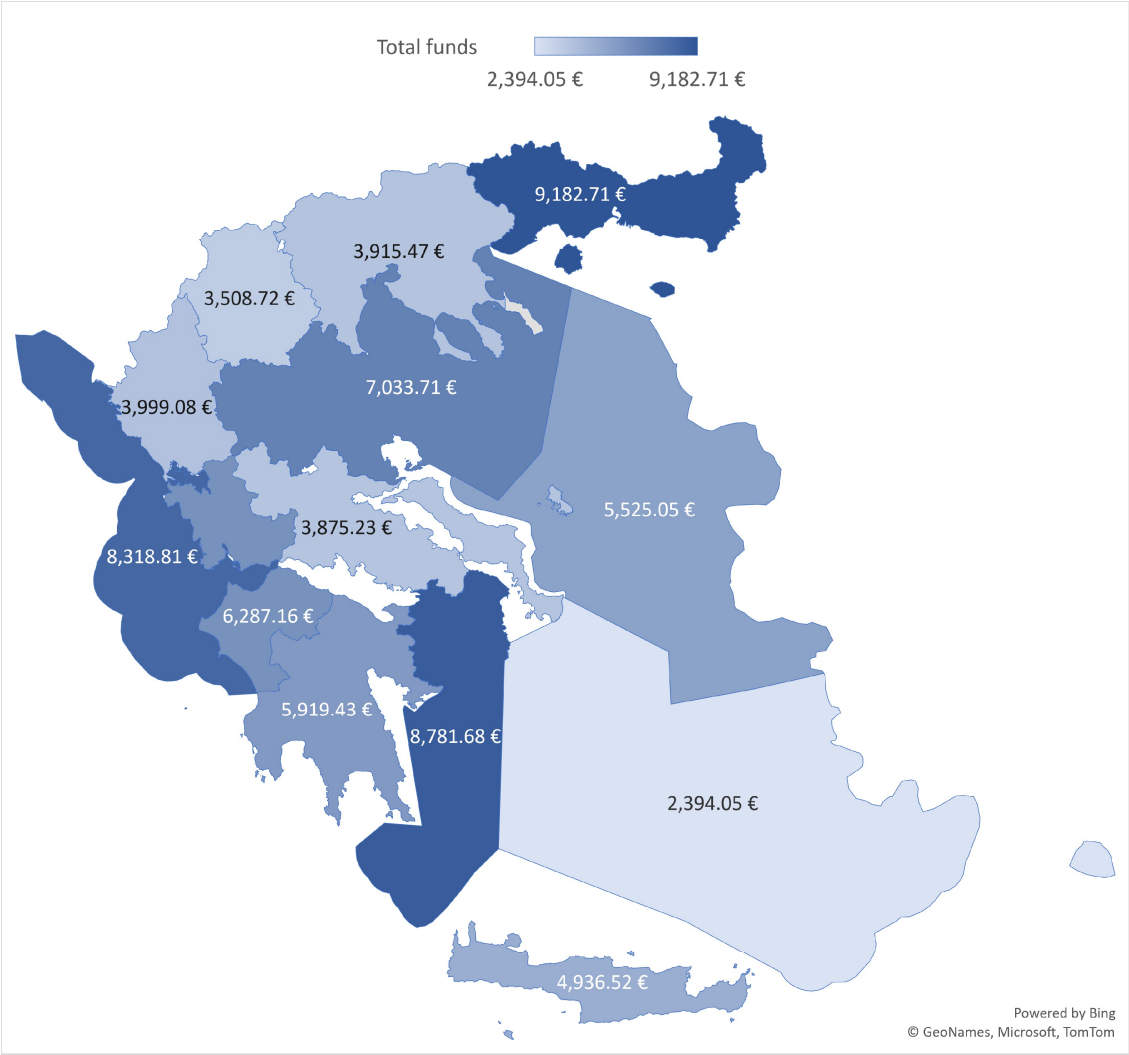


That said, we expect some of the above-mentioned areas (Epirus, West Macedonia, North and South Aegean, West and Central Greece and the Ionian islands) to be receiving more EU funds than some others.

The two maps of the Greek peripheries illustrated below, show how the total amount of payments of the funding programs are distributed between each region firstly as a total

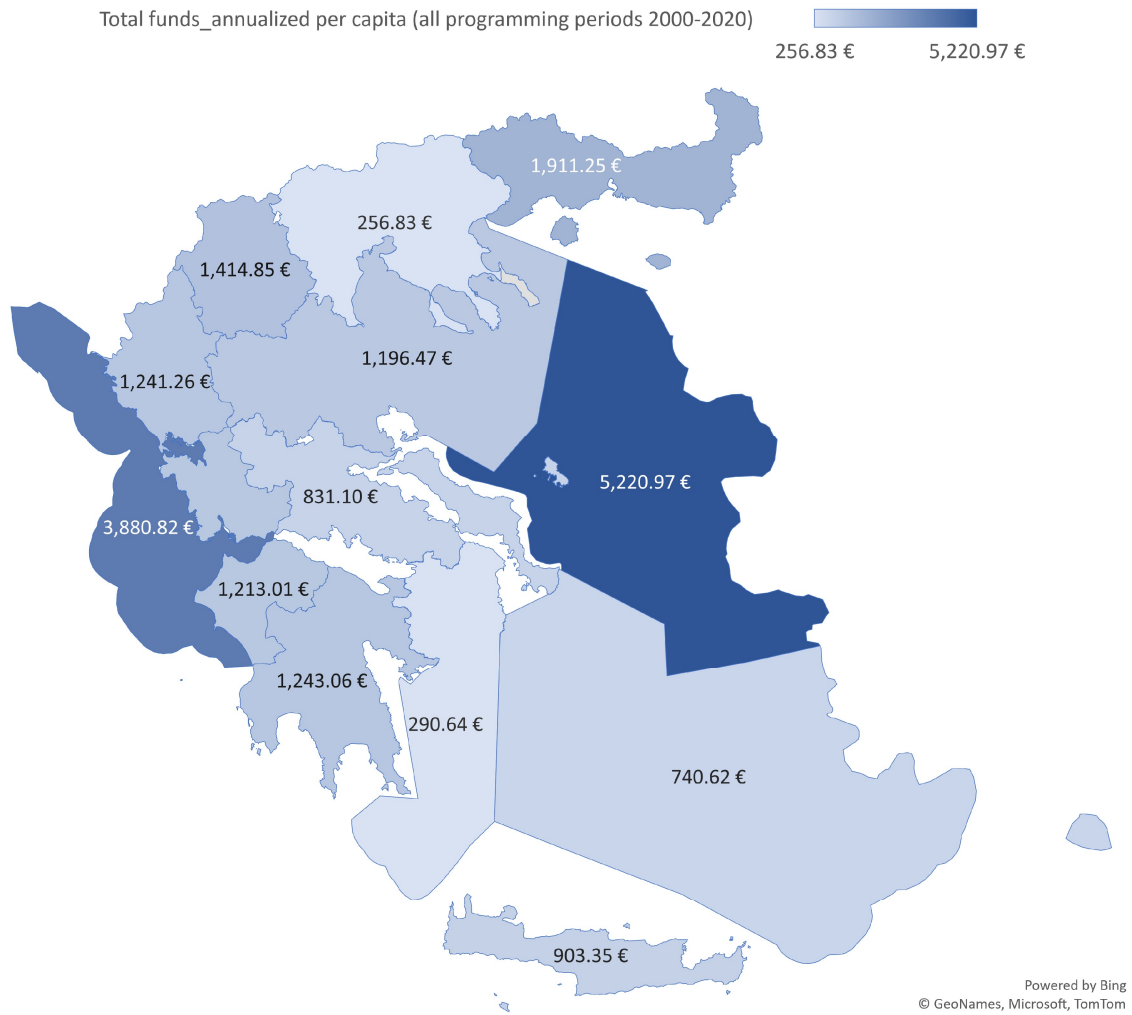
number of funds and then annualized and calculated per capita. In the first case concerning, East Macedonia and Thrace is the region receiving most of the money while Attica and the Ionian islands follow next. As we assumed two of the regions (East Macedonia and Thrace and the Ionian islands) are indeed among those receiving the highest proportions. We have to note here that the whole country of Greece during 2000-2006 was included in Objective 1 regions for the structural funds program, but during 2007-2013 Central Macedonia and Attica were in the phasing out transitions, Central Greece together with South Aegean were considered as a phasing in regions and the rest of the country was considered as convergence region. For the programming period of 2014-2020 the image is quite similar as Central and East Macedonia and Thrace, Thessaly, West Greece, Epirus and the Ionian islands are depicted as less developed regions while the rest apart from Attica (which appears to be the only more developed region) are in a transition state (Barca, 2009). In the second map we can see a more accurate image of how the funds are allocated annualized and per capita to each region. Thus, North Aegean and the Ionian islands are the main receivers followed by East Macedonia and Thrace, West Macedonia and then Peloponnese, Epirus and West Greece as we expected it to be.

Figure 7: Total amount of funds for the programming periods 2000-2020 allocated per region, NUTS 2



Note: Funds have been calculated in millions of euros (€) for all the programming periods 2000-2020 at regional level NUTS 2

Figure 8: Total funds per capita allocated per region, NUTS 2



Note: Payments have been calculated in millions of euros (€) per capita and have been annualized for all the programming periods 2000-2020 at regional level NUTS 2.

Table 1: Total funds per capita allocated per region, NUTS 2

Region, NUTS 2	Total amount of funds allocated in euros (€) for the programming periods 2000-2020 at regional level NUTS 2	Total amount of funds allocated in euros (€) per capita for the programming periods 2000-2020 at regional level NUTS 2 ¹	Total amount of funds allocated in euros (€) per capita for pre-electoral period of 01.2015 at regional level NUTS 2 ¹	Total amount of funds allocated in euros (€) per capita for the pre-electoral period of 09.2015 at regional level NUTS 2 ¹	Total amount of funds allocated in euros (€) per capita for the pre-electoral period of 07.2019 at regional level NUTS 2 ¹
Attica	8,781.68 €	290.64 €	148.39 €	114.88 €	18.82 €
North Aegean	5,525.05 €	5,220.97 €	1,527.97 €	3,101.37 €	1,063.08 €
South Aegean	2,394.05 €	740.62 €	461.59 €	224.96 €	72.48 €
Crete	4,936.52 €	903.35 €	487.91 €	302.39 €	118.07 €
East Macedonia, Thrace	9,182.71 €	1,911.25 €	1,014.54 €	802.33 €	68.65 €
Central Macedonia	3,915.47 €	256.83 €	133.36 €	108.32 €	11.34 €
West Macedonia	3,508.72 €	1,414.85 €	777.93 €	318.30 €	270.60 €
Epirus	3,999.08 €	1,241.26 €	767.55 €	330.12 €	119.41 €
Thessaly	7,033.71 €	1,196.47 €	621.30 €	480.73 €	65.23 €
Ionian islands	8,318.81 €	3,880.82 €	2,536.28 €	472.77 €	815.76 €
West Greece	6,287.16 €	1,213.01 €	612.93 €	529.89 €	30.87 €
Central Greece	3,875.23 €	831.10 €	463.92 €	326.61 €	35.95 €
Peloponnese	5,919.43 €	1,243.06 €	655.26 €	473.48 €	93.28 €

Note: Payments in columns (2), (3), (4), (5) have been calculated in millions of euros (€) per capita and have been annualized.

If we take a look at the distribution of the electoral outcomes, we will see that both times during the elections of 2015, SYRIZA is ahead of Nea Dimokratia except for Attica and Peloponnese. This is mainly due to the financial crisis and the fact that people did not support another memorandum from “Troika”. Thus, supporting a party which was opposite

to any negotiation related to the implementation of further economic measures that would stress even more Greek people, was the main option.

Figure 9: Share of votes for Nea Dimokratia and SYRIZA for electoral results of January 2015, NUTS 2

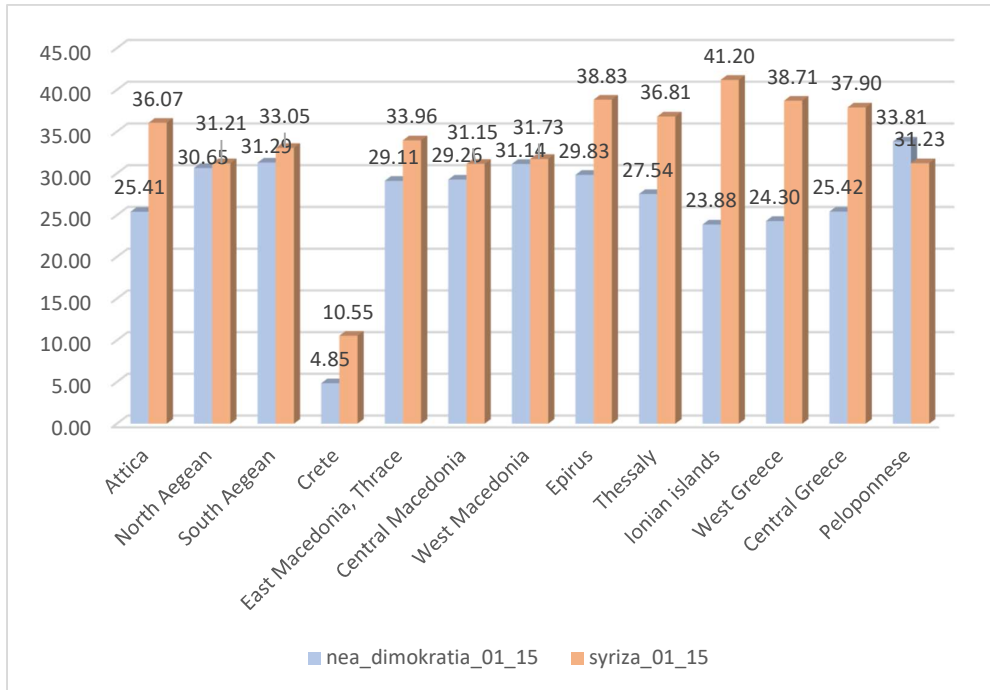


Figure 10: Map of share of votes for outcome “NO” for referendum results of July 2015, NUTS 2

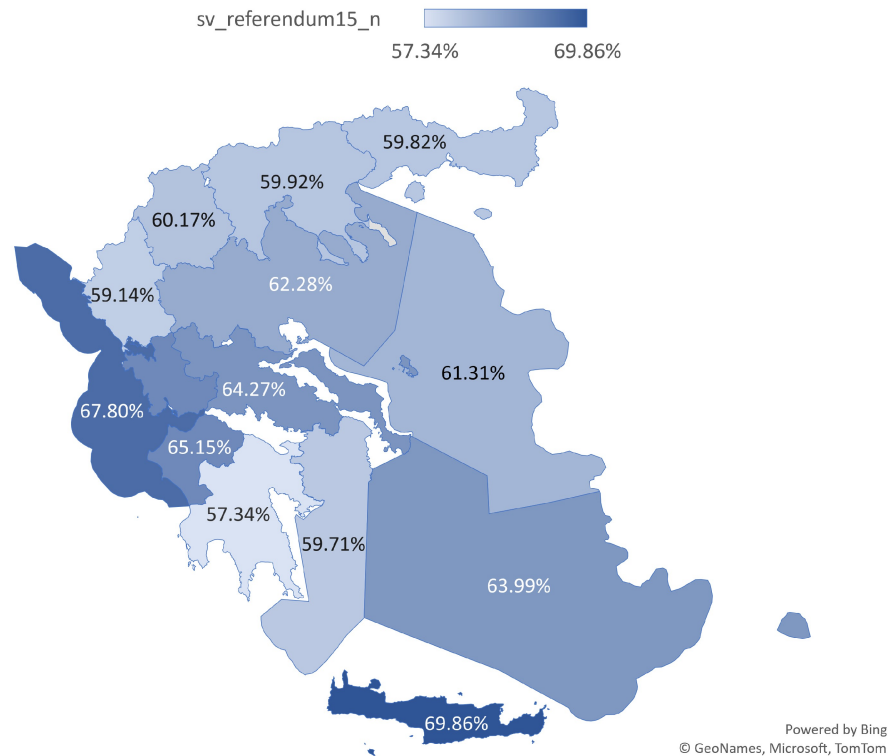


Table 2: Share of votes for outcome “NO” for referendum results of July 2015, NUTS 2

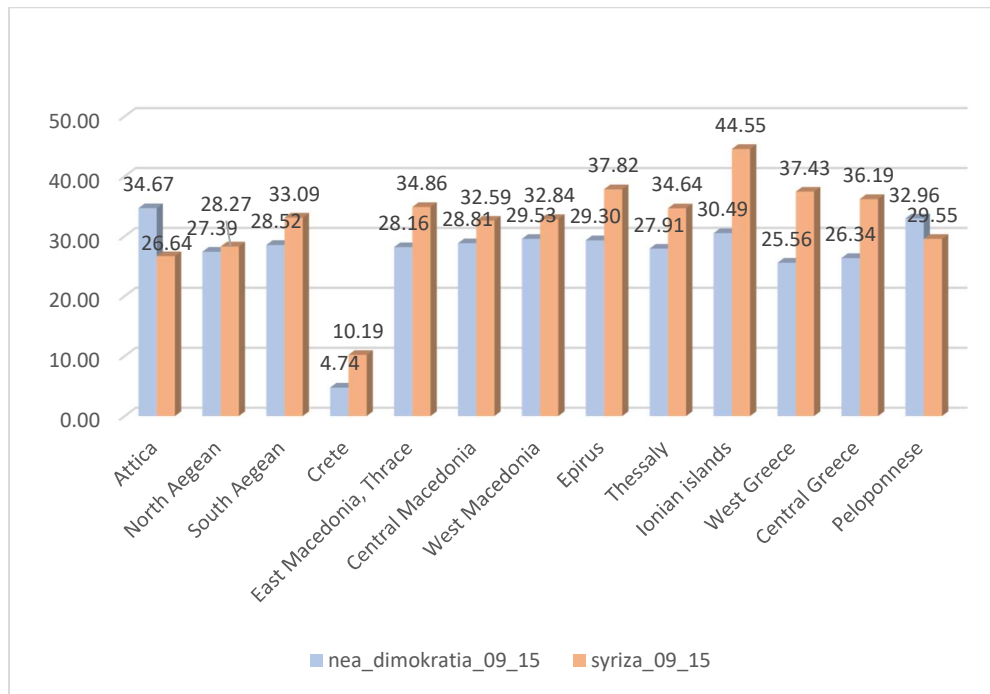
Region, NUTS 2	Percentage of “NO” referendum votes 2015,
Attica	59.71%
North Aegean	61.31%
South Aegean	63.99%
Crete	69.86%
East Macedonia, Thrace	59.82%
Central Macedonia	59.92%
West Macedonia	60.17%
Epirus	59.14%
Thessaly	62.28%
Ionian islands	67.80%
West Greece	65.15%
Central Greece	64.27%
Peloponnese	57.34%

Regarding the referendum results in Figure 10, all regions are rejecting financial assistance from EU concerning the Greek financial crisis, but Crete, the Ionian islands and West Greece are the regions claiming the highest percentages of people that voted for “NO/ Do not accept”. For the case of Crete this can be partly justified by the fact that it is a region where people are mainly voting for left parties throughout the years, which should also justify the rest of the electoral outcomes as well.

After the referendum took place in July 2015, and the agreement for a financial assistance from the European Financial Stability Fund (EFSF) and the European Stability Mechanism (ESM), the second national elections of the year were held in September 2015, with lower support levels that can be interpreted in the share of votes for SYRIZA party.

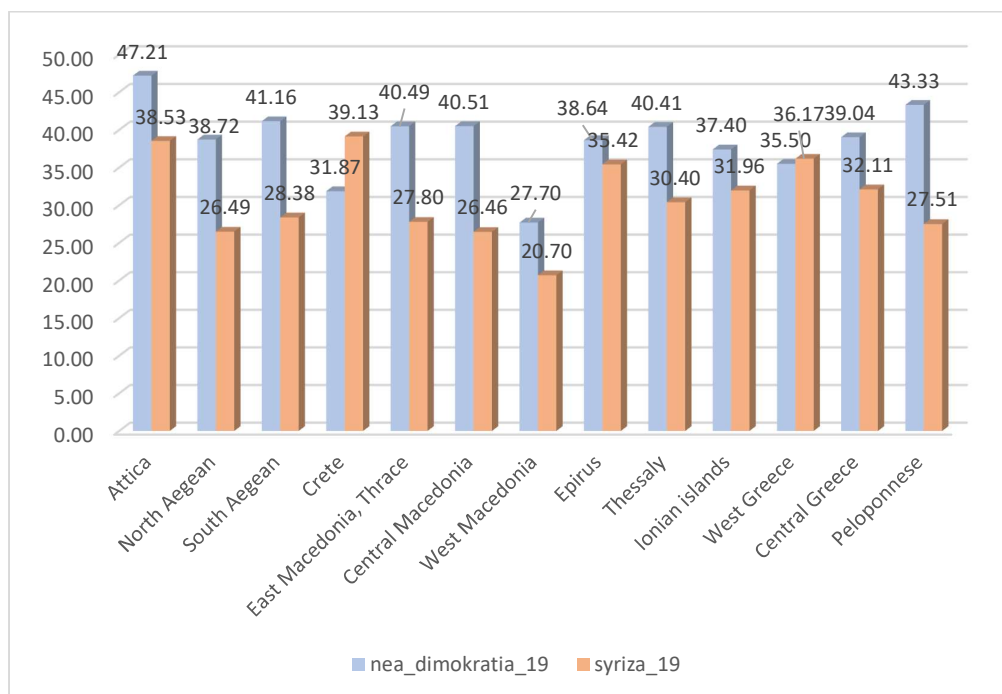
Hence, it is hard to assume a direct connection between these electoral outcomes and the funds aiming at regional development, because of the mistrust to the Greek government and the European authorities. This result is reflected from the fact that there is a high share of votes for SYRIZA in East Macedonia and Thrace, in West Greece and in Thessaly, two out of three peripheries that received the most funds until 2015, the year that Nea Dimokratia (the former leading party) lost twice the elections, a result either admitting the indifference of people to the funds of Cohesion Policy, or their unwillingness to receive any assistance from EU.

Figure 11: Share of votes for Nea Dimokratia and SYRIZA for electoral results of September 2015, NUTS 2



Comparing the electoral outcomes of 2019 with those of 2015, Nea Dimokratia is the one dominating in all peripheries except for Crete where SYRIZA is ahead with a share of 39.13% and for West Greece where the shares of the two parties are very close. The data on the funding distribution for the programming period of 2014-2020 do not seem to be so much related with the votes for the 2019 elections since both Crete and West Greece are not among the regions that received a large share of funding but not a low one either (see Appendix).

Figure 12: Share of votes for Nea Dimokratia and SYRIZA for electoral results of July 2019, NUTS 2



Summarizing all the previous assumptions and list of figures, we do not anticipate a very strong relationship for Cohesion Policy funding and national electoral results for Greece, especially for 2019. As we mentioned earlier, such a belief is quite reasonable, given that one of the parties is supposed to be Eurosceptic while the other is Euro friendly, in a period where a political combat is going on and the country's membership in EU is at stake. The situation is a lot similar to Brexit although UK was not financially dependent on EU.

A big proportion of this rejection to EU assisting policy can be happening because a large part of the population might not even know how much European institutions contribute to the development in a region of a member country. People are possibly unaware of funding programs, the way they work, how they are implemented and even what exactly they offer. It has been found that around half of European population have heard about ERDF or Cohesion Fund (in 2013 and 2015) and only a third of citizens were had been informed of project funded by EU in their region or city (Bachtler, 2020). Peoples' perception of EU involving in the economic activity and development of an area is commonly negative, since it is connected to being dependent from an outsider, especially when all the measures for a financial and fiscal stability are taking place subject to the financial crisis.

Socioeconomic factors though, are the main reasons for people tending to ignore or be prejudiced against Policies that could enhance a region's productivity and competitiveness,

not to mention the possible incapacity of institutions to control the accuracy of the implementation of the policies and a right distribution of the funds. For instance, less educated or unemployed people are supposed to be less supportive of EU propositions, as they might be not satisfied with their lives (Becker, 2017), and this partly explains the case of West Greece and Ionian islands, that as mentioned before, claim a large unemployment rate and a low educational level respectively. In other words, peoples' opinion on EU funding depends on the receptivity that this policy has in this area, "the subjective and objective elements explaining the efficiency of an institutional context in handling EU policies", which is the level of Euroscepticism and the quality of local institutions (Capello, 2018). As the efficiency of local institutions is very important, people are not able to perceive the contribution of EU because of the difficulties that the institutions are facing. On the other hand, some studies claim that regions with Eurosceptic local governments benefit more from funding in order to become more Euro friendly (Kemmerling and Bodestein 2006), while sometimes this is not possible since local governments tend to promote their responsibility and actions to the public eye (Chalmers 2013). As a result, it is not only a matter of people ignoring EU contribution, but also how institutions and local authorities present the effectiveness of Cohesion Policy.

4. Methodology

We will conduct an empirical analysis by focusing on the relation of funds with GDP per capita, the geographical and population characteristics data. Then we will continue with the share of votes for each electoral period and party.

Our model for the first part of the analysis will be:

$$\log(F)_{i,t} = \beta_0 + \beta_1 * \log(GDP)_{i,t} + \beta_2 * \text{emp}_{i,t} + \beta_3 * \text{edu}_{i,t} + \beta_4 * \text{unemp}_{i,t} + \beta_5 * \text{land}_{i,t} + \varepsilon_{i,t}$$

where i represents each NUTS 2 (or NUTS 3) region and t the relevant year.

The model for testing the share of votes for each election and their relationship with the funds, the logarithm of GDP per capita, the rate of education, the employment or unemployment rate and the proportion of land used for agriculture will be:

$$VP_{i,t} = \beta_0 + \beta_1 * \log(F)_{i,t} + \beta_2 * \log(GDP)_{i,t} + \beta_3 * \text{emp}_{i,t} + \beta_4 * \text{edu}_{i,t} + \beta_6 * \text{land}_{i,t} + \varepsilon_{i,t}$$

$$VP_{i,t} = \beta_0 + \beta_1 * \log(F)_{i,t} + \beta_2 * \log(GDP)_{i,t} + \beta_3 * \text{edu}_{i,t} + \beta_4 * \text{unemp}_{i,t} + \beta_5 * \text{land}_{i,t} + \varepsilon_{i,t}$$

Where $VP_{i,t}$ stands for either $VND_{i,t}$ (the share of votes for Nea Dimokratia³), $VSYRIZA_{i,t}$ the share of votes for SYRIZA for the national elections, $VEUND_{i,t}$ and $VEUSYRIZA_{i,t}$ for the European elections respectively, for each electoral outcome and region and $VREF_{i,t}$ the share of votes for the outcome “NO” of the referendum on July 2015 at level NUTS 2.

It should be noted here that most of the results of the analysis do not have high significance levels, which might mainly happen because of the small sample size that we are analyzing.

We start our analysis by performing an OLS test for the variable of payments (Table 5), having as independent variables the logarithm of GDP per capita, the percentages of employment, education, unemployment and the use of land for agriculture. From our results we have that the variables have a positive coefficient with statistically significant results above 5% level for the logarithm of GDP per capita, the rate of education and the percentage of land use for agriculture. It might seem from these results that the richer areas receive more funds, but as we already noticed in the previous maps with the distribution of the funds per region, Greece was firstly eligible for 2000-2006 as an Objective 1 region and during the following period of 2007-2013 Central and West Macedonia and Attica were phasing-out regions, while Central Greece and South Aegean were phasing-in regions but the whole country was not included in the Objective 2.

³ where ND stands for Nea Dimokratia.

Table 3: Linear regression: Cohesion Policy payments for the programming periods 2000-2006, 2007-2013 and 2014-2020, NUTS 2

Dependent variable: pre-election payments (log€)	(1)	(2)	(3)	(4)
GDP per capita (log €)	0.728*** (0.047)	0.740*** (0.046)	0.738*** (0.047)	0.740*** (0.049)
Employment rate			0.004 (0.011)	
Education rate	0.015** (0.006)	0.020*** (0.007)	0.021*** (0.007)	0.020*** (0.007)
Unemployment rate				0.0001 (0.008)
Land for agriculture (%)		0.008** (0.003)	0.007** (0.003)	0.008** (0.003)
Constant	-0.472** (0.217)	-0.943*** (0.315)	-1.187** (0.574)	-0.946** (0.412)
Year dummy	✓	✓	✓	✓
Obs.	39	39	39	39
F-test	91.07	77.48	67.22	62.59
R-squared	0.937	0.943	0.943	0.943
Root MSE	0.215	0.207	0.209	0.210

Notes: 1) Estimated by OLS with heteroskedasticity-robust standard errors. Significance levels: (***) $p < 0.01$, (**) $p < 0.05$ and (*) $p < 0.1$. 2) Payments have been calculated in millions of euros (€) per capita and have been annualized.

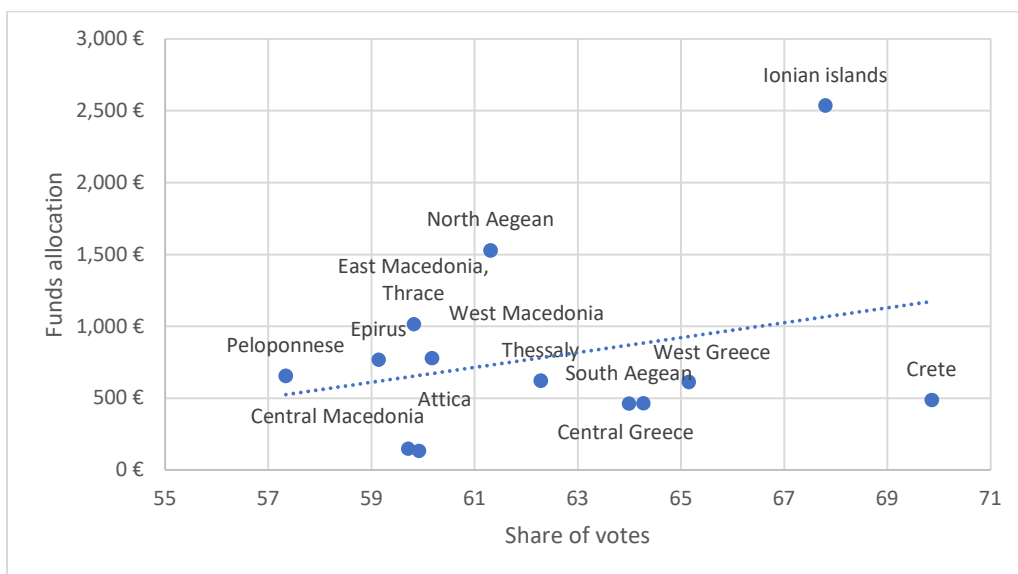
Going on by testing for the share of “NO” votes of the referendum (Table 2), we will see that the variable of payments has positive coefficient when we control only for it (which justifies the positive trendline in the following figure (Figure 13)), but a negative coefficient when we add the rest of the variables of GDP per capita, education, unemployment and land use for agriculture. However, none of our results has statistical significance thus, we cannot trust the following results.

Table 4: Linear regression: Referendum share of votes for outcome “NO”, NUTS 2

Dependent variable: share of votes for the outcome “NO”	(1)	(2)	(3)	(4)
Payments (log €)	0.574 (1.11)	-2.923 (2.235)	-4.580 (2.725)	-4.523 (4.208)
GDP per capita (log €)		2.603 (2.060)	3.652 (2.393)	3.586 (4.107)
Education rate				0.051 (0.356)
Unemployment rate				-0.131 (0.204)
Land for agriculture (%)			0.204* (0.097)	0.226 (0.136)
Constant	61.679*** (1.708)	60.805*** (1.882)	52.393*** (4.061)	52.944** (15.808)
Obs.	13	13	13	13
F-test	0.27	0.86	1.74	1.55
R-squared	0.016	0.088	0.356	0.385
Root MSE	3.793	3.828	3.392	3.756

Notes: 1) Estimated by OLS with heteroskedasticity-robust standard errors. Significance levels: (***) $p < 0.01$ (**) $p < 0.05$ and (*) $p < 0.1$. 2) Payments for 2015 have been excluded as we are interested in the referendum of July 2015. 3) Payments have been calculated in millions of euros (€) per capita and have been annualized.

Figure 13: Relationship between share of votes for the outcome “NO” of the referendum and EU funds for the programming periods 2000-2006 and 2007-2013, NUTS 2



Note: 1) Payments for 2015 have been excluded as we are interested in the referendum of July 2015. 2) Payments have been calculated in millions of euros (€) per capita and have been annualized.

As we will see from the tests performed for EU and national elections, the shares of votes for these elections do not seem to be related with votes for Eurosceptic parties, especially since our sample is very small and there seems to be the problem of endogeneity that we cannot solve.

We continue by performing a linear regression test for the EU electoral results of Nea Dimokratia and SYRIZA in 2014 (Table 3), where we have a statistically significant and negative coefficient for the payments in the case of Nea Dimokratia during 2014 when we control for the payments and GDP per capita but also when we add the variable of unemployment. The coefficient for payments is also negative for the share of votes for SYRIZA for the electoral results of July 2019. However, for 2014 the relationship of payments and share of votes for SYRIZA is positive and only unemployment has a statistically significant result of 5%. For 2019 both Nea Dimokratia and SYRIZA claim a positive relationship with the variable of payments, although the high standard errors cannot let us rely on these outcomes. Hence, we can assume of having an indication of the regions earning less funds to be voting for a non-Eurosceptic party, but we cannot trust it at this stage.

Table 5: Linear regression: Share of votes for Nea Dimokratia and SYRIZA for European elections of 2014 and 2019, NUTS 2

Dep. variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
share of votes per party	ND 2014	SYRIZA 2014	ND 2019	SYRIZA 2019	ND 2014	SYRIZA 2014	ND 2019	SYRIZA 2019
Payments (log €)	-8.167** (3.286)	4.445 (9.120)	4.015 (9.336)	-0.868 (8.484)	-8.417** (3.547)	4.410 (10.233)	7.763 (10.681)	1.802 (8.830)
GDP per capita (log €)	6.434** (2.154)	-2.842 (6.722)	-3.586 (7.136)	0.245 (6.408)	6.745** (2.426)	-2.799 (7.918)	-5.972 (8.406)	-1.429 (6.507)
Education rate							0.005 (0.469)	0.014 (0.260)
Unemployment rate					0.082 (0.172)	0.011** (0.322)		
Land for agriculture (%)							-0.516** (0.199)	-0.383 (0.221)
Constant	20.647*** (1.370)	25.310*** (3.008)	23.394*** (5.356)	15.445*** (4.416)	18.693*** (4.722)	25.038** (9.880)	42.846 (24.467)	29.507* (15.100)
Obs.	13	13	13	13	13	13	13	13
F-test	8.10	0.18	0.19	0.09	4.35	0.13	9.10	1.76
R-squared	0.159	0.032	0.042	0.007	0.169	0.032	0.520	0.455
Root MSE	3.098	4.892	6.943	5.454	3.246	5.156	5.497	4.517

Notes: Estimated by OLS with heteroskedasticity-robust standard errors. Significance levels: (***) $p < 0.01$ (**) $p < 0.05$ and (*) $p < 0.1$. 2) Payments have been calculated in millions of euros (€) per capita and have been annualized.

When we test for the share of votes of the national outcomes (Table 8) by GDP per capita and education the coefficient of payments is negative for both parties. By adding the variable of unemployment and agricultural land use, the relationship becomes positive for both parties, but no results are statistically significant except for land use for Nea Dimokratia that has a negative coefficient at level 5% of statistical significance. When we only control for the variable of payments, there is a negative correlation for the non-Eurosceptic party and a positive for the Eurosceptic one, but again, no result is statistically significant.

Table 6: Linear regression: Share of votes for national elections January 2015, September 2015 and July 2019, NUTS 2

Dependent variable: share of votes	(1) ND	(2) SYRIZA	(3) ND	(4) SYRIZA	(5) ND	(6) SYRIZA
Payments (log €)	-0.078 (0.896)	0.528 (1.237)	-1.095 (2.550)	-1.456 (4.463)	4.097 (4.100)	3.960 (5.063)
GDP per capita (log €)			1.252 (2.337)	1.544 (3.606)	-3.218 (3.349)	-3.003 (4.053)
Complete tertiary education rate			0.262 (0.194)	0.031 (0.223)	-0.078 (0.220)	-0.308 (0.221)
Unemployment rate					-0.113 (0.227)	0.004 (0.228)
Land for agriculture (%)					-0.395** (0.189)	-0.419 (0.214)
Constant	26.756*** (2.655)	32.566*** (2.915)	19.598*** (6.863)	31.437*** (7.626)	47.970 12.353	58.411*** (12.051)
Year dummy	✓	✓	✓	✓	✓	✓
Obs.	39	39	39	39	39	39

F-test	13.54	0.40	10.13	0.28	8.15	0.94
R-squared	0.434	0.024	0.451	0.027	0.589	0.242
Root MSE	6.625	7.206	6.721	7.408	6	6.747

Notes: 1) Estimated by OLS with heteroskedasticity-robust standard errors. Significance levels: (***) $p < 0.01$ (**) $p < 0.05$ and (*) $p < 0.1$. 2) Payments have been calculated in millions of euros (€) per capita and have been annualized.

A fixed effects test gives us a negative and statistically significant relationship at level 1% for Nea Dimokratia that remained negative when we control also for GDP per capita, education, unemployment with a significance of 1% and agricultural use of land with 10% level of statistical significance. The coefficient of payments is positive for the share of votes of SYRIZA (as presented in figure 14) and GDP per capita has a negative coefficient everywhere as. Less developed regions receiving high amount of funds seem to be voting for SYRIZA, but these results need further study since they are not sufficient to claim the tendency to vote for SYRIZA in the national elections for the more developed regions receiving EU funds. We can have a hint, though, that regions not receiving a high amount of funds vote for the non-Eurosceptic party.

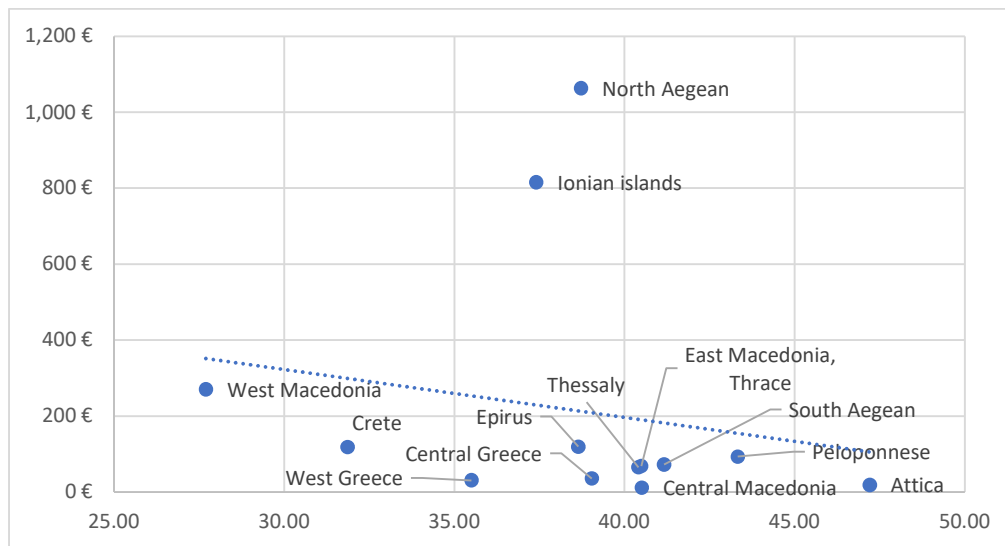
Table 7: Fixed Effects: Share of votes for national elections for SYRIZA and Nea Dimokratia, NUTS 2

Dep. Variable:	(1)	(2)	(3)	(4)	(5)	(6)
Share of votes per party	Nea Dimokratia	SYRIZA	Nea Dimokratia	SYRIZA	Nea Dimokratia	SYRIZA
Payments (log €)	-21.258*** (4.908)	3.747 (4.937)	-5.024 (4.501)	6.528 (6.717)	-4.458 (4.974)	2.709 (7.110)
GDP per capita (log €)			-6.633 (12.840)	-20.221 (19.161)	-7.188 (13.246)	-16.470 (18.937)
Education rate					0.152 (0.513)	-1.032 (0.733)
Unemployment rate			-0.916*** (0.269)	-0.719* (0.401)	-0.881*** (0.299)	-0.960** (0.428)
Land for agriculture (%)			-0.587* (0.297)	0.695 (0.444)	-0.572* (0.308)	0.591 (0.441)

Constant	55.415*** (5.754)	27.773*** (5.789)	89.125*** (25.043)	49.267 (37.373)	84.525** (29.874)	80.317* (42.707)
Obs.	39	39	39	39	39	39
F-test	18.76	0.58	19.49	1.14	14.96	1.35
R-squared	0.428	0.022	0.779	0.171	0.780	0.242

Notes: 1) Estimated by OLS with heteroskedasticity-robust standard errors. Significance levels: (***) $p < 0.01$ (**) $p < 0.05$ and (*) $p < 0.1$. 2) Payments have been calculated in millions of euros (€) per capita and have been annualized.

Figure 14: Nea Dimokratia share of votes and funds relationship, NUTS 2



Notes: 1) Payments for 2015 have been excluded as we are interested in the electoral results of January 2015. 2) Payments have been calculated in millions of euros (€) per capita and have been annualized.

Furthermore, we are willing to assess what happens when we use the data that we have available for the share of votes at NUTS 3 regional level. As the values that we have available for the payments are at NUTS 2 regional level and we miss the GDP for 2019 at NUTS 3, we try to perform the same analysis as before by using only the variable of the payments. We manage to do this by substituting for every subregion the value of the payment of NUTS 3 belonging to a specific NUTS 2 region by the same one.

Given that in the periphery of Attica the electoral districts were divided to 8 in 2018 from 5 that they initially were, we are not going to refer to Attica in this analysis.

We carry out a linear regression and according to the results we obtain there is a negative relationship of payments and share of votes for Nea Dimokratia. On the other hand, SYRIZA

also seems to have a negative correlation with the variable of payments except for the elections of January in 2015. However, no results are statistically significant.

Table 10: Linear regression: Relationship of payments and share of votes for Nea Dimokratia and SYRIZA for January 2015, September 2015 and July 2019, NUTS 3

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ND	SYRIZA	ND	SYRIZA	ND	SYRIZA	ND	SYRIZA
	01/2015	0/12015	09/2015	09/2015	2019	2019		
Payments (log €)	-0.705	0.053	-0.233	-0.338	-0.236	-1.031	-0.417	-0.241
	(0.464)	(0.592)	(0.445)	(0.522)	(0.479)	(0.674)	(0.297)	(0.362)
Constant	0.382***	0.393***	0.330***	0.395***	0.299***	0.409***	0.360***	0.415***
	(0.039)	(0.050)	(0.036)	(0.040)	(0.011)	(0.100)	(0.291)	(0.034)
Year dummy							✓	✓
Obs.	45	45	45	45	45	45	135	135
F-test	2.31	0.01	0.27	0.42	0.24	2.34	1.52	0.63
R-squared	0.024	0.000	0.003	0.007	0.002	0.079	0.024	0.011
Root MSE	0.129	0.123	0.134	0.130	0.059	0.046	0.112	0.106

Notes: 1) Estimated by OLS with heteroskedasticity-robust standard errors. Significance levels: (***) $p < 0.01$ (**) $p < 0.05$ and (*) $p < 0.1$. 2) Payments for the funding of the programming periods 2000-2006, 2007-2013 and 2014-2020. 3) Share of votes for each party for the electoral results of January 2015, September 2015 and July 2019.

5. Conclusion

In this dissertation we analyze the relationship of Cohesion Policy for the programming periods 2000-2006, 2007-2013 and 2014-2020 and the share of votes for 2 of the biggest parties in the last years in Greece, the center-right non-Eurosceptic party Nea Dimokratia and the left Eurosceptic party SYRIZA. Our analysis is carried out for the pre-electoral period of two national elections of 2015, one in 2019, the European elections of 2014 and 2019 and the referendum that took place in 2015. We start by using data at the regional level NUTS 2 and at the end we have a closer view by using the share of votes at the regional level NUTS 3

as our first sample consists of a small number of observations, which might be the main cause of endogeneity and statistically insignificant results. In our first model we find a statistically significant positive correlation between the funds from Cohesion Policy and GDP per capita, education, employment, unemployment and agricultural use of land which is possibly connected to Greece being eligible as an Objective 1 country for 2000-2006 and parts of the country as Convergence regions for 2007-2013, while other were in the phasing-in or phasing-out transition.

From the results we obtain from the referendum outcome “NO” and the funds there is a positive correlation between them, but when we add the rest of the variables it is negative. However, none of the results have any statistical significance to have a conclusion out of it.

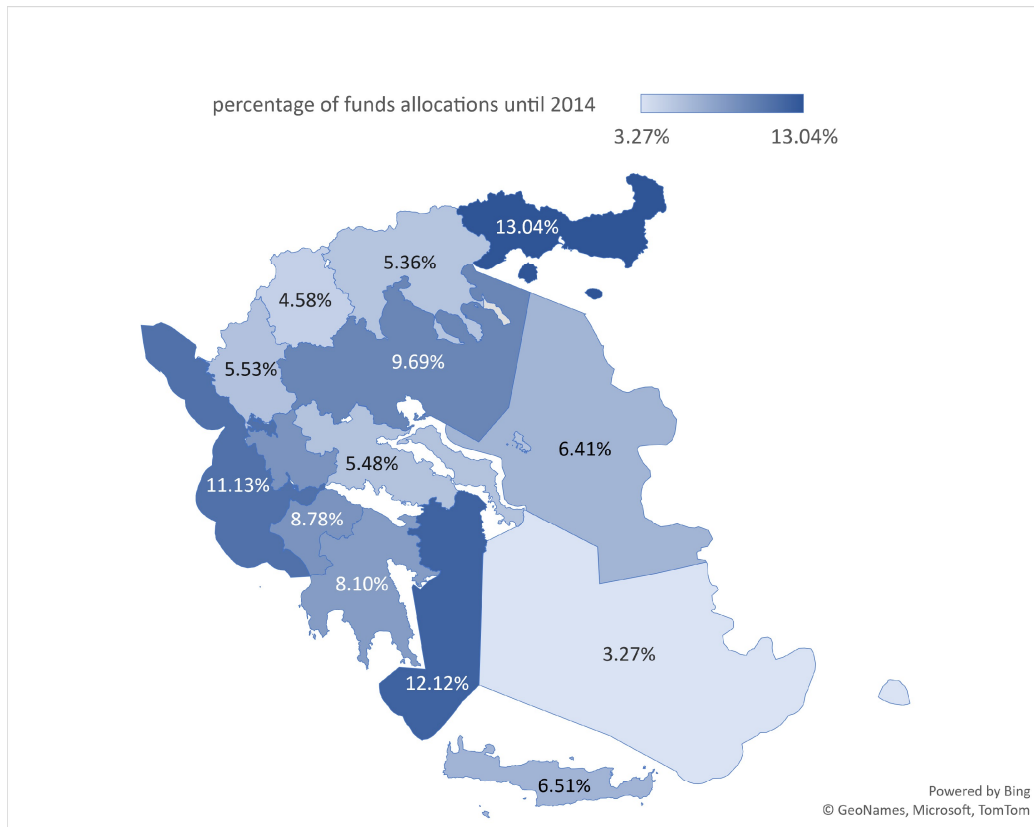
In the case of European elections, the only statistically significant results we have are for Nea Dimokratia party during 2014, where we have an indication that regions with higher GDP per capita that do not receive a high amount of funds vote for Nea Dimokratia. Nonetheless, these results should be further investigated. In the rest of the results from this model for SYRIZA, we have that, regions with low income that receive more funds might vote for this party, but they lack statistical significance. For the outcomes of the national elections, we perform a linear regression and fixed effects where the latest have some statistically significant coefficients indicating again that regions with lower fundings and with a better quality of life vote for the non-Eurosceptic party. This finding could somehow be justified by the fact that regions with a higher number educated people, a lower percentage of unemployment that do not receive a high amount of regional development funds, are more in favor of European programs. Since these regions perform well, especially with the amount of funds that they earn, they might not reject a financial assistance of this level. On the other hand, we can assume regions that do not perform well, even when earning funds from Cohesion Policy, to be against this kind of assistance. The results of the analysis at the regional level NUTS 3 support the negative relationship of the funds and the share of votes for the non-Eurosceptic party of Nea Dimokratia. Overall, what we find is that there doesn't seem to be a big contribution of Cohesion Policy funds in the voting outcome. Similar results have been found for the case of UK (Fidrmuc et al. 2016) and (Crescenzi et al 2017),

To conclude, the results of the discussion are only a preliminary analysis. It is an initial approach to the matter of Cohesion Policy and how much it is being accepted by the Greek population, representing its acceptance by voting the biggest non-Eurosceptic party Nea Dimokratia. There exist studies regarding Cohesion Policy for regional development and

countries that do not perform well and vote for populist parties. The Greek case is quite challenging because of its political and economic instability during the last decade, but very interesting to investigate further, especially because of that.

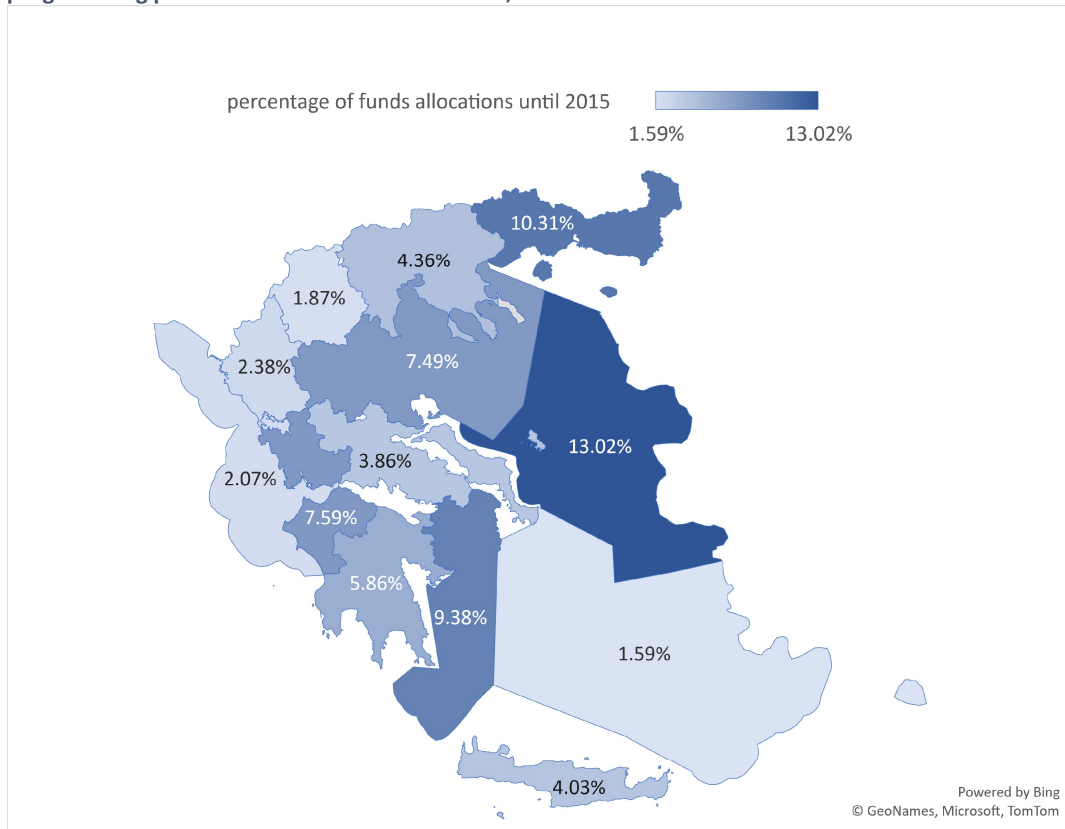
Appendix

Figure A1: Map of funds allocation percentage before the elections of January 2015 for programming periods 2000-2006 and 2007-2014, NUTS 2



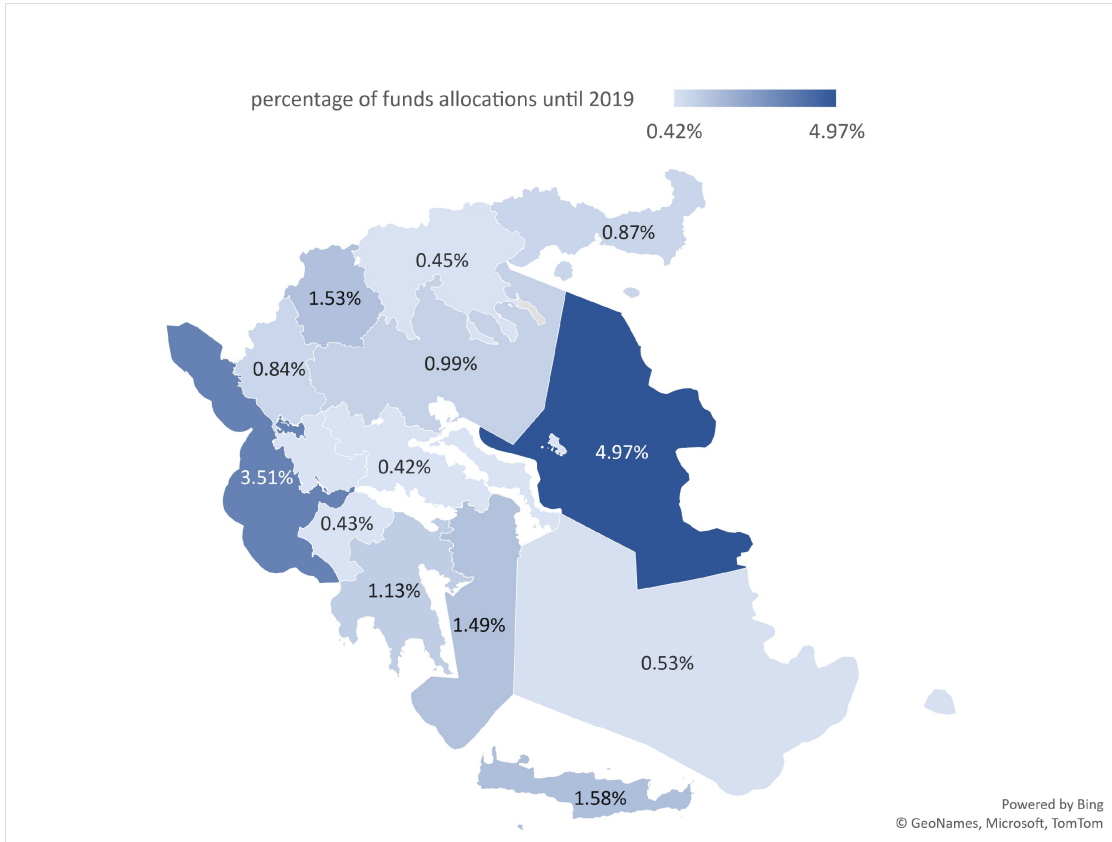
Notes: 1) Payments for 2015 have been excluded as we are interested in the electoral results of January 2015. 2) Payments have been calculated in millions of euros (€) and have been annualized.

Figure A2: Map of funds allocation percentage before the elections of September 2015 for programming periods 2000-2006 and 2007-2014, NUTS 2



Notes: 1) Payments for 2015 have been included as we are interested in the electoral results of September 2015.
2) Funds have been calculated in millions of euros (€) and have been annualized.

Figure A3: Map of funds allocation percentage before the elections of July 2019 for the programming period 2014-2020, NUTS 2



Notes: 1) Payments for 2019 were not provided, hence they have not been included as for the funds concerning the pre-electoral period of July 2019. 2) Payments have been calculated in millions of euros (€) and have been annualized.

Table A1: Funding percentages before elections of January and September of 2015 and July 2019 for the programming periods 2000-2006, 2007-2013 and 2014-2020, NUTS 2

Region, NUTS 2	Funds allocation percentage before the elections of January 2015 for programming periods 2000-2006 and 2007-2014 ¹	Funds allocation percentage before the elections of January 2015 for programming periods 2000-2006 and 2007-2014 ²	Funds allocation percentage before the elections of September 2015 for programming periods 2000-2006 and 2007-2014 ³
Attica	12.12%	9.38%	1.49%
North Aegean	6.41%	13.02%	4.97%
South Aegean	3.27%	1.59%	0.53%
Crete	6.51%	4.03%	1.58%
East Macedonia, Thrace	13.04%	10.31%	0.87%
Central Macedonia	5.36%	4.36%	0.45%
West Macedonia	4.58%	1.87%	1.53%
Epirus	5.53%	2.38%	0.84%
Thessaly	9.69%	7.49%	0.99%
Ionian islands	11.13%	2.07%	3.51%
West Greece	8.78%	7.59%	0.43%
Central Greece	5.48%	3.86%	0.42%
Peloponnese	8.10%	5.86%	1.13%

Notes: 1) Payments for 2015 have been excluded as we are interested in the electoral results of January 2015. 2) Payments for 2015 have been included as we are interested in the electoral results of September 2015. 3) Payments for 2019 were not provided, hence they have not been included for the funds concerning the pre-electoral period of July 2019. 4) Payments have been calculated in millions of euros (€) and have been annualized.

References

- A., Rodriguez-Pose. (2018). The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 11(1), 189-209.
- Albanese, G. B. (2019). Populist Voting and Losers' Discontent: Does Redistribution Matter? *Marco Fanno Working Paper, no. 239*.
- Bachtler, C. M. (2020). European Identity and Citizen Attitudes to Cohesion Policy: What do we know? *COHESIFY WORK PACKAGE 2 - TASK2.1: OUTPUT 2.1*.
- Bachtrogler, J. O. (2018). Euroscepticism and Eu Cohesion Policy: the Impact of Micro-level Policy Effectiveness on Voting Behavior. *WU Vienna University of Economics and Business*.
- Barca, F. (2009). *An Agenda for the Reformed Cohesion Policy. Report to the Commissioner for Regional Policy*. Brussels: European Commission.
- Becker, S. O. (2017). Who voted for Brexit? A comprehensive district-level analysis. *Economic Policy* 32, 601-650.
- Borin, A. M. (2018). EU Transfers and Euroscepticism: Can't Buy Me Love? . *University of Zurich, Department of Economics, Working Paper No. 289*.
- Capello, R. P. (2018). Understanding citizen perception of European Union Cohesion Policy: the role of the local context. *Regional Studies* 52 (11), 1451–1463.
- Crescenzi, R. D. (2020). It's not about the money. EU funds, local opportunities, and Euroscepticism. . *Regional Science and Urban Economics*.
- Dellmuth, L. C. (2018). All spending is not equal: European Union public spending, policy feedback and citizens' support for the eu. *Eur. J. Polit. Res.* 57, 3–23.
- Dellmuth, L. M. (2011). The cash divide: the allocation of European Union. *Journal of European Public Policy* 18:7, DOI: 10.1080/13501763.2011.599972, 1016-1033.
- Di Cataldo, M. (2017). The impact of EU Objective 1 funds on regional. *Wiley, Journal of Regional Science* 54, DOI: 10.1111/jors.12337, 814-839.
- Dijkstra, A. R.-P. (2021). Does Cohesion Policy reduce EU discontent and Euroscepticism?, DOI: 10.1080/00343404.2020.1826040. *Regional Studies* 55:2, 354-369.

- Dijkstra, L. P.-P. (2020). The geography of EU discontent. . *Regional Studies*, 54(6), 737-753.
- Fidrmuc, J. H. (2019). Can money buy EU love? *European Journal of Political Economy*.
- Halikiopoulou, D. (2018). A Right-wing Populist Momentum? A Review of 2017 Elections Across Europe. *JCMS Journal of Common Market Studies* DOI: 10.1111/jcms.12769.
- Lewis, D. A.-P. (2020). Does Cohesion Policy Reduce EU Discontent and Euroscepticism? *Working Paper by the Directorate-General for Regional and Urban Policy WP 04/2020, European Commission*.
- Vasilopoulou, S. (2018). The party politics of Euroscepticism in times of crisis: The case of Greece. *Politics Vol. 38(3), Department of Politics, University of York* DOI 10.1177/0263395718770599, 311–326.