

AN ANALYSIS OF THE EFFICIENCY OF EUROPEAN FUNDS

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Abstract

The chapter analyses the use and management of the European Structural and Investment Funds, attending to the differences between the countries that carry out them to highlight possible inefficiencies. Taking the EU funds related to the Multiannual Financial Framework 2014-2020, made up by 7.162 projects, the types of funds and their distribution among the countries are analysed through different maps, by comparing budget, decided and spending policies for the projects by each country, with special emphasize the European Regional Development Fund and Cohesion Fund. The paper continues with an empirical research to contrast the hypotheses connected with the efficiency use of funds and indicators that measure the level of transparency and corruption in each country. The results show that the efficiency is higher in northern countries, Finland and Denmark especially, where the levels of transparency are higher and the corruption rates lower.

Keywords: European Structural and Investment Funds, Corruption, Transparency, Inefficiency, Multiannual Financial Framework 2014-2020.

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1. INTRODUCTION

European funds are abundant and allow the development of multiple initiatives and projects in favour of broad sectors of society. How are they spent? Is the use of these resources effective? Although European countries have many things in common, there is also a wide variety between them. Among the countries receiving the funds, there are geographical, cultural and social differences; there are different historical routes, diverse social and economic configurations, variety of legal styles. Do these differences condition the proper spent of European funds? What factors facilitate a better use of European funds? At the same time, there are also funds with different objectives, focused according to the priorities set by the EU. Are there important distinctions in how they are used? Bureaucratic processes can be lengthy and sometimes lead to wasted resources or even corruption. Is there a transparent system in the awarding and execution of European funds?

The institution affirms at the website that “fraud affects approximately 0.2% of the total EU budget”.

On August 2018 the EU simplified the financial regulation applied to those receiving and managing EU funds. One of the main points is greater transparency.

This study aims to analyse the use of European Funds looking for differences between countries and funds that may provide an interesting insight for better use of these economic aids. For this purpose, the different programmes supported by European funds included in the EU 2014-2020 Multiannual Financial Framework have been analysed. The sample includes the 28th countries (27 plus the United Kingdom) and a total of 533 programmes distributed among the following funds: cohesion (CF), social (ESF), regional development (ERDF), agricultural for rural development (EAFRD), maritime and fisheries (EMFF). These programmes are disaggregated by fund, programme, priority axis, thematic objective and category of regions (where available), resulting in 7162 projects.

The remainder of this section is structured as follows. Chapter 2 discusses the theoretical arguments and develops our testable hypotheses. Chapter 3 and 4 set out the empirical design and introduces the data and empirical method. Chapter 5 presents the results and discussion analysis.

2. EUROPEAN FUNDS AND THE HYPOTHESES AMONG CORRUPTION, RULE OF LAW AND GOVERNMENT EFFICIENCY

As we mention in Section 1 European funds are the main investment policy tool. And they are managed by each country, through partnership agreements prepared in collaboration with the European Commission. Our study will focus on ERDF and CF funds, that try to aim to strengthen economic and social cohesion in the European Union by correcting imbalances among regions.

Thus, the situation of each country will affect previously the efficiency of the use of EU Funds. In particular, it is considered the relevance of the rule of law and the government efficiency for the better performance of a country (Gennaioli et al. 2013; Chong et al. 2014). These issues are regarded as expecting their relevance to explain the proper or inappropriate use of European funds.

So, regarding disclosure policies, we address two hypotheses that refers to the transparency and the right use of funds through measures of corruption and transparency scores (Djankov et al. 2010).

Hypothesis 1. There is a positive relationship between the rule of law and the good use of European funds.

Hypothesis 2. There is a negative relationship between corruption and the good use of European funds.

Table 2.1. Distribution of the sample by country

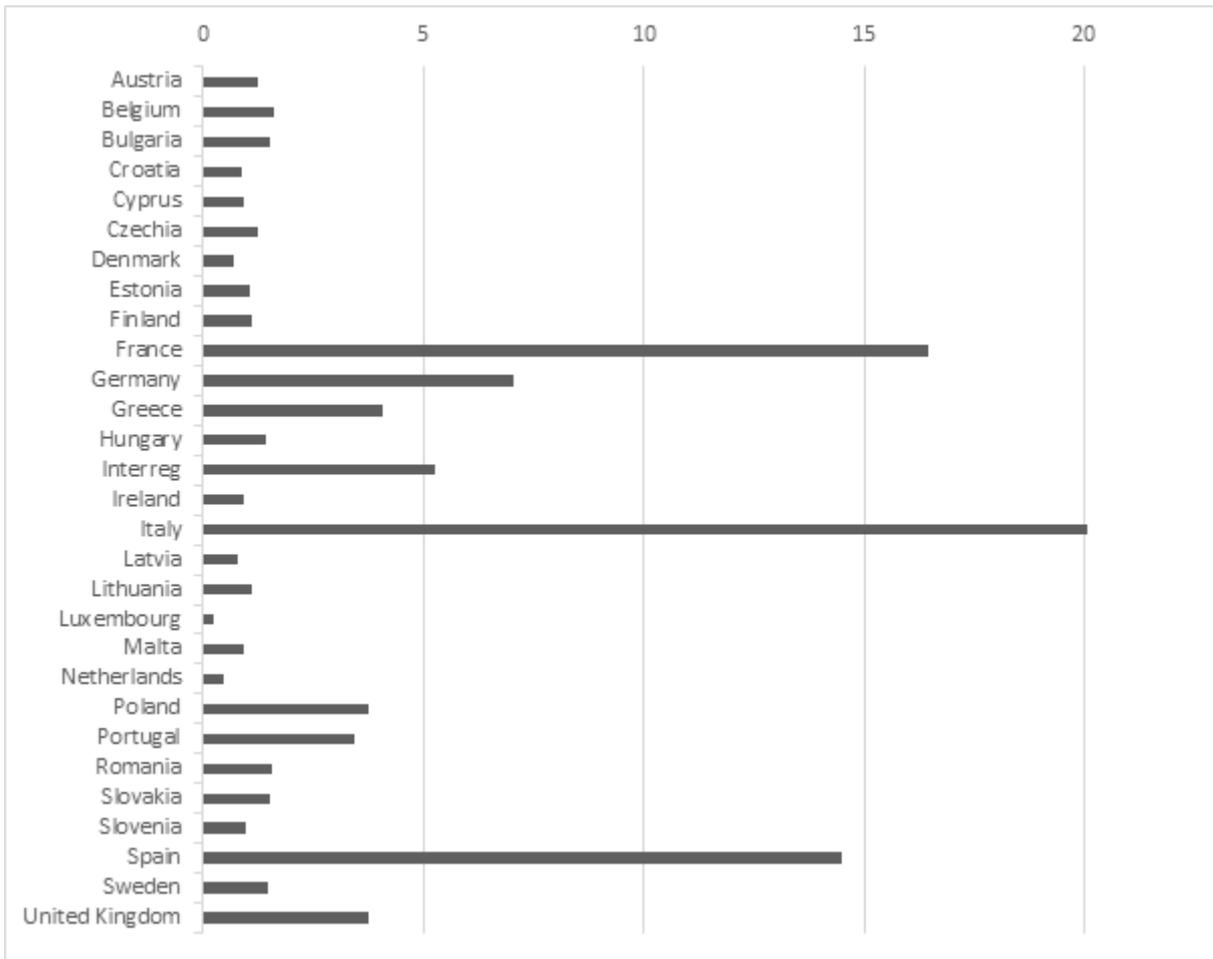
	Freq.	Percent
Austria	88	1.23
Belgium	115	1.61
Bulgaria	108	1.51
Croatia	63	0.88
Cyprus	65	0.91
Czechia	90	1.26
Denmark	50	0.7
Estonia	77	1.08
Finland	78	1.09
France	1,178	16.45
Germany	506	7.07
Greece	291	4.06
Hungary	104	1.45
Interreg	376	5.25
Ireland	67	0.94
Italy	1,438	20.08
Latvia	56	0.78
Lithuania	81	1.13
Luxembourg	16	0.22
Malta	65	0.91
Netherlands	32	0.45
Poland	268	3.74
Portugal	248	3.46
Romania	111	1.55
Slovakia	108	1.51
Slovenia	71	0.99
Spain	1,037	14.48
Sweden	105	1.47
United Kingdom	270	3.77
Total	7,162	100

Source: Own elaboration based on data of the European Union

Table 2.1 includes all the European Structural and Investment Funds (ESI Funds) during the 2014 – 2020 period distributed by country. The data has been obtained from the European Union website.⁷

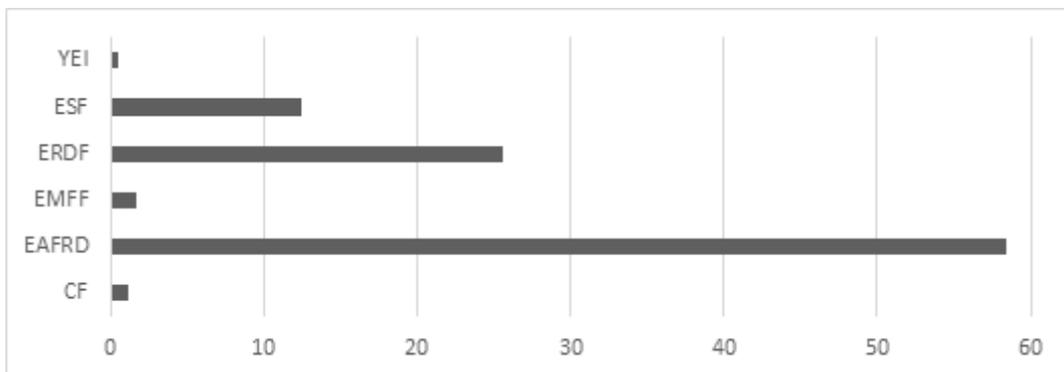
It is also displayed in Figure 2.1, where the percentage of projects by country can be observed. Table 2.2 and Figure 2.2 are also referred to the number of projects, classified by fund type. Interestingly, while EAFRD gets 58% of total projects, it only means 23% of the total amount planned. On the other hand, ERDF, which has 25% of the projects gets 43% of the total amount planned. We perform a more specific descriptive analysis of the sample in the following sections.

Figure 2.1. Percentage of projects by country



Source: Own elaboration based on data of the European Union

Figure 2.2. Percentage of projects by fund



Source: Own elaboration based on data of the European Union

3. MEASURES OF EFFICIENCY, CORRUPTION, RULE OF LAW BY EACH COUNTRY AND RESEARCH METHOD

Data from the European Commission shows three different amounts named *planned*, *decided* and *spending*. The **planned** amount is the total budget of the European Structural and Investments Funds Programmes in euro (EU + National co-financing). The **decided** amount is the total amount (EU + National) allocated to the projects (operations) selected by the programme managers; also referred to as total eligible cost reported by the national and regional programmes to the Commission. The **spending** amount is the total expenditure eligible for reimbursement, as reported by the beneficiary projects to the programmes; also referred to as total eligible expenditure, it is reported by the national and regional programmes to the Commission. For more information on the transmission of financial data, see Regulation (EU) No 1303/ 2013 Art 112.

We define two ratios that constitute our dependent variables. The first one is the decided amount over total planned (DEC_PL); the second one is the amount spent over decided (SP_DEC). Considering that the appropriate thing is to adjust to the budget, these variables give us two different ways for measuring if funds have been properly spent. We use the following categorical variables to analyse these ratios: FUND refers to each type of fund (CF, EAFRD, EMFF, ERDF, ESF and YEI). GEO is the geographic dimension, with three possibilities (international, national and regional). CATEG is the category of region (more developed, less developed, transition and outermost).

As an independent variable, we define FSIZE as the size of the project through the logarithm of the total amount planned. We expect a positive relationship with the dependent variables that may indicate that countries manage well these big funds; otherwise, European Commission control should increase, perhaps specifying in smaller amounts the projects of each programme. We also use the following country-level variables: GDP_g is the annual percentage growth rate of GDP (the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products) at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. We expect that the higher the growth of the GDP of a country, the better their use of European Funds.

CPI is the score of each country in the Corruption Perceptions Index given by Transparency International website in 2019. More transparent countries have higher punctuations. Therefore, it should be positively related to the proper use of European funds. TIC is the Tolerance Index to Corruption. It is the result of a survey of the World Bank, specifically the item QB4T of the special Eurobarometer 502. It gives a measure of corruption where higher values of TIC mean higher levels of corruption that is tolerated by citizens. In this vein, CI_av is the average of the punctuation of 13 questions about corruption in the country that had to be answered in terms of agreement or disagreement, where 3 indicates the agreement with corruption environment and 0 the disagreement. Therefore, the higher the CI_av value, the higher corruption in the country, according to this measure. It is obtained from the item QB15 of the special Eurobarometer 502 of the World Bank. A negative relationship between these two measures of corruption and the use of European funds is expected.

Moreover, other measures obtained from the Doing Business website (<https://www.doingbusiness.org/>) are used. These ranks have been determined by sorting the scores for the respective variables. The scores are the simple average of the scores of each of the component indicators. The ease of doing business rank (DB) compiles all the ten topics using the average of the scores and sorting the results to obtain the rank. Although it compiles a heterogeneous mix of indicators, a positive relationship with the use of European funds could be expected. The definition of the ten ranks are the following:

- Rank-Starting a business (START): the procedures, time and cost for an entrepreneur to start and formally operate a business, as well as the paid-in minimum capital requirement.
- Rank-Dealing with construction permits (CONSTRUCT): the procedures, time, cost to deal with construction permits, as well as the building quality control index that evaluate the quality of building regulations, the strength of quality control and safety mechanisms, liability and insurance regimes and professional certification requirements.
- Rank-Getting electricity (ELECTRIC): the procedures, time, cost for a business to obtain a permanent electricity connection and supply for a

standardized warehouse, as well as the reliability of supply and transparency of tariffs index.

- Rank-Registering property (REGISTER): the procedures, time, the cost to transfer property between two local companies, as well as the quality of land administration index that evaluates the reliability of infrastructure, transparency of information, geographic coverage, land dispute resolution and equal access to property rights.
- Rank-Getting credit (CREDIT): this score benchmarks economies for the regulatory best practice on the indicator set. The score is indicated on a scale from 0 to 100, where 0 represents the worst regulatory performance and 100 the best regulatory performance.
- Rank-Protecting minority investors (PROTECT): this score benchmarks economies for the regulatory best practice on the indicator set. The score is indicated on a scale from 0 to 100, where 0 represents the worst regulatory performance and 100 the best regulatory performance.
- Rank-Paying taxes (TAXES): the payments, time and total tax and contribution rate for a company to comply with tax laws in an economy, as well as the post-filing procedures to request and process a VAT refund claim and to comply with and complete a corporate income tax correction.
- Rank-Trading across borders (TRADE): Doing Business measures the time and cost associated with three sets of procedures of exporting and importing goods —documentary compliance, border compliance and domestic transport—within the overall process of exporting or importing a shipment of goods. The score for trading across borders is the simple average of the scores for the time and cost for documentary compliance and border compliance to export and import.
- Rank-Enforcing contracts (ENFORCE): the time and cost for resolving a commercial dispute through a local first-instance court, as well as the quality of judicial processes that promotes quality and efficiency in the court system.

- Rank-Resolving insolvency (INSOLV): the recovery rate of insolvency proceedings involving domestic entities, as well as the strength of the legal framework applicable to judicial liquidation and reorganization proceedings.

For a better analysis, the variables with similar meaning are grouped in the same factor through factor analysis. According to the correlation matrix in Table 2.3, given the coefficients, three different factor analyses are performed, one for each factor that compiles information of three variables as follows: variables credit, taxes and contract in factor 1, starting, construction and electric in factor 2, and register, trading and insolvency in factor 3. Factor analysis results and post-estimation analyses displayed in Table 2.4 support the clusters (Kaiser, 1974).

Table 2.3. Correlation matrix for doing business variables

	START	CONSTRUCT	ELECTRIC	REGISTER	CREDIT	PROTECT	TAXES	TRADE	ENFORCE
CONSTRUCT	0.3172								
	0.0000								
ELECTRIC	0.2134	0.3558							
	0.0000	0.0000							
REGISTER	-0.3461	-0.2769	-0.0339						
	0.0000	0.0000	0.0052						
CREDIT	-0.1628	0.3092	-0.1834	0.0908					
	0.0000	0.0000	0.0000	0.0000					
PROTECT	0.3010	0.2144	0.1130	-0.1513	0.0289				
	0.0000	0.0000	0.0000	0.0000	0.0174				
TAXES	0.3154	0.4038	0.0197	-0.1551	0.5888	0.2565			
	0.0000	0.0000	0.1044	0.0000	0.0000	0.0000			
TRADE	-0.1684	-0.4063	-0.2027	0.2465	-0.3558	-0.1295	-0.3259		
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
ENFORCE	0.0751	0.5492	0.0556	-0.1487	0.5042	0.0348	0.7277	-0.0227	
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0042	0.0000	0.0616	
INSOLV	-0.2441	0.1661	0.3889	0.2614	0.0867	0.1265	0.0168	0.1366	0.0953
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1668	0.0000	0.0000

Source: Own elaboration

Table 2.4. Results of the factor analysis

	F1	F2	F3
CREDIT	0.7985		
TAXES	0.9063		
ENFORCE	0.8716		
START		0.6778	
CONSTRUCT		0.7895	
ELECTRIC		0.7155	
REGISTER			0.7636
TRADE			0.6422
INSOLV			0.6622
Accounted variance	73.95%	53.16%	47.80%
Eigenvalue	2.2186	1.5947	1.4340
KMO	0.6768	0.6032	0.5714
Bartlett test (Chi-square)	8,131.93	1,725.51	945.85
p-Value	0.0000	0.0000	0.0000
Observations	6,786	6,786	6,786

Source: Own elaboration

To test the established hypothesis, a regression analysis is developed following the models displayed in equations [1] and [2]:

$$DEC_PL = \beta_0 + \beta_1 \cdot FSIZE + \beta_2 \cdot GDP_g + \beta_3 \cdot CPI + \beta_4 \cdot TIC + \beta_5 \cdot CI_av + \varepsilon$$

[1]

$$SP_DEC = \beta_0 + \beta_1 \cdot FSIZE + \beta_2 \cdot GDP_g + \beta_3 \cdot CPI + \beta_4 \cdot TIC + \beta_5 \cdot CI_av + \varepsilon$$

[2]

4. RESULTS AND DISCUSSION

In Table 2.5, the main descriptive statistics are shown. Results reveal an appropriate distribution of all the variables. Average values of the ratios of European funds are given

by country in Table 2.6; these are represented in Figures 2.3 and 2.4 through a map of Europe where regions with higher levels of use are shown with darker colours. The same pattern is followed to show results by fund type in Table 2.7 and Figures 2.5, 2.6, 2.7 and 2.8.

Table 2.5. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Q25	Q50	Q75	Max
DEC_PL	4,803	0.5768	0.2779	0	0.3656	0.6016	0.8063	1
SP_DEC	4,803	0.4559	0.2801	0	0.2353	0.4397	0.6666	1
GEO	4,803	2.6021	0.6052	1	2	3	3	3
FUND	4,803	3.0981	1.2298	1	2	2	4	6
FSIZE	4,803	16.7856	2.0306	8.5172	15.4439	16.9200	18.2547	23.1405
CATEG	1,885	1.8095	0.7916	1	1	2	2	4
GDP_g	4,499	1.6963	1.2158	0.3013	0.5642	1.5086	1.9791	5.5498
CPI	4,499	62.9344	10.9759	43	53.0000	62.0000	69.0000	87
TIC	4,499	0.6496	0.2765	0.2000	0.6000	0.6000	0.6000	1.7000
CI_av	4,499	1.6956	0.2603	1.0100	1.5800	1.8100	1.9300	2.1300
DB	4,499	39.2238	17.2889	4	30.00	32.00	58.00	88
START	4,499	77.7499	37.5069	11	37.00	97.00	98.00	134
CONSTRUCT	4,499	69.1578	32.8438	4	45.00	60.00	97.00	157
ELECTRIC	4,499	40.4597	30.2143	5	17.00	38.00	55.00	157
REGISTER	4,499	60.9873	37.4132	4	26.00	59.00	92.00	156
CREDIT	4,499	86.3928	31.3351	15	48.00	94.00	119.00	176
TAXES	4,499	64.8329	36.7845	4	35.00	61.00	77.00	128
TRADE	4,499	9.4679	15.4028	1	1.00	1.00	17.00	52
ENFORCE	4,499	55.3865	46.5076	7	16.00	34.00	122.00	146
INSOLV	4,499	25.2581	18.8447	1	18.00	21.00	26.00	121

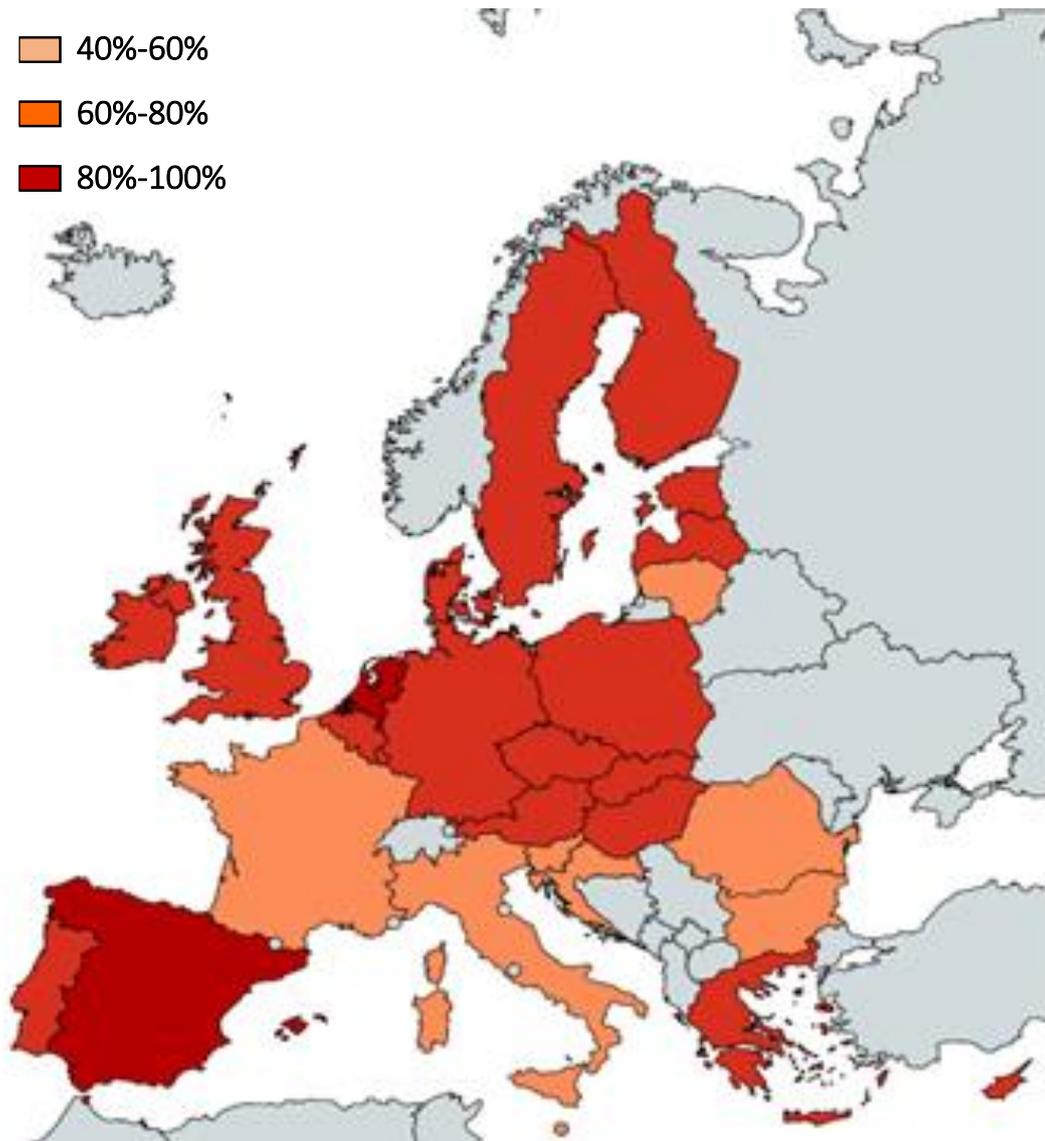
Source: Own elaboration

Table 2.6. Average of ratios by country

6	DEC_PL	SP_DEC
Austria	62.20%	57.37%
Belgium	69.92%	48.22%
Bulgaria	51.57%	56.52%
Croatia	47.02%	60.30%
Cyprus	69.95%	57.81%
Czechia	60.51%	63.52%
Denmark	74.22%	83.99%
Estonia	69.72%	71.23%
Finland	65.15%	92.49%
France	52.66%	56.37%
Germany	66.15%	62.38%
Greece	64.53%	34.72%
Hungary	76.68%	1832.81%
Interreg	81.50%	26.97%
Ireland	62.24%	68.47%
Italy	49.29%	49.36%
Latvia	75.51%	62.53%
Lithuania	47.53%	87.62%
Luxembourg	67.03%	67.57%
Malta	47.83%	63.26%
Netherlands	81.21%	46.81%
Poland	72.97%	71.82%
Portugal	67.64%	48.49%
Romania	58.89%	40.79%
Slovakia	63.05%	48.74%
Slovenia	58.73%	47.70%
Spain	80.98%	56.09%
Sweden	79.12%	50.46%
United Kingdom	79.95%	70.60%
Total	63.71%	82.24%

Source: Own elaboration based on data of the European Union

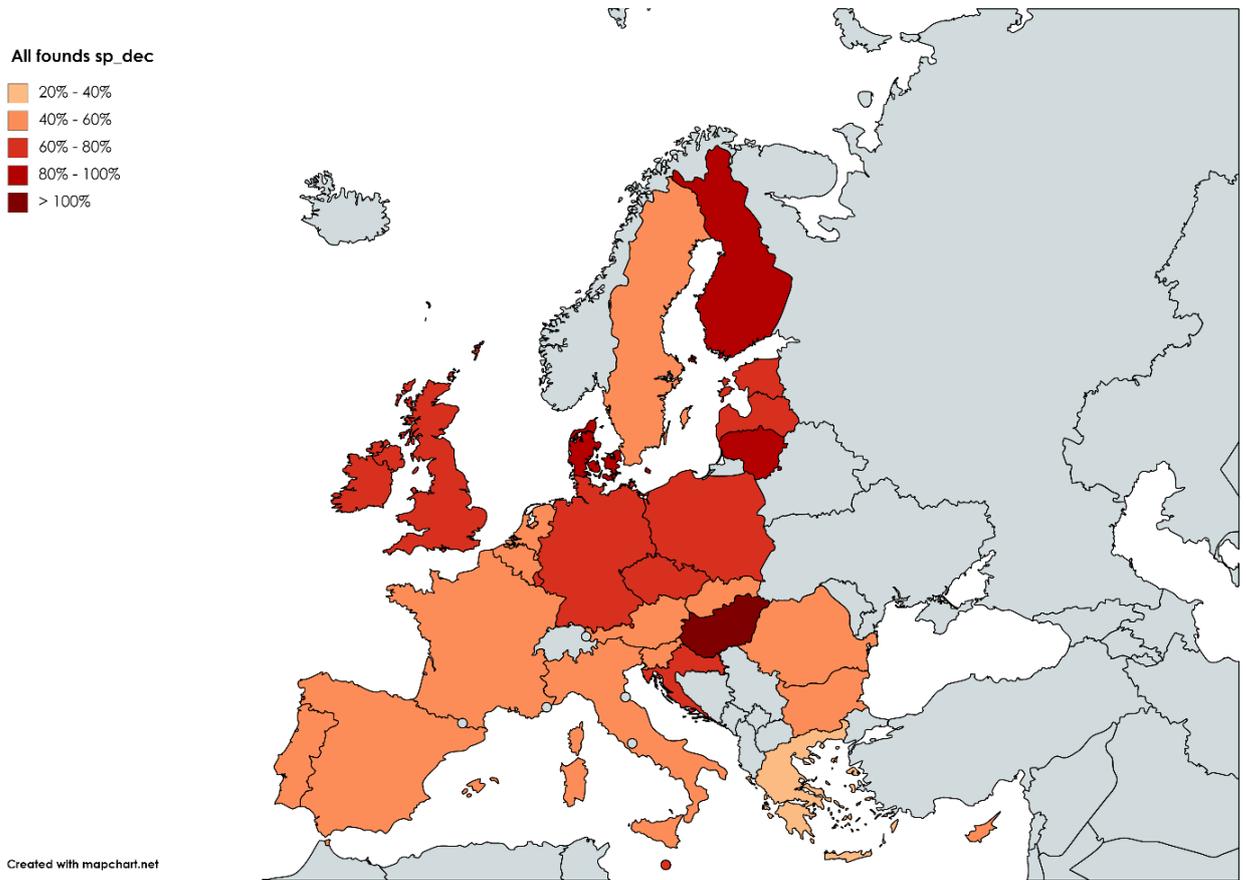
Figure 2.3. Map of DEC_PL by country



Source: Own elaboration based on data of the European Union

Figure 2.3 shows the average of the ratio decided amount over the total planned of all the funds by countries. Almost all the countries have decided to allocate at least half of the total planned amount to their projects, being 63.71% the average of the European Union. Netherlands and Spain are the countries that have a higher rate, followed by the United Kingdom and Sweden. With a lower percentage of decided funds are Croatia, Lithuania and Malta.

Figure 2.4. Map of SP_DEC by country



Source: Own elaboration based on data of the European Union

Table 2.7. Average of ratios by fund type

	DEC_PL	SP_DEC
CF	85.63%	36.46%
EAFRD	56.40%	122.01%
EMFF	48.89%	44.08%
ERDF	76.92%	34.70%
ESF	68.28%	40.65%
YEI	103.98%	52.96%
Total	63.71%	82.24%

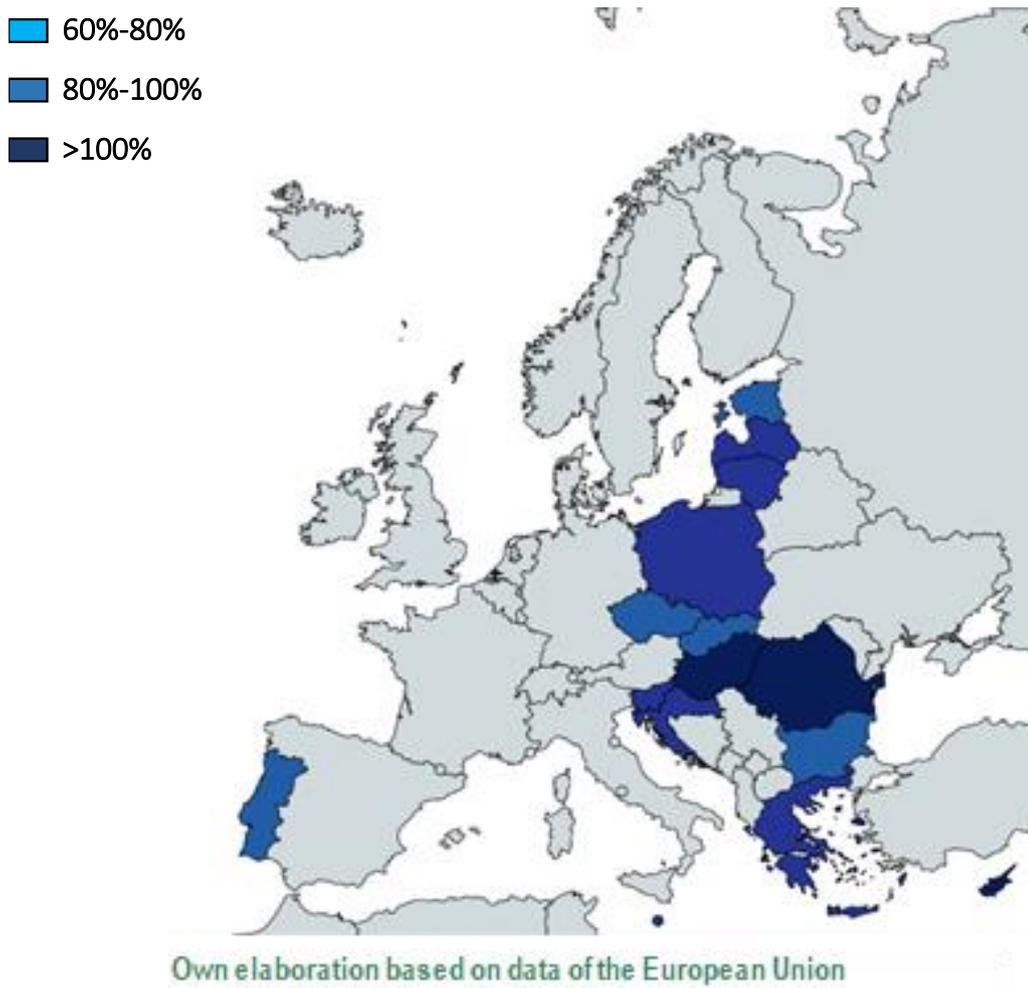
Source: Own elaboration

On the other hand, this map (Figure 2.4) represents the average of the amount that the counties have spent over the decided amount. Attending to this ratio, it can be observed that the southern countries have spent a smaller amount of their budget relative to the amount decided than the northern ones, which have darker colours.

This difference between countries like Finland, Hungary and Lithuania with a high average, and others with a less one like Greece or Romania may be due to the greater or lesser maturity of the projects involved. A more mature project portfolio would lead to a higher rate of spending.

Table 2.7 differentiates the types of fund grouping all the affected countries. The Youth Employment Initiative (YEI) has the higher ratio of decided money over total planned, being over 100%, which means that the countries have decided a portfolio of projects financially greater than the agreed plan. This can be done to minimize the risk of portfolio projects.

Figure 2.5. Map of DEC_PL by country

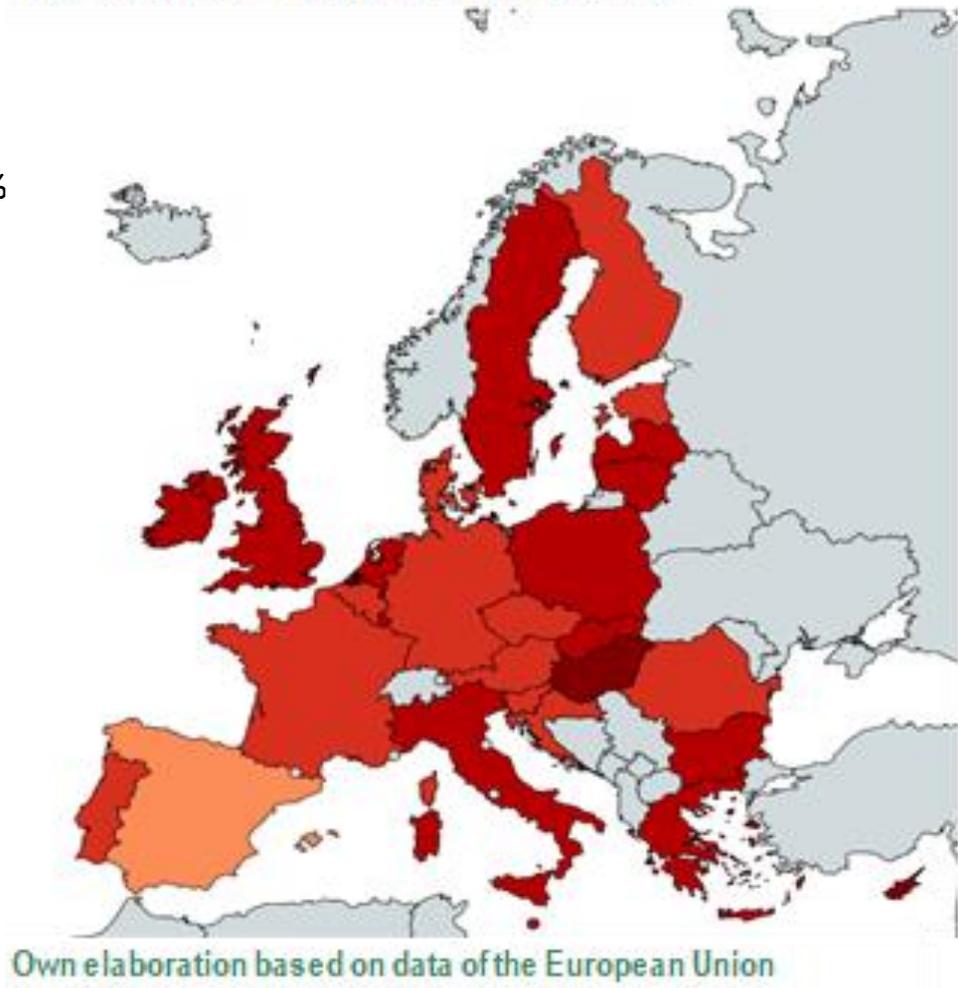


All funds, except for the European Maritime and Fisheries Fund (EMFF), have decided more than half of the amount planned. While attending to the amount spent over decided, only the European Agricultural Fund for Rural Development (EAFRD) and the Youth Employment Initiative (YEI) have spent half of their decided amount.

This map (Figure 2.5) attends only to the Cohesion Fund and the average of the ratio decided amount over total planned by country. Bulgaria and Portugal are the countries with the lowest average, both being around 65%.

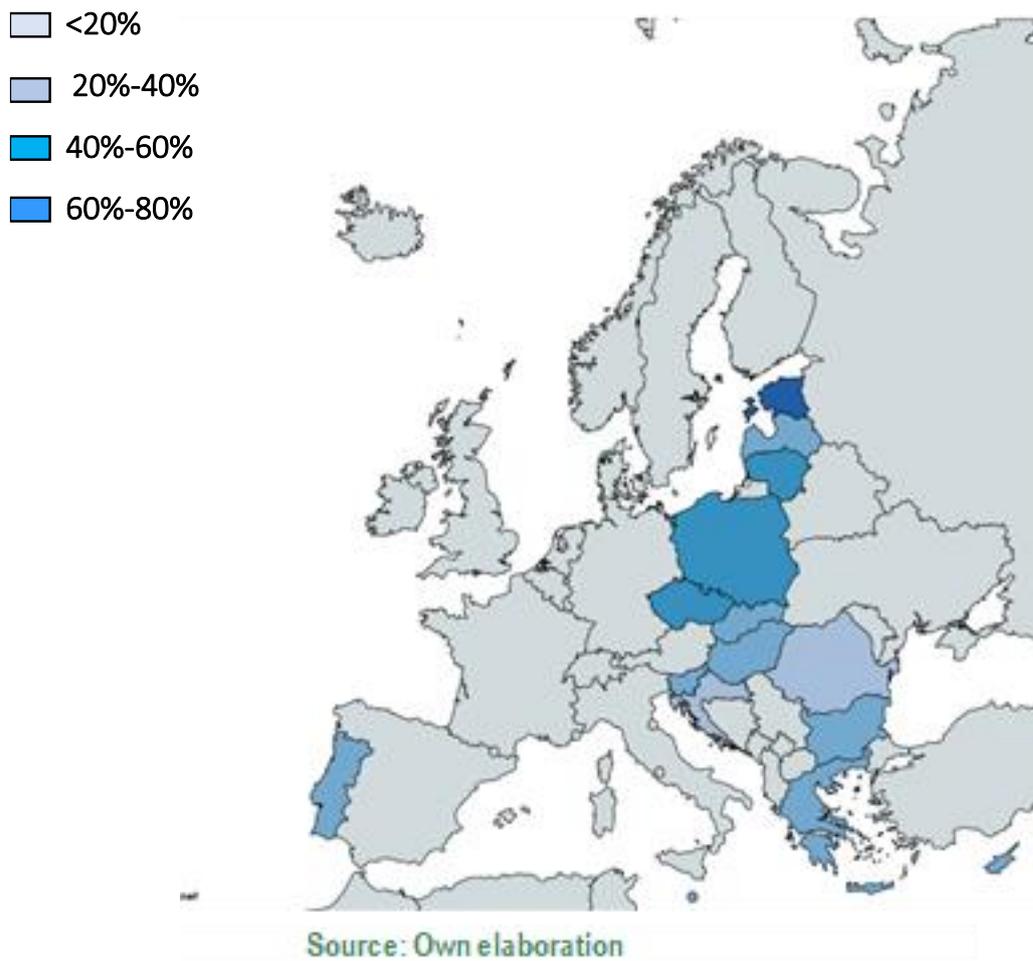
Figure 2.6. Map of DEC_PL of ERDF by country

- 40%-60%
- 60%-80%
- 80%-100%



On the other hand, and with a higher ratio are Romania, Hungary, or Cyprus. These three countries have an average of over 100%, it means that they have decided an amount higher than the planned. This is because the countries look to reduce the risk of their projects and make sure they decide the total of their planned amount. With regards to the European Regional Development Fund highlights Spain, with the lower average of all the countries, because they have decided only 51% of their planned amount. Finland and Slovenia have a low decided average as well, being approximately 60% of their total planned amount.

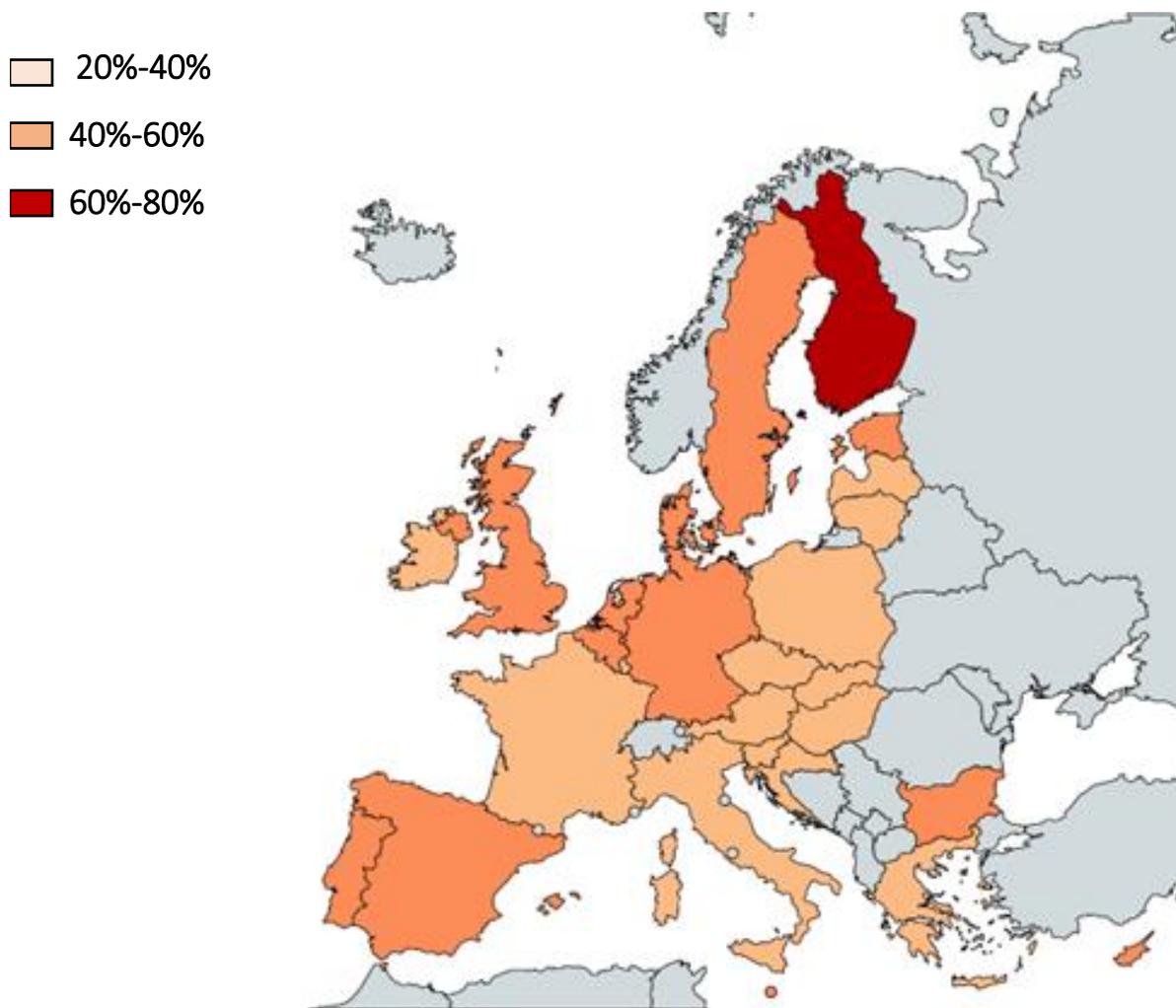
Figure 2.7. Map of SP_DEC of CF by country



However, the countries that have decided a higher amount over their planned amount are Cyprus and Hungary. Both states present a ratio greater than 100%, having decided on a larger budget amount than they had planned, probable due to the reasons explained above. Next are Malta, Netherlands and Luxembourg, with an average close to 100%, having decided almost all their planned amount. Figure 2.7 shows the Cohesion Fund and the average of the ratio spent amount over total decided by country. All the averages are low, with Lithuania and Estonia being the only countries with an average amount spent above half of their decided amount.

The situation of Croatia and Romania stands out, having spent only 17% and 16% of their decided amount respectively, and being the countries with a lower average.

Figure 2.8. Map of SP_DEC by country



Source: Own elaboration based on data of the European Union

This map (Figure 2.8) also shows the average of the ratio spent amount over total decided by country, but now from the European Regional Development Fund. At first sight, it can be observed that Finland is the country with the highest average, above 80%, and therefore, coloured with a darker colour. Nevertheless, Hungary, Croatia and Slovenia are the countries with the lowest average spent over the decided amount. Hungary opposes its position as one of the countries with a higher average of the decided amount over total planned with one of the worst averages of the spent amount over decided.

In Table 2.8 and Table 2.9 we show the average ratios by geographic dimension and category of region. This last classification is less interesting given the small number of variables that have a value for this measure.

Table 2.8. Average of ratios by geographic dimension

	Mean	Mean
International	81.50%	26.97%
National	62.99%	157.15%
Regional	62.58%	55.80%
Total	63.71%	82.24%

Source: Own elaboration

Table 2.9. Average of ratios by category of region

	Mean	Mean
More developed	72.88%	42.24%
Less developed	73.47%	34.39%
Transition	71.66%	35.39%
Outermost	82.09%	81.31%
Total	72.88%	38.21%

Source: Own elaboration

The correlation matrix is shown in Table 2.10. A negative and high correlation is observed between the variable (CPI) that measures the level of transparency and the corruption variables (TIC) and (CPI_av), which makes a lot of sense since the more transparency the less corruption. And there is also a high and, in this case, a positive correlation between the size of the fund and the GDP growth of each country (value of 0.1806).

Tabla 10: Correlation matrix

	DEC_PL	SP_DEC	FSIZE	GDP_g	CPI	TIC	CI_av	DB	START	CONSTRUCT	ELECTRIC	REGISTER	CREDIT	TAXES	TRADE	ENFORCE
SP_DEC	-0.0073															
	0.5667															
FSIZE	0.0138	-0.0168														
	0.2502	0.1876														
GDP_g	0.0179	0.0497	0.1806													
	0.1458	0.0002	0.0000													
CPI	0.0162	-0.0282	-0.0317	-0.1545												
	0.1897	0.0314	0.0101	0.0000												
TIC	-0.0055	0.0659	0.1834	0.3193	-0.3149											
	0.6533	0.0000	0.0000	0.0000	0.0000											
CI_av	-0.0018	0.0066	-0.0805	0.0984	-0.7980	-0.0416										
	0.8845	0.6134	0.0000	0.0000	0.0000	0.0006										
DB	-0.0252	0.0094	-0.0070	-0.0844	-0.8013	0.2040	0.6038									
	0.0406	0.4727	0.5696	0.0000	0.0000	0.0000	0.0000									
START	0.0018	0.0054	0.0876	-0.1050	-0.2600	-0.0504	0.1765	0.1572								
	0.8828	0.6809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000								
CONSTRUCT	-0.0115	0.0179	-0.0091	-0.0625	-0.7494	0.3092	0.6669	0.6213	0.3172							
	0.3509	0.1721	0.4620	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							
ELECTRIC	0.0092	0.0485	0.0930	0.5306	-0.5593	0.2941	0.4523	0.4041	0.2134	0.3558						
	0.4532	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
REGISTER	0.0011	-0.0169	-0.0001	0.1543	0.1192	-0.0079	0.0372	0.1618	-0.3461	-0.2769	-0.0339					
	0.9289	0.1986	0.9957	0.0000	0.0000	0.5168	0.0022	0.0000	0.0000	0.0000	0.0052					
CREDIT	-0.0294	-0.0317	-0.2248	-0.4852	-0.3040	-0.3701	0.4189	0.5837	-0.1628	0.3092	-0.1834	0.0908				
	0.0170	0.0157	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				

PROTECT	-0.0359	-0.0066	-0.0639	-0.5203	-0.5677	-0.0335	0.2913	0.7125	0.3154	0.4038	0.0197	-0.1551	0.5888			
	0.0035	0.6149	0.0000	0.0000	0.0000	0.0058	0.0000	0.0000	0.0000	0.0000	0.1044	0.0000	0.0000			
TAXES	0.0089	-0.0088	0.0780	0.0665	0.3489	0.1363	-0.3690	-0.1473	-0.1684	-0.4063	-0.2027	0.2465	-0.3558	-0.3259		
	0.4699	0.5017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
TRADE	-0.0202	-0.0148	-0.0094	-0.3294	-0.5881	0.0723	0.4244	0.7541	0.0751	0.5492	0.0556	-0.1487	0.5042	0.7277	-0.0227	
	0.1005	0.2603	0.4460	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0616	
ENFORCE	-0.0108	0.0360	0.0439	0.5167	-0.5282	0.5049	0.3162	0.4916	-0.2441	0.1661	0.3889	0.2614	0.0867	0.0168	0.1366	0.0953
	0.3809	0.0061	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1668	0.0000	0.0000

Results in Table 2.11 show a positive and significant relationship between FSIZE and the decided over the planned measure of the use of European funds, suggesting the convenience of countries managing the whole amount allocated. The higher the size of the project, the better the use of the fund. However, we find no significant relationship in Table 2.12. This result leads to propose a stricter control of the final steps of the use of European funds. Regarding transparency concerns, results show a positive influence of transparency policies (CPI) and a negative impact of corruption (TIC, CI_av) in the use of European funds.

Table 2.11. Results of the regression of model 1

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	DEC_PL	DEC_PL	DEC_PL	DEC_PL	DEC_PL	DEC_PL
FSIZE	0.066*** (0.002)	0.066*** (0.002)	0.067*** (0.002)	0.065*** (0.002)	0.066*** (0.002)	0.066*** (-0.002)
GDP_g	-0.002 (0.003)	0.003 (0.003)	0.002 (0.003)	0.001 (0.003)	-0.004 (0.003)	0.004 (-0.003)
CPI		0.004*** (0.000)				0.002*** (-0.001)
TIC			- 0.050*** (0.014)			-0.024 (-0.017)
CI_av				- 0.128*** (0.014)		-0.046* (-0.028)
Constant	- 0.609*** (0.026)	- 0.833*** (0.034)	- 0.592*** (0.027)	- 0.372*** (0.037)	- 0.550*** (0.028)	- 0.675*** (-0.098)
Observations	5,804	5,804	5,804	5,804	5,804	5,804
R-squared	0.229	0.243	0.231	0.240	0.235	0.244
F-test	862.4***	621.1***	580.1***	609.2***	592.4***	373.4***

Estimated coefficients (standard errors) from the estimation. The dependent variable is DEC_PL, the total amount decided over the total planned amount. FSIZE is the logarithm of the total planned amount. GDP_g is the annual percentage growth rate of GDP. CPI is a transparency score. TIC is the tolerance index to corruption. CI_av is a corruption index. ***, **, and * indicate significance at the 99%, 95%, and 90% confidence level, respectively.

Results in table 2.11 show that the coefficient of transparency policies index (CPI) is positive and significant, that verifies the hypothesis 2 proposed. It indicates that, when the measure of transparency is higher, the amount decided over the total planned is higher. Besides, the coefficients of tolerance index to corruption (TIC) and the corruption index (CI_av) are negatives and this verifies also the second hypothesis.

In regions where the corruption perception according to the indexes is higher, the percentage of decided European Funds is lower.

Table 2.12. Results of the regression of model 2 and factors by fund

	CF	EAFRD	EMFF	ERDF	ESF	
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	SP_DEC	SP_DEC	SP_DEC	SP_DEC	SP_DEC	SP_DEC
FSIZE	0.000	-0.013	0.036***	-0.000	-	0.003
					0.015***	
	(0.002)	(0.018)	(0.003)	(0.013)	(0.004)	(0.004)
GDP_g	-	0.027	-0.012	0.003	-0.007	-0.011
	0.013***					
	(0.005)	(0.030)	(0.008)	(0.022)	(0.008)	(0.010)
CPI	0.002*	0.005	0.001	-0.000	0.001	-0.001
	(0.001)	(0.007)	(0.002)	(0.005)	(0.002)	(0.002)
TIC	-0.022	0.068	0.025	-0.146	-	-
					0.120***	0.105***
	(0.019)	(0.086)	(0.031)	(0.093)	(0.030)	(0.038)
CI_av	-0.006	-0.246	0.124**	-0.172	-0.041	-
						0.337***
	(0.030)	(0.200)	(0.052)	(0.149)	(0.046)	(0.056)
F1	-	0.033	-	-0.076*	-	0.033**
	0.031***		0.053***		0.034***	
	(0.008)	(0.051)	(0.012)	(0.042)	(0.013)	(0.016)
F2	0.003	-0.044	-0.019*	0.052*	0.021*	0.023*
	(0.007)	(0.038)	(0.010)	(0.030)	(0.011)	(0.013)
F3	-0.002	-0.010	-0.009	0.019	0.008	0.043***
	(0.005)	(0.030)	(0.009)	(0.023)	(0.007)	(0.009)
Constant	0.379***	0.689	-0.328*	0.796	0.707***	1.079***
	(0.127)	(0.895)	(0.198)	(0.651)	(0.218)	(0.260)
Observations	5,273	81	2,763	120	1,402	871
R-squared	0.027	0.240	0.082	0.101	0.066	0.103
F-test	18.32***	2.845***	30.93***	1.560	12.24***	12.33***

Source: Own elaboration

Estimated coefficients (standard errors) from the estimation. The dependent variable is SP_DEC, the total amount decided over the total planned amount. FSIZE is the logarithm of the total planned amount. GDP_g is the annual percentage growth rate of GDP. CPI is a transparency score. TIC is the tolerance index to corruption. CI_av is a corruption index. F1 is the result of factor analysis of CREDIT, TAXES and ENFORCE. F2 is the result of factor analysis of REGISTER, TRADE and INSOLV. F3 is the result of factor analysis of Start, Construct and ELECTRIC. ***, **, and * indicate significance at the 99%, 95%, and 90% confidence level, respectively.

Table 2.12 shows the results of the regression of model 2 and factors by EU Fund. The coefficient of factor 1 and factor 2 are positive and significant for column 6, ESF funds. It means that the financing and contract facilities and the reduction of taxes decreases the bureaucracy and have a positive effect on the spent amount over the total decided of ESF. But, factor 1 is negative and significant for column 1, that includes all EU Funds. This is caused by the effect of column 3 and 5, EAFRD and ERDF because factor 1 has a high negative impact on them. Probably, when the bureaucracy decreases, there isn't enough regulation and part of the investment is discounted for transactions that are no longer necessary in this way, which could mean a less amount spent over decided.

Figure 2.9 shows an area with all the EU Funds projects by the ratios decided over planned and spent over decided. Most of the projects are situated in the right part of the Figure, which means that have been decided a high amount over the total planned but a lower amount over decided have been spent of each project.

Figure 2.9. Graph SP_DEC - DEC_PL

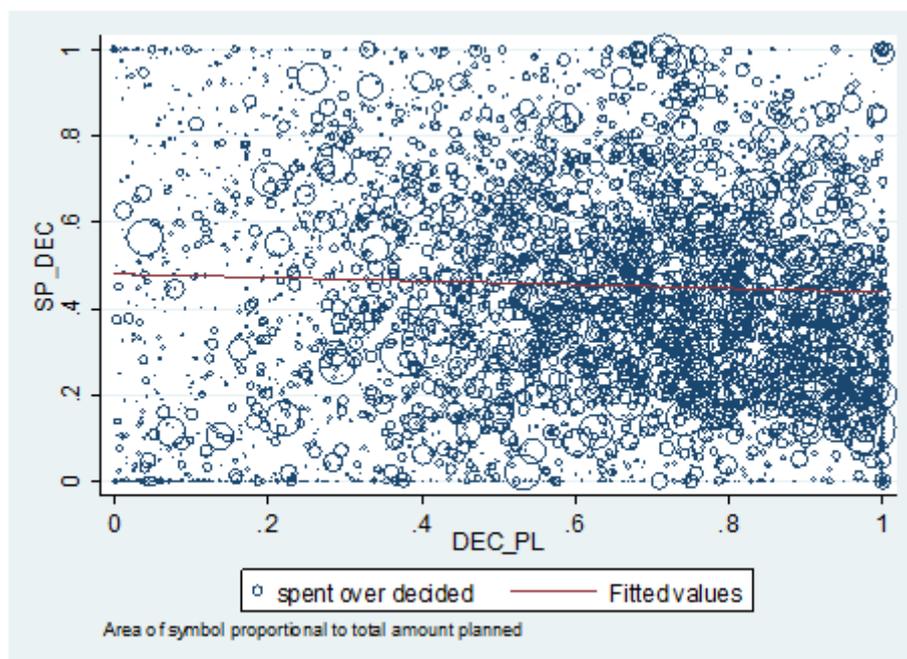
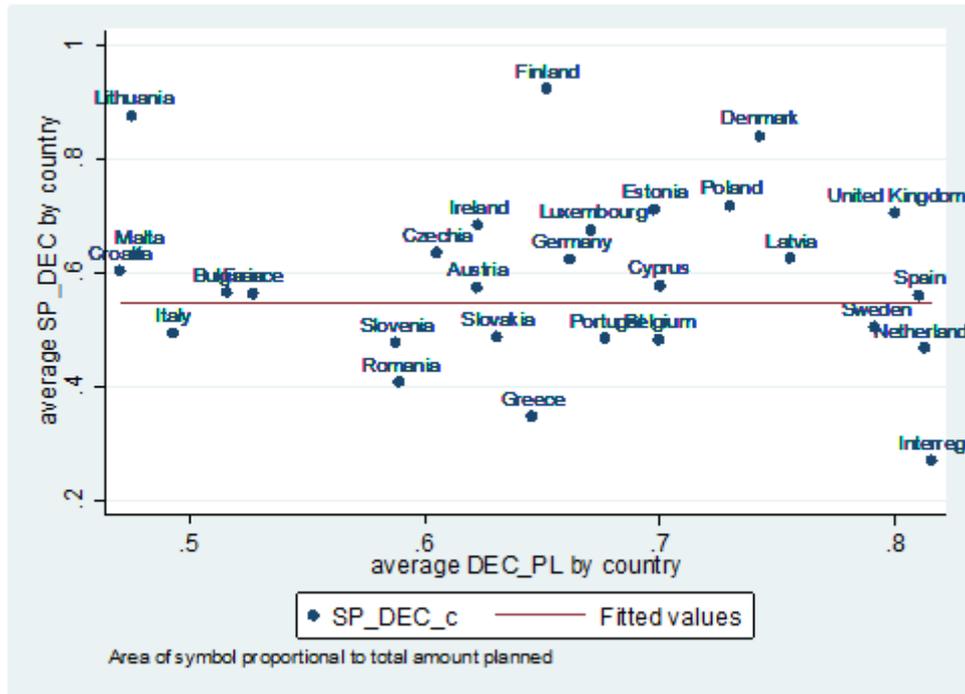


Figure 2.10. Graph average SP_DEC - DEC_PL by country



Source: Own elaboration

A similar trend can be appreciated in Figure 2.10. This figure represents the average of the ratios by country. A country like the Netherlands has decided a lot of the amount planned of its EU Funds but has a lower average of the spent amount over decided. While a country as Lithuania is the opposite, with a higher level of the average spent amount over total decided, but a lower average of the decided amount over the planned one.

APPENDIX. VARIABLES DEFINITION

Variable	Definition	Source
DEC_PL	Total amount (EU+National) allocated to the projects (operations) selected by the programme managers over total decided amount (planned)	European Commission
SP_DEC	Total expenditure eligible for reimbursement, as reported by the beneficiary projects to the programmes (also referred to as total eligible expenditure) over the total amount allocated to the projects.	European Commission
FUND	Type of fund: 1-CF, 2-EAFRD, 3-EMFF, 4-ERDF, 5-ESF, 6-YEI	European Commission
FSIZE	Logarithm of the total planned amount	European Commission
GEO	Geographic dimension: 1-international, 2-national, 3-regional	European Commission
CATEG	Category of region: 1-more developed; 2-less developed; 3-transition; 4-outermost	European Commission
GDP_g	Annual percentage growth rate of GDP at market prices based on constant local currency.	World Bank
CPI	Corruption perception index gives a transparency score to each country,	transparency.org
TIC	Tolerance index to corruption from item QB14T of Eurobarometer 502.	World Bank
CI_av	Corruption index from item QB15 of Eurobarometer 502.	World Bank
DB	Ease of doing business rank. Is an average of the following:	Doing Business
START	Rank-Starting a business	Doing Business
CONSTRUCT	Rank-Dealing with construction permits	Doing Business
ELECTRIC	Rank-Getting electricity	Doing Business
REGISTER	Rank-Registering property	Doing Business

CREDIT	Rank-Getting credit	Doing Business
PROTECT	Rank-Protecting minority investors	Doing Business
TAXES	Rank-Paying taxes	Doing Business
TRADE	Rank-Trading across borders	Doing Business
ENFORCE	Rank-Enforcing contracts	Doing Business
INSOLV	Rank-Resolving insolvency	Doing Business
F1	The result of factor analysis of CREDIT, TAXES and ENFORCE	Doing Business
F2	The result of factor analysis of REGISTER, TRADE and INSOLV	Doing Business
F3	The result of factor analysis of START, CONSTRUCT and ELECTRIC	Doing Business

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