Ripples in a Rising Tide: Why Some EU Regions Receive More Structural Funds Than Others Do

by

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Abstract
We investigate the distribution of European Union (EU) Structural Funds across EU regions. We draw from literature concerning the political economy of national intergovernmental grants, and regarding the EU’s two-tiered bargaining process. Bargaining over the distribution of Structural Funds takes place between regions and their respective national governments, but is also influenced by bargaining that occurs on an intergovernmental level. We test our claims with a data set containing the distribution of Objective-1 and Objective-2 funds across EU regions, as well as other economic, institutional and electoral variables. Adjusting for selection bias, we find that the official allocation criteria are not sufficient determinants for explaining the distribution of regional transfers. For Objective-2 they may even be said to bear the opposite sign. Moreover, federalist regions and those with stronger electoral competition receive significantly more transfers than other regions.

Key words:
EU Structural Funds; Two-Level Games; Fiscal Federalism
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1. Introduction

The European Union (EU) is perhaps the most complicated political system in the world. Its polity changes continuously over time, causing the increased nesting of national political systems. It comes as no great surprise that political explanations have co-evolved with the EU, and have led to many different analytic approaches. Two prominent examples include intergovernmentalism (e.g., Moravcsik 1998) and multi-level governance (Hooghe and Marks 2001). Curiously, both approaches are rooted in the analysis of EU bargaining processes and, more specifically, both approaches have been applied to the study of Structural Funds policy (Pollack 1995, Marks 1996). Yet, there are important differences. While intergovernmentalists focus on the role of bargaining across member states and of redistribution across countries, scholars of multi-level governance are much more concerned with the intertwined bargaining processes that exist among the European Commission, the EU member states, and other, sub-national actors.

Let us start with a very mundane illustration: in 2004, the German Federal State of Bavaria inaugurated its new seat of representation in Brussels—an impressive building valued at some 30 million euros, and with workspace for more than thirty civil servants. By contrast, the French region Midi-Pyrénées rents just two rooms in an office building for its head of the office, a secretary, and two trainees.¹ One may wonder why regions invest in their presence in Brussels at all. The perspective of political economy that we employ in this article suggests that politically powerful regions invest money in lobbying activities in Brussels only if these investments appear to be profitable. And indeed, there is a lot for some regions to gain in Brussels—in particular in the form of Structural Funds from the EU. Although there is anecdotal evidence for pork-barrel politics on EU regional policy, a quantitative assessment of this impact has, to the best of our knowledge, never been studied in academic literature. This article is a first attempt to close this gap in the literature.

Founded at the Paris Summit in 1974 as the European Regional Development Fund, the Structural Funds’ official aim has always been to narrow the economic gap between European regions and to foster economic cohesion (Anderson 1995). There is a large body of literature dealing with the effectiveness of this form of fiscal equalization, assessing whether it has actually lead to convergence in regional income (see, for example, Boeri et al. 2002). Some economists find evidence that Structural Funds have played a role in achieving higher growth rates in poorer regions (Cappelen et al. 2003). Others assert the opposite, and think of Structural Funds rather as an EU-wide substitute for social policies (Rodríguez-Pose and Fratesi 2003; Beugelsdijk and Eijffinger 2005) or as a mechanism for compensating those regions that have not benefited from economic integration (Boeri et al. 2002, 47).

EU scholars, influenced by the theoretical debates in International Relations, focus mainly on the question of how Structural Funds policy is decided upon and governed. According to studies of multi-level governance in the EU (Hooghe and Marks 2001, 2003), actors of various political strata take part in the complex decision-making procedures of regional policymaking. They look at how the European Commission interacts directly with local authorities and social partners in order to design and monitor the Structural Funds. These IR-focused approaches

stand in contrast to the intergovernmentalist perspective, which ascribes the most important role in shaping EU regional policy to the governments of member states (Pollack 1995).

Now, as far as the actual distribution of funds across regions is concerned, both economists and political scientists take it for granted that the official criteria are the only relevant determinants. In this view, member states agree on these criteria, and the European Commission implements them in a technocratic manner (Olsson 2003). Our research shows, however, that the official criteria are not sufficient predictors of the allocation for Structural Funds, and we subsequently sketch a rationale to explain the fact that some European regions receive significantly more funds per capita than others—even if they face comparable socio-economic conditions. To restate our interest, we do not deal with the evolution of Structural Funds policy in the European Union, or with the trend towards the more regional policy that has aroused the interest of many scholars (see Moravcsik 1998, Hooghe 1996). Rather, our interest lies one level deeper, in the processes of interregional redistribution: the regional ripples in the rising tide of Structural Funds spending. It is evident, then, that we need to borrow some ideas from literature on intergovernmentalism to study, for example, the kinds of package deals struck at EU summits, as much as we need to know who the relevant actors are on the sub-national level, and how they voice their interests in the EU polity.

We use a stylized model of two-tiered bargaining, based on the political-economic literature related to national intergovernmental transfers. This model grasps the essentials of the allocation of Structural Funds by differentiating between two stages. In the first stage, member states bargain over budgetary allotment and the eligibility of regions for Structural Funds—or rather, the national shares of Structural Funds. Subsequently, regions lobby their national governments to enhance their transfers. The outcome of this second stage outlines the actual distribution of Structural Funds to each region. Since the two stages are intertwined, we use a regression model adjusted for selection bias, and investigate the empirical determinants of regional shares of Structural Fund spending.

We find not only that the official criteria are insufficient for explaining regional shares, but also that the effects are sometimes contrary to the expectations created by those criteria. This is the case for transfers to Objective-2 regions that should be distributed according to labor market needs. The less funds a region gets, the higher its unemployment rate—arguably because unemployment undermines the fiscal capacity of regions to apply for these funds. Politics plays a strong role in explaining the deviations from the technocratic criteria. Federalist regions receive substantively larger shares. There is also some evidence that electoral competition in pivotal districts leads to a higher share of regional transfers.

The article is structured as follows. We start by introducing the empirical puzzle, i.e., the variance of regional transfers. The next section surveys the political-economic literature on national intergovernmental transfers. Then we apply these approaches to EU Structural Funds policy and present a non-formal bargaining model. Next, we proceed to our set of research hypotheses. The following section describes the data set and explicates the empirical approach. Thereafter, we present and interpret the empirical results and conclude by extrapolating the broader implications for other multi-level bargaining systems.
2. The Design and Allocation of Structural Funds in Europe

On the one hand, the Structural Funds policy of the EU is an example of a complex decision-making procedure. It has served as a template for the concept of multi-level governance in which various political layers are simultaneously involved in policymaking. On the other hand, the distribution of regional transfers follows a set of fairly simple and transparent principles. To wit, Structural Funds policy is sometimes viewed in the literature as a realm of technocratic decision making that narrows the scope for autonomous and strategic politics (Bache and Olsson 1991, Olson 2003, Scott 1998). If these claims are true, then the official criteria are the only necessary determinants to explain the regional redistribution of these funds. In the following we strive to ascertain whether this claim is empirically reasonable. Our data on spending comes directly from the European Union (DG Budget). It represents the scheduled transfers in the period 2000 to 2006 according to the EU financial foresight.

The ‘Agenda 2000’ laid down the goals for this period. Its reforms reduced the existing six areas of funding—the so-called objectives—to three. The new objectives are Objective-1, for the development of regions that are lagging behind economically; Objective-2, for regions with declining industrial and rural sectors; and Objective-3, for regions in need of educational and employment-related restructuring. The Berlin summit of the European Council in 1999 set the financial agenda for the period 2000–2006, and introduced further changes to the management of the Structural Funds. For Objective-1, the official eligibility criterion stipulates that regions should have a per-capita GDP below the 75 percent average of the EU in order to receive Structural Funds. Objective-2 regions are industrial regions with an unemployment rate above the EU average and with a declining employment rate in the manufacturing sector. There are no precise official criteria defining eligibility for Objective-2, other than that the percentage of the EU population covered by Objective-2 should not exceed 18 percent. By contrast, the choice for Objective-1 is straightforward, as only those regions with less than 75 percent of the average EU GDP per capita qualify. A look at Figure 1, however, shows that there is huge variation.

Figure 1 plots the planned Structural Funds per capita for each Objective-1 region for the period 2000 to 2006 against regional GDP per capita. First of all, no points representing individual regions should lie beyond the orthogonal line indicating the 75th-percentage point. Second, all points should be associated with the straight regression line, indicating a strong relationship between GDP per capita and Structural Funds per capita. Examination of the figure, however, shows that having a low GDP per capita is a necessary but not a sufficient condition for obtaining a relatively high amount of Structural Funds. Figure 1 reveals a high deviation from the simple regression line in cases with a low GDP, but a small deviation in cases with a high GDP. Most striking is the disparate Objective-1 funding for the Portuguese regions Açores and Centro, which have a similar per-capita income. Moreover, Ireland is an outlier among the rich-

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2We would like to thank Michaele Schreyer for making the data available to us. Unfortunately, we do not have spending data for other periods. This makes it impossible to evaluate arguments about the dynamics or stability of Structural Funds.

3GDP data are not adjusted to purchasing power parities (PPP) due to consistency problems in the data. However, even GDP in PPP is an imperfect indicator of regional wealth because it does not, for example, correct for the extent of vertical or horizontal government intervention (Eurostat 2002). Moreover, GDP in nominal and in PPP terms is substantively correlated.
er Objective-1 regions. So the question remains: What other factors determine the distribution of Objective-1 funds, if the official criterion is insufficient?

Fig. 1. Eligibility of Objective-1 regions

A similar observation can be made for Objective-2 regions. Because Objective-2 consists of several hard-to-measure goals, it is much more difficult to think in terms of a dominant criterion. For the easy of interpretation, we chose the regional unemployment rate as of 1999 as a proxy for the key criterion. Figure 2 shows that, although there is evidence that regions with higher unemployment receive more funds, the relationship is much weaker than in the previous figure. Higher unemployment is associated with higher Objective-2 funding per capita, but there are important deviations from the regression line. Many cases cannot be explained by the unemployment rate alone. The Austrian regions Styria and Vienna or the German regions Saarland and North Rhine-Westphalia, for instance, have similar unemployment rates, but receive markedly different amounts of Objective-2 funding per capita. To be sure, Objective-2 is distributed on a more disaggregate level. Hence, the pattern may also be due to intraregional heterogeneity. However, this effect is unlikely to be strong enough to explain the digressions (Overman and Puga 2002). Figures 1 and 2 contradict the claim that Structural Funds allocation corresponds to sober technocratic rules. This begs the question: if technocratic standards do not account for Structural Funds allocation, then what other determinants drive these outcomes? In the first step toward solving this puzzle, we present theoretical findings from the literature of national intergovernmental grants.
3. The Political Economy of Intergovernmental Grants

It is astonishing that hardly any attempt has been made to gather insight into these matters by consulting the relevant literature on national political systems. Both political and economic studies on national federalism have traditionally focused on normative issues, such as the task of revealing what forms of governance are inefficient (Scharpf 1988; Oates 1999). In recent years, however, more and more positive explanations for intergovernmental grants have been sought (see, for example, Inman 1988). Political economy considerations are crucial, since the issues of grant effectiveness and their political determinants are mutually dependent: one cannot evaluate the former without also taking the latter into consideration. The fundamental thrust of these new approaches thus addresses why some regions are more successful in receiving grants than others. As for the European Union, most studies aim only to explain the distribution of cross-country transfers as an outcome of intergovernmental bargaining (Rodden 2002; Kauppi and Widgrén 2004; Carrubba 1997). Less, however, is known about the quantitative impact of regional politics in this process. This is why we make a brief “detour” into the literature discussing the political economy of national fiscal federalism before returning to the European level.

From a political-economy perspective, regions are unlikely to receive equal shares of public transfers—or shares in accordance with equity or efficiency considerations—if some regions with greater political clout can influence the allocation of funds, or if national policy-
makers rely on some regions more than others to muster electoral support. To start with the first claim, regions can differ both in their lobbying power and in their institutionalised political clout. Cadot, Röller and Stephan (forthcoming) argue that asymmetrically distributed lobbying groups can attract higher transfers to their regions by making campaign contributions to local politicians who, in turn, press for increased grants on the national level. A concentration of political power in the hands of a few minority groups can increase the grants (c.f. Becker 1983; Winden 1999). Moreover, local politicians themselves differ in the extent to which they lobby the national government, as literature on intergovernmental grants in Norway (Sørensen 2003) and the United States (Grossman 1994) shows. One problem with most of these analyses is that there may be externalities across regions. The more pronounced this effect is, the fewer incentives there are for local politicians to lobby hard (Borck and Owings 2003).

Institutional factors that enhance the lobbying power of local politicians include the size of and the number of seats of an electoral district (Grossman 1994; Worthington and Dollery 1998) and the voting power of the regions involved (Ansolabehere, Gerber, and Snyder 2002). The institutional setting is more complicated in the EU, as the lower-level tiers of the national political systems are relatively heterogeneous. One important point that could be drawn from this literature comes in the fact that regions that have legal power in federalist systems should have a higher institutional capacity to lobby, compared to regions within highly centralized political systems.

A second strand of the literature focuses on the preferences of national politicians rather than the resources of local politicians. The idea is that national politicians equalize marginal costs—that is, transfers to a region—through marginal benefits, predominantly in the form of higher electoral success. Assuming that central governments depend on local electoral support or money, national politicians will allocate funds to either political strongholds (Levitt and Snyder 1995, 1997) or to those regions where the level of electoral competition is highest (Dixit and Londregan 1998). In Sweden, for instance, such electoral concerns govern the determination of regional funds (Johansson 2003).

One problem with the simple swing-voter hypothesis is that it does not seem to fit equally well for all democratic systems. In multiparty or multidimensional settings, a median voter is less likely to exist, and this increases the number of swing-voters. It is therefore primarily applicable for the classic (majority) first-past-the-post electoral system, in which votes for candidates other than the winning candidate are essentially lost. The argument, however, may be extended to other systems as well, since higher electoral competition and more pliable voters should enhance parties’ campaigning efforts even in proportional systems (McGillivray 2004). Accordingly, Crain and Oakley (1995) have found evidence that voter volatility and legislative stability are important predictors of the size of regional transfers.

A different approach would be to assume that partisanship plays a role in the preferences for greater spending. Grossman (1994), for instance, finds that U.S. regions in which the Democratic party is dominant received more transfers than other regions. Again, the empirical record of this proposition is mixed. In Germany, for instance, it seems instead to be the partisan congruence between the national and the regional level that causes such variance (Kemmerling and Stephan 2002): in those federal states where the same partisan composition of governments prevails, grant size is significantly higher than in other regions.
These findings are important in understanding the politics of EU Structural Funds, although some caveats apply. Certainly, the EU is not directly comparable to a national political system. As mentioned in the previous section, the European Commission has a good deal of discretionary leeway in allocating funds because member states do not act unanimously. We argue, however, that the assumption of a unitary actor is not relevant when addressing the pork-barrel politics of EU Structural Funds (Wallace 1997; De Rynck and McAleavey 2001). Even if national governments or the European Commission were the only decision-making body in allocating Structural Funds across regions, it would still be vulnerable to lobbyists from sub-national political entities.

Hence, the same logic applies in a politically fragmented, supranational entity as long as the number of EU regions is high and competition among them prevails. In this case, regions do not completely internalize the fiscal burden of higher transfers and, therefore, might have an interest in lobbying. However, if regions overcome the problems of collective action, our argument could break down. Indeed, the literature on intergovernmental grants has traditionally neglected strategic issues of coalitions and block-building. We do not have a definite answer to this problem, but it suffices to say that incentives for interregional cooperation are limited, given the nature of the EU Structural Funds. Indeed, most of the efforts of national representatives in, say, the Council of Ministers would spill over to other, non-lobbying regions as well: “a rising tide lifts all boats.” In line with the literature on national political systems, this approach does not deal with the general trend of public spending, but rather with the distribution of the funds once the budget envelope is sealed. Hence, we are not interested in the rising tide of EU structural policy, but rather in the “ripples” between winning and losing regions in this process.

4. Bargaining on Structural Funds Policy as a Two-Stage Process

In the study of EU cohesion policy, much effort is put into explaining who the relevant actors are, and how much power they have to push through their interests. This naturally prompts an investigation of the institutional process, which is highly complex in the case of EU structural policy. Actors at three levels are involved in both the formulation and the implementation processes for the Structural Funds. Whereas intergovernmentalist accounts point to the strong role that national governments have in decisions about the overall budget (Pollack 1995), models of “multi-level governance” hold that the European Commission and sub-national authorities bypass national governments when determining Structural Funds politics (Hooghe and Marks 2001). One reason for the lack of consensus among scholars is that the governance of Structural Funds has been evolving over the last two decades as a result of three major reforms in 1988, 1992–1993 and 1999 (Bache 1998; Bailey and De Propris 2002).

For the period 2000 to 2006, the distribution essentially follows a two-stage process. After the European Council roughly establishes the total budget for each objective, the European Commission provides a breakdown of member states delineating “commitment appropria-

\[5\] The discussion of the so-called statistical effect on the verge of EU enlargement is a good example. There is arguably an incentive for East German Länder to cooperate against their own government in order to maintain their grants. However, the outcome would affect all regions with a similar GDP level. Hence, cooperation between regions is more likely if the total amount of EU structural policy is in question, but less so if the distribution of these funds is at stake.

The technocratic nature of this breakdown requires that the Commission use “transparent procedures” such as eligible population, regional prosperity, national prosperity, and severity of structural unemployment for Objectives-1 and -2. Nevertheless, national governments continue to have their say at this stage, because they put forward a list of regions to be negotiated with the Commission (Hooghe and Marks 2001, 97; Gualini 2003). An example of this can be seen in the “phasing out” of regions that have lost their Objective-1 status, such as Ireland in Figure 1. A list of exemptions serves as “phasing-out” criteria, but these are not clearly stated or defined.

The second phase is the so-called structural programming phase, in which the member states develop a plan for Objectives-1 and -2 in close cooperation with regional authorities and social partners. The regional development plans include a description of a region’s structural deficits, a statement of the appropriate ameliorative strategy and priorities, and an indication of the planned use and form of the financial contribution. Member states must compile a selection of eligible Objective-1 and Objective-2 regions with corresponding financial allocations. Sub-national authorities have some say in both the selection of the regions and the elaboration of the plans, since they have the right to express their views within a certain period of time. While national policy networks vary by country, this stage implies bargaining between national governments and sub-national authorities without the inference of the European Commission (Hooghe and Marks 2001, 100; Gualini 2003).

The two-stage procedure suggests a sequential logic for an analytic interpretation of the bargaining. This interpretation corresponds to a simple two-level bargaining model (Putnam 1988). In the first level of bargaining, member states, and possibly the European Commission, negotiate the total budgetary envelope of Structural Funds for each country. The second level of bargaining takes place between the member states and their various regions. Except for case studies—such as those by Gualini (2003) and Blom-Hansen (2005)—the literature has not dealt extensively with this level of bargaining.

The link between the two processes rests, arguably, in the selection of regions qualifying for Structural Funds, since this determines the size of national budgets. To simplify the following analyses we focus on the impact that regional politics has on the size of regional transfers, the national shares of Structural Funds having been negotiated. Making this assumption allows us to abstain from dealing extensively with the various package deals between agricultural, cohesion and structural transfers, as well as from the debate about the net payment position of countries. Empirically this assumption is justified, since the 1999 Berlin summit yielded an agreement on the national distribution of Structural Funds, and yet the precise regional allocation of Structural Funds was negotiated afterwards.

Having delineated our theoretical understanding of the bargaining process for Structural Funds, we are now ready to develop our hypotheses on the determinants. We will start with the first level of analysis—namely, the selection of regions. The official, technocratic criteria should have a clear impact on whether or not a region qualifies for Structural Funds. Regions with lower GDP per capita should be entitled to higher amounts of Objective-1 funding, whereas regions with higher unemployment rates should receive greater Objective-2 funding. As Figures 1

7 Article 7 (3) of Council Regulation 1260/1999.
8 The structural programming phase is set out in Articles 13, 15 and 16 of Council Regulation 1260/1999.
and 2 show, however, this correlation is only partial. We make the additional assumption that 
the bargaining in the initial stage is dependent on other budgetary positions, particularly in the 
area of Common Agricultural Policy (CAP). Countries receiving high amounts of CAP transfers 
will obtain a smaller amount of Structural Funds than others do. Hence, bargaining processes at 
the intergovernmental level lead to well-documented cases of package and compensation deals 
(Moravcsik 1998, 258). Other approaches have focused on related but different issues, such as 
the net payment position, or public opinion (see, for example, Carrubba 1997). In our framework 
we suspect that these variables are the most important ones, however.9

For the second stage of analysis, we retain the main criterion for each funding type—CAP 
per capita for Objective-1 and unemployment rate for Objective-2—since these determinants can 
still have an impact on the distribution of Structural Funds. In addition, we “plug in” the find-
ings of literature on intergovernmental grants: integrating them into the two-level process. The 
central governments’ responses to regional lobbying activities should depend on a number of 
political factors. First, we know that the influence of regions seems to be dependent on the con-
stitutional competencies that they possess (Jeffrey 1996; Ansell, Parsons, and Darden 1997). 
Thus, regions in federal states are more influential in the bargaining process than their counter-
parts in unitary states. On the regional level, constitutional competencies give rise to regional 
political infrastructure that is conducive to lobbying and political pressure. The Ministers Presi-
dents of the German Länder, for instance, managed to block reduction in SF spending at the 1999 
Berlin Summit, despite of the central government’s resolution to do so (Heinelt, Kopp-Malek, 
and Lang 2005, 179).

A second major hypothesis from the previous section involves the idea of swing voters, 
or more generally, the intensity of electoral competition. The closer the two main parties are in 
the run-up towards the election, the higher the stakes are for central governments to win this 
constituency. This means that governments have an incentive to channel more transfers into a 
region in which electoral competition is greater. This effect is diluted in proportional systems 
with transferable votes. At the same time, proportional systems can lead to higher fragmenta-
ton of the party system, which is likely to reduce the political clout of a region. If partisan ties 
between different representatives of a region and the national level are strong, this could serve 
as a reinforcement of the role of local politics for national decision makers. We expect regional 
transfers to be higher in cases where the same party wins the national and the European Par-
liament elections.

In summation, the outcomes of the first bargaining period depend on formal criteria, 
such as per-capita income or the unemployment rate for Objective-1 and Objective-2 regions, 
and the budgetary position (CAP funding) of a country. These criteria determine which regions 
will gain access to funds. Once an outcome has been reached for the first stage, the central gov-
ernment bargains with the regions over subsequent allocations. We argue that the results of the 
second stage are driven not (only) by technocratic and transparent rules, but mostly by “po-
itical-economic” factors such as partisan politics and lobbying activities. Table 1 gives an over-
view of our hypotheses with the expected signs of the coefficients.

9The level is also likely to depend on other package deals, most notably as a means of exchange for poorer 
regions consenting to deepening economic or monetary integration. Given our data set, we were unable 
to find any significant relationships in that respect.
Table 1: Hypotheses

<table>
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<tr>
<th>Theory</th>
<th>Hypothesis</th>
<th>Expected Sign forObj. 1/ Obj. 2</th>
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<tr>
<td><strong>Eligibility of Regions (First Stage)</strong></td>
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<tr>
<td>Income</td>
<td><em>H1</em>: The higher the income per capita in a region, the less likely it is for the region to receive Structural Funds.</td>
<td>–/?</td>
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<tr>
<td>Unemployment</td>
<td><em>H2</em>: The higher the unemployment rate in a region, the more likely it is for the region to receive Structural Funds.</td>
<td>?/+</td>
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<td>Agricultural funds</td>
<td><em>H3</em>: The higher the agricultural funds per capita in a region, the less likely it is for the region to receive Structural Funds.</td>
<td>–/–</td>
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<tr>
<td><strong>Allocation of Structural Funds per Region (Second Stage)</strong></td>
<td></td>
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<tr>
<td>Federalism</td>
<td><em>H4</em>: The more political competencies a region has, the more Structural Funds transfers per capita the region receives.</td>
<td>+/+</td>
</tr>
<tr>
<td>Electoral competition</td>
<td><em>H5</em>: The closer the two major parties in a region, the more Structural Funds transfers per capita the region receives.</td>
<td>+/+</td>
</tr>
<tr>
<td>Corollaries</td>
<td><em>H4</em> and <em>H5</em> depend on the effective number of parties and the congruence between national and European Parliament elections.</td>
<td>–/+</td>
</tr>
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Given the two-stage process of Structural Funds allocation, one caveat seems in order. The first (interstate) level naturally shapes the ultimate outcome of the second (regional) level. Central governments and their regional counterparts can only distribute the Structural Funds budget, which has already been granted to the member states at the first bargaining level. Any attempt to estimate empirically the regional Structural Funds allocations must account for the results of the first bargaining level in order to avoid biased results. In the next section, therefore, we present the so-called Heckman selection model as a means to deal with this problem.

5. Operationalization and Specification

We argue that the region selection process (the first level of bargaining) has an impact on the political influence process of regions (the second level of bargaining). Hence, information about a region’s participation matters when determining the size of prospective transfers. This is a clear example of sample selection bias in political science. Hug (2003, 263) discusses the set of different model alternatives to use in such cases. He pleads for a truncated regression if “important omitted variables influence simultaneously the selection into the incomplete data set and the dependent variable of the outcome equation.” As argued above, however, it is more
reasonable to assume that both negotiation processes differ. The political-economy approach for intergovernmental grants states that regions bargain not over the total amount of transfers, but rather over the allocation of these transfers. We therefore assume that the first level of bargaining has an influence on the second level, but not vice versa. In such cases, a Heckman selection model is the most appropriate tool for exploring both processes simultaneously (Heckman 1979).

The general problem of selection bias exists if some observations are missing, or if they have zero values. This is the case for our dependent variable, as most regions do not receive any transfers at all. Under these circumstances, the classic assumptions of a linear regression model fail to properly account for the situation, and the resultant estimates are biased. If the selection process for regions that do receive transfers differs from the process that determines the size of these transfers, this bias can be estimated in a first stage—the so-called “selection process.” The model generally used to generate an estimate of the bias is a probit model on a dummy variable that reflects whether a region has received funds or not. In the second stage, the size of the funds is estimated on the basis of the exogenous determinants and the estimated bias. The exogenous variables of the first and second stages are allowed to differ. While this model has become increasingly popular in comparative politics (see, for example Hug 2003; Plümper, Schneider, and Troeger 2006), it is not without its shortcomings, since the results are sensitive to the set of exogenous variables included. Because alternatives—like the so-called two-part model by Manning, Duan and Rogers (1987)—do not really alleviate this problem, we prefer to stick with the “workhorse” employed by most social scientists, addressing selection bias in two-stage processes. We use a standard (LR) test to decide whether there is truly a selection bias in the data or not.

For our dependent variable we use data on Structural Funds gleaned from the European Commission (cf. above), which represent the financial perspective of the distribution of Structural Funds for the years between 2000 and 2006. We extracted information on funding for Objectives-1 and -2, which are the only fiscal transfers that can be attributed to individual regions, but which account for more than two-thirds of all regional transfers. The data, however, do not report the Structural Funds on the same level of aggregation for all countries; in some instances they use NUTS 1, NUTS 2 or even the national level (NUTS = Nomenclature des Unités Territoriales Statistiques). This is attributed to the administrative structure of each member state. Ireland, for instance, counts as a single Objective-1 region, whereas the German Länder (NUTS 1) constitute Objective-1 subjects. In France, the recipients of Objective-1 funding are the Régions (NUTS 2). All told, we have gathered information for a total of 137 regions in the EU. Only forty-

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10 Technically, the bias depends on the size of correlation \( \rho \) between the residuals of the first and second stages.

11 The NUTS classification (Nomenclature des Unités Territoriales Statistiques) distinguishes between three hierarchical regional levels, which do not necessarily coincide with real administrative units. NUTS 1 represents the highest administrative level: the Länder in Germany, the Zones d’Etudes et d’Aménagements du Territoire in France and the Government Office Regions in England. They comprise a population of between 3 and 7 million people. NUTS 2 entails a regional level with 0.8 to 3.0 million inhabitants. It corresponds to Regierungsbezirke in Germany, Régions in France and counties in England. The lowest level is NUTS 3, with 0.15 to 0.80 million inhabitants. These are German Kreise, French Départements, and upper-tier authorities or groups of lower-tier authorities in England.
nine of 137 Objective-1 regions were eligible for Structural Funds between the years 2000 and 2006. The number of Objective-2 regions is much smaller (thirty-nine).

In accordance with the Structural Funds data, we compiled a data set on potential determinants of Structural Funds for the regional level. We distinguish between independent variables for the first and second stages. First-stage variables determine the eligibility of a region for Objective-1 or Objective-2 funds. The major selection criterion for Objective-1 regions is GDP per capita (Eurostat 2001). There are, of course, huge differences between regional wealth levels in Europe, and it is obvious that Alentejo and Galicia (with a per capita income of 6700 € and 11000 € respectively) are more likely to receive SF than Flanders, Alsace, or Emilia-Romagna (which are all above 20000 € per capita). For Objective-2 areas, the corresponding official determinant is the unemployment rate (Eurostat 2001). Some European regions fare well and demonstrate low unemployment rates (for instance, Styria and Veneto have unemployment rates below 5 percent). Many regions, however, have persistent unemployment rate higher than 10 percent, which makes them potential candidates for Objective-2 funding. We also employed other proxies for unemployment or the decline of a region, but the results were much weaker.

A third independent variable is European agricultural funds per capita. For this purpose we used officially available data on CAP funds per capita. Because these funds are available only on a national level, we weighted the transfers with the regional proportion of people employed in the agricultural sector relative to total employment (Eurostat 2001). As mentioned above, the rationale behind this variable rests in the idea that either Objective-1 or Objective-2 funds may serve as a political substitute for agricultural subsidies. A case in point can be found in several French low per capita income regions (such as Auvergne, Bretagne, and Aquitaine) that receive no SF but have high shares of employees in agriculture, and therefore receive higher CAP transfers. Ideally, one would also want to model a compensation deal between Objective-1 and Objective-2 funds, but for econometric reasons this has not been possible. We also experimented with a dummy to reflect the situation of countries that receive Cohesion Funds, but we have suppressed the results, because none of the regressions were affected by this dummy.

Our second-stage variables predict the fund allocations for those regions which qualified for eligibility in the first stage. We decided to maintain the official criteria for both Objective-1 and Objective-2 regions—that is, GDP per capita and the unemployment rate—respectively. It is likely that both variables also determine the size of transfers, and that we can weigh the importance of these criteria with other independent variables. To test our assumption about whether regions in federal states receive more Structural Funds, we used Lijphart’s (1999) index of federalism. The index varies between 1 and 5, with 1 depicting unitary and centralized states and 5 indicating federal and decentralized states: Belgium, Germany and Austria being the most federal, and Portugal and the United Kingdom the most centralized states.

To model the influence of electoral competition we used elections results. We gathered regional information on the 1999 European Parliamentary elections, which were the last before the budgetary period. We were able to retrieve regional election results for a total of 117 out of 12

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12The reason is that very few regions receive both transfers. Most regions are given either Objective-1 or Objective-2 funding. Only Scotland, Wales, South West, North West and Merseyside and Yorkshire receive both Objective-1 and Objective-2 funding. The correlation between Objective-1 and Objective-2 regions in the full sample is -0.302.
the 137 regions. We constructed eight categories, one for each of the eight factions represented in the European Parliament, in order to facilitate comparison across regions. There is an additional category for parties that are not aligned with any faction. For each region we then summed up all the shares of parties belonging to the same faction. We also used information on the share of the largest party. In order to measure the dispersion of the party system, we calculated the “effective number of parties” using the Herfindahl index for the nine categories. To measure the strength of regional party competition we created a swing-voter variable using the size of the difference between the two largest parties in a region. The rationale behind this variable rests in the fact that political competition should be strong where the difference between the first two parties is small.

Using data for European Parliament elections is clearly not above criticism. Ideally, one should use data for national elections from the regional level as well, since European Parliament elections are haunted by low political salience and often act as a playground for exerting political protest against incumbent governments (Van der Eijk, Franklin, and Oppenhuis 1996). For this reason, we compared regional electoral results for the European Parliament elections in 1999 with regional results for elections of national parliaments that immediately preceded the European Parliament election. The data come from Caramani (2000) and were updated where possible. A comparison between both sets of electoral data shows that the election results for European Parliament and national elections are highly correlated. Consequently, the cross-regional variation of vote shares for party families is much stronger than the temporal variation between national and European Parliament elections. Since it is easier to match electoral districts for elections to the European Parliament with structural transfers, we stick to this indicator. Literature has also shown that agricultural and regional transfers are an important topic for European Parliament elections (Mattila 2001). European distributional concerns matter for voters’ decisions.

6. Empirical Analysis

Table 2 presents the results. We run each model specification for both Objective-1 and Objective-2 regions separately, since we predict that each type of funding may be driven by different independent variables. The top half of the table shows the regression results for the first stage of the Heckman model (the selection stage); the lower half gives the results for the second stage. In Models 1 and 2 we are mainly interested in what drives the selection of regions for Objective-1 and Objective-2 funding. We include GDP per capita and the unemployment rate in the second stage for Objective-1 and Objective-2, respectively, in order to run the Heckman model. In Models 3 and 4 we test for our institutional variables of federal structure (federalism) and effective number of parties. The effective number of parties is on the one hand an institutional proxy, because electoral institutions determine the number of parties to a certain extent; at the same time, however, it is also a variable of the party system. Models 5 and 6, finally, are a model specification for the degree of electoral competition, including the effective number of parties and the difference in votes between the two largest parties.

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13We were not able to find compatible information for the Netherlands, Finland or Portugal.
14The effective number of parties is defined as the number of effective parties. The corresponding formula is \(1/\sum i^2\), where \(i\) depicts the percentage share of each party.
15Appendix 1 shows the summary statistics of our variables, Appendix 2 the correlations between independent variables.
**Table 2: Results for Objective-1 and Objective-2 Regions (Heckman Selection Model)**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>1 (log)</th>
<th>2 (log)</th>
<th>3 (log)</th>
<th>4 (log)</th>
<th>5 (log)</th>
<th>6 (log)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Stage: Selection of Eligible Regions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP per capita (log)</td>
<td>-5.548*** (-3.68)</td>
<td>1.728 (1.55)</td>
<td>-6.447*** (-4.27)</td>
<td>1.331 (1.09)</td>
<td>-6.367*** (-4.14)</td>
<td>1.541 (1.27)</td>
</tr>
<tr>
<td>Unemployment rate (log)</td>
<td>0.231 (0.44)</td>
<td>-1.144** (-2.77)</td>
<td>-0.053 (-0.1)</td>
<td>-1.25* (-2.52)</td>
<td>-0.016 (-0.03)</td>
<td>-1.157* (-2.28)</td>
</tr>
<tr>
<td>CAP transfers per employee in agriculture (log)</td>
<td>-0.08 (-0.25)</td>
<td>0.325 (1.07)</td>
<td>0.217 (0.77)</td>
<td>0.449 (1.35)</td>
<td>0.178 (0.64)</td>
<td>0.409 (1.31)</td>
</tr>
<tr>
<td>Constant</td>
<td>53.164*** (3.63)</td>
<td>10.39 (-1.57)</td>
<td>61.516*** (4.18)</td>
<td>-12.656 (-1.12)</td>
<td>60.789*** (4.04)</td>
<td>-14.783 (-1.29)</td>
</tr>
<tr>
<td><strong>Second Stage: Structural Funds Allocation to Eligible Regions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP per capita (log)</td>
<td>-1.635** (-3.25)</td>
<td>-2.124** (2.74)</td>
<td>-1.865 (-1.71)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment rate (log)</td>
<td>0.195 (0.34)</td>
<td>0.335 (0.42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federalism</td>
<td>0.1471* (1.97)</td>
<td>-0.076 (-0.97)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective number of parties</td>
<td>-0.102 (-0.7)</td>
<td>0.141 (1.11)</td>
<td></td>
<td>-0.185 (-1.34)</td>
<td>0.018 (0.13)</td>
<td></td>
</tr>
<tr>
<td>Difference between two largest parties</td>
<td></td>
<td></td>
<td>-0.377 (-0.77)</td>
<td></td>
<td>-3.4** (-2.82)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>22.173*** (4.79)</td>
<td>2.8** (3.13)</td>
<td>26.691*** (3.91)</td>
<td>-12.656 (-1.12)</td>
<td>25.133* (2.55)</td>
<td>3.491* (2.39)</td>
</tr>
<tr>
<td>N (uncensored N)</td>
<td>126 (43)</td>
<td>126 (39)</td>
<td>120 (37)</td>
<td>122 (35)</td>
<td>120 (37)</td>
<td>122 (35)</td>
</tr>
<tr>
<td>Wald $\chi^2$ (whole model)</td>
<td>10.57** 0.12</td>
<td>25.62*** 2.26</td>
<td>22.24*** 11.02*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\rho$</td>
<td>-0.337</td>
<td>-0.014</td>
<td>0.854</td>
<td>-0.121</td>
<td>0.835</td>
<td></td>
</tr>
<tr>
<td>$\text{Atanh } \rho$</td>
<td>-0.351</td>
<td>1.331**</td>
<td>-0.014</td>
<td>1.272***</td>
<td>-0.121</td>
<td>1.204**</td>
</tr>
<tr>
<td>LR test of indep. [$p &gt; \chi^2$]</td>
<td>0.79</td>
<td>11.40***</td>
<td>0</td>
<td>27.43***</td>
<td>0.12</td>
<td>11.72***</td>
</tr>
</tbody>
</table>

Coefficients of Heckman procedure; z-values parentheses; * $p<0.05$ ** $p<0.01$ *** $p<0.005$

We start with a discussion of model fits, in order to justify the choice of the Heckman model and to assess the quality of our results. The incidence of selection bias can be tested by examining whether the error terms of regressions in the first stage and the second stage are statistically correlated. $\rho$ is a measurement of how strongly the bias of the second stage variables...
depends on the first stage. If it is significantly different from zero, selection bias is present and the use of the Heckman model yields better estimations than OLS-based techniques. Although \( \rho \) is between -1 and 1 for all models, it is significant only in the estimations for Objective-2 regions. This is primarily due to the strong influence that GDP per capita has for both the eligibility and the final allotment for Objective-1 regions. If we drop GDP per capita from the second stage variables for Objective-1 regions, \( \rho \) also becomes significant. The LR test shown in the table corroborates the idea that—at least for Objective-2 regions—our selection model is necessary, as simple estimates would be biased and inefficient. The test statistic for the overall model (Wald \( \chi^2 \)) is highly significant in all cases except for Models 2 and 4, which are misspecifications for Objective-2 regions. We also calculated the variance inflation factor of the independent variables and found no remaining problems of multi-collinearity.

The first two models show that the selection of regions for Objective-1 funding is basically driven by regional per capita income, whereas the selection of Objective-2 regions is determined by the regional unemployment rate. GDP per capita keeps its negative sign and its significance level in Models 1, 3 and 5 respectively. Likewise, the sign and significance of the unemployment rate remain robust throughout Models 2, 4 and 6.

The sign of the coefficients of the unemployment rate in the first stage in Models 2, 4 and 6 reveals a perverse effect, however: The higher the unemployment rate in a region, the less likely it is to receive Objective-2 funding. We do not have a decisive interpretation for this phenomenon. It might be attributable to the fact that Objective-2 funds are so-called matching grants, which require regional co-financing. Those regions with high unemployment are less able to provide the necessary resources for co-financing funds. However, it might also be due to data quality. Unemployment rates in a given region and year do not accurately depict the long-term level of unemployment for an Objective-2 region. Yet, as a proxy variable it is not too bad across European regions. We conclude that the incidence of unemployment is a much more ambivalent criterion than previously expected: it increases the need for Structural Funds, but also decreases regions’ capacities for actually acquiring them. This coincides with the observation made by Olsson (2003), that employing Structural Funds as matching grants favors more developed regions. We conclude that both variables drive the selection of Objective-1 and Objective-2 regions to a substantial degree. As far as agricultural transfers per employee in agriculture are concerned, we find no corroboration for agricultural funds as a package deal for Structural Funds. The coefficient is far from being significant, and the positive sign shows that Structural Funds tend to complement agricultural funds rather than a trade-off, if at all.

Models 3 and 4 assess the impact of institutional factors on the final financial allotment for eligible regions. The number of observations differs slightly between Objective-1 and Objective-2 regions due to a lack of data for some regions. Moreover, in Model 3 federalism proves to be a second determinant for the amount of Objective-1 funds for eligible regions, whereas the effective number of parties has no influence. As for federalism, the results corroborate our suspicion that the lobbying capacities of federalist regions are higher. This result explains the pattern in Figure 1. The eligibility of German regions for Objective-1 funding is strongly linked to the marked federal autonomy they have. Our finding thus corresponds to the results of case studies (Jeffrey 1996).

As far as Objective-2 regions in Model 4 is concerned, neither of the two institutional variables exerts an influence on fund allocation, and the unemployment rate does not either.
One reason for the lack of influence of federalism lies in the fact that Objective-2 regions do not coincide with administrative units, and are instead (industrial) sub-units of regions. Lobbying for Objective-2 funds for industrial regions in decline might not only be in the interest of the respective regions, but may also be in the interest of the whole nation-state, which would reduce the impact of federalism. We also controlled for the fact that some countries, such as Ireland, cannot be disaggregated into regions. Our dummy for countries with no regions is significant in both estimation stages for Objective-1 regions, but does not substantially change the results. The effect of federalism becomes even stronger, whereas the results for Objective-2 regions remain stable when including the dummy. Thus, we dropped the dummy from the estimations. We also experimented with dummy variable for cohesion countries which did not turn out to be significant.

In Models 5 and 6 we include the differences in European election votes between the two largest parties—as an indicator for electoral competition—along with the effective number of parties. As for Objective-1 regions, the difference between the two largest parties has no explanatory power for the final Structural Funds allocations. For Objective-2 regions, however, party difference is negative and highly significant. As expected, the smaller the difference between the two largest parties of a region, the higher the amount of Structural Funds that region receives. In Figure 2, Sweden (for which we have data only on the aggregate level), Saarland and Styria, for instance, are all above their expected Objective-2 share if the unemployment rate is identified as the decisive selection criterion. But these three regions faced stiff partisan competition with crucial portions of swing voters. In Bavaria, by contrast, the ruling Christian Social Party (CSU) has long enjoyed a large and stable majority and does not face serious challenges by other parties. Fighting for Objective-2 does not necessarily pay for the Bavarian ruling party. This is a corroboration of the role for pivotal or swing-voters on a European level.

In contrast to Objective-1 regions, Objective-2 regions are less precisely defined, and this makes those funds more vulnerable to targeted, vote-buying use, since the more technocratic allocation criteria apply even less. The struggle of Italian regions about Objective-2 allocation is a case in point. Gualini (2003, 628) reports that regional governments “agreed to autonomously redefine regional aid maps according to partisan redistributive principles” and that this “was the first overt initiative taken by the coalition of northern right-wing regional governments which had been announced during the electoral campaign as a crusade against the centre-left national government (...).” Similarly, in the 1980s the British conservative government reduced urban development funds for the city of London when it fell under Labour administration (Tofarides 2003, 81). Apparently, once a region qualifies for Objective-2 status, it can maximize funds if it harbours crucial swing-voters.

In addition, we tested whether the vote differences between national elections and European Parliament elections affected the regional allocation of Structural Funds. We used an indicator of electoral congruence for each region, employing the sum of absolute differences in vote shares for the European Parliament election and for the national election, for each party group.\textsuperscript{16} The result was significant and negative for Objective-1 regions. Due to the lack of data, it was

\textsuperscript{16}More technically, congruence (C) is defined as: 
\[ C_i = \sum_j \left| x_j^{EP} - x_j^{national} \right| \], with \( x_j^{EP} \) being results of European Parliament elections for party group \( j \) in region \( i \) and \( x_j^{national} \) the regional results of national elections.
impossible to use a Heckman model in this case, but in simple OLS regressions the congruence indicator behaved as expected. Hence, the stronger the coincidence between electoral results in national and European Parliament elections, the more likely a region is to receive Structural Funds. Finally, we also experimented with some other control variables such as voter turnout, net migration as a proxy variable for regional spill-over effects, and indicators for the strength of the industrial sector. None of these variables proved to be significant or robust.

7. Broader Implications

In March 2006 the minister president of Bavaria, Edmund Stoiber, took his entire cabinet to Brussels for a meeting. “We will come here more often,” he said, when asked about the need for his visit. He deemed it an adequate investment.\(^\text{17}\) Our main findings give some evidence to prove Mr. Stoiber right. In more general terms, we combine the idea of a two-level bargaining process with an intergovernmental and an interregional component. First, official criteria such as the 75-percent threshold are not sufficient to explain the final distribution of Structural Funds. In the case of unemployment, we could not even reject the idea that the criterion is ambivalent in its effect, for it may also decrease a region’s ability in acquiring regional transfers. Second, on the interregional level, pork-barrel politics plays a strong role in determining the amount of Structural Funds. In addition, political factors clearly influenced the distribution. Federalism, as we know, has frequently been assumed to play a role when voicing the interest of specific European regions. We find some evidence that federalist countries have a greater number of regions receiving shares of Objective-1 transfers. Finally, high levels of party competition in elections do explain some of the variation in Objective-2 transfers.

Our findings can serve to spur debate on the political economy of Structural Funds. Further research could focus on issues we chose to leave aside for theoretical reasons, such as the role of the European Commission or of the European Parliament. Moreover, due to data limitations, we were not able to analyze the dynamics of regional transfers, which could be an important issue for future research. As for the applicability of our study, we believe that, although the governance and regulation of Structural Funds has changed frequently in the last thirty years, our approach could be handily applied for looking backwards in time. It seems likely, for instance, that just as in the present, central governments have historically needed to compensate those regions that did not benefit from the process of European integration (e.g., Boeri et al. 2002). Looking to the future, our research may find even more venues for applicability, as the latest rounds of enlargement have massively changed the European polity. Given the increased level of heterogeneity, this will, in our view, arguably enhance pork-barrel politics between regions rather than reduce it. In fact, some countries seem to be in the process of strengthening the political clout of regions. The rise of regionalism in the United Kingdom is a case in point; though its roots are domestic in nature, the process will potentially lead Scotland and Wales to increase the UK’s presence in the politics of the EU (e.g. Hooghe/ Marks 2001).

From a more general perspective, our findings may have important theoretical and empirical implications. In particular, we hope that further research will deepen the links between national political-economy approaches, on the one hand, and theories of European integration and International Relations, on the other. In the analysis of international regimes, the domestic political economy of international negotiations has become an area of increasing importance.

(Milner 1998). In many instances, however, the focus lies on the politics of central governments (e.g., Gawande/Hoekman 2006, Broz/Hawes 2006). Still, most international regimes imply important redistributive concerns for sub-national regions. The state of California, for instance, is much closer to fulfilling the guidelines of the Kyoto protocol than the state of Texas. Even if the political mechanisms of these regimes operate differently from those EU Structural Transfers, the inclusion of a lower-tiered level in the analysis of intergovernmentalism might be a fruitful exercise. Governance approaches have indeed shown that sub-national actors, be they regional governments or non-state actors, are more and more involved in the politics of international bargaining. However, the political economy approach cautiously reminds us that these actors are not all alike: only powerful ones will actually have the chance to be heard.
References


## Appendix 1
### Summary Statistics for Independent Variables

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Number of jobs</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective-1 per capita</td>
<td>49</td>
<td>1088.69</td>
<td>722.08</td>
<td>60.26</td>
<td>3591.59</td>
</tr>
<tr>
<td>Objective-2 per capita</td>
<td>39</td>
<td>81.37</td>
<td>66.96</td>
<td>3.31</td>
<td>262.37</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>137</td>
<td>17663.56</td>
<td>6124.57</td>
<td>6161.83</td>
<td>42116.73</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>135</td>
<td>10.61</td>
<td>6.56</td>
<td>2.4</td>
<td>36.5</td>
</tr>
<tr>
<td>Agricultural funds per employee in agriculture</td>
<td>128</td>
<td>41.41</td>
<td>68.91</td>
<td>3.6</td>
<td>653.25</td>
</tr>
<tr>
<td>Federalism</td>
<td>137</td>
<td>2.553</td>
<td>1.597</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Effective number of parties</td>
<td>117</td>
<td>4.355</td>
<td>1.409</td>
<td>2.172</td>
<td>7.864</td>
</tr>
<tr>
<td>Vote difference between two largest parties</td>
<td>117</td>
<td>0.103</td>
<td>0.091</td>
<td>0.001</td>
<td>0.438</td>
</tr>
</tbody>
</table>

## Appendix 2
### Correlation Matrix between Independent Variables

<table>
<thead>
<tr>
<th></th>
<th>GDP per capita</th>
<th>Unemployment rate</th>
<th>Agricultural funds per employee in agriculture</th>
<th>Federalism</th>
<th>Effective number of parties</th>
</tr>
</thead>
<tbody>
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<td>Unemployment rate</td>
<td>-0.6375</td>
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<tr>
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<td>-0.0806</td>
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<td>Effective number of parties</td>
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<td>Vote difference between two largest parties</td>
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<td>0.0064</td>
<td>-0.4984</td>
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