

Going Local in the Allocation of Government Funding

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Abstract

Attempts to understand the allocation of government funding are on the increase. However, while many funds are allocated to private and public entities (e.g. companies, universities, associations, and individuals) residing at physical addresses, most studies rely on highly aggregated data at national and regional levels. Operating at a finer level of geographic resolution has advantages which are discussed and illustrated by compiling and analyzing geo-referenced data about beneficiaries of two major European Union funds in Denmark. First, I predict the number and location of funded projects with election results from polling stations. Second, I exploit the 2007 Danish municipal amalgamation reform as a source of exogenous variation and test whether numbers of funded projects close to the boundary line between treatment and control municipalities are similar. Third, I present the mobilizing effect of funding using turnout data from polling stations and the design of a survey experiment in which respondents are presented with information about funding in their local context. In sum, this paper sheds new light on the causes and consequences of EU funding and presents a range of examples which demonstrate the great potential of ‘going local’ in research on government funding.

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Introduction

All over the world governments award grants to companies, organizations, institutions, and individuals planning projects to stimulate the economy, provide public services, and attain new knowledge. Well-known examples of government funding are the federal grants in the US and the various funds of the European Union (EU) subsumed under its regional policy. Government funding usually represents a significant part of the budget. In Europe, expenditure for regional funds increased from 10 per cent of the EU budget in 1980 to more than 50 per cent in 2018. Today, EU regional funds often secure the financial survival of small and medium-sized enterprises. Given the economic significance of government funding, attempts to understand the causes and consequences of allocation are on the increase.

What is striking about much of this work is the high level of data aggregation. Most studies that address the allocation of government funding use data on the country and regional levels. However, such data do not fully reflect the granting process because government authorities allocate funds to private and public entities (e.g. companies, universities, associations, and individuals) residing at physical addresses. In this paper, I discuss potential problems related to the use of highly aggregated data about the allocation of funding including concerns about ecological validity and the modifiable area unit problem. Moreover, I point to the great potential of operating at a finer level of geographic resolution. I compile geo-referenced information about beneficiaries of two major EU funds in Denmark (2007-2013) and analyze the causes and consequences of the allocation of funding in three different ways. First, I predict the location of funded projects with data on election results from polling stations. Second, I exploit the 2007 Danish municipal amalgamation reform as a source of exogenous variation and test whether the number of funded projects close to the boundary line between treatment and control municipalities is similar. Third, I present the mobilizing effect of funding using turnout data from polling stations and the design of survey experiment in which respondents are presented with information about funding in their local context.

The paper is structured as follows. First, I briefly describe the EU regional policy and funding allocation process. Next, I present my geo-referenced data and their potential to overcome ecological validity concerns and the modifiable are unit problem.

Regional Policy

Regional policy is the EU's main redistributive policy and is aimed primarily at reducing the social and economic differences between EU regions (Bache, 2015). A large number of projects in the regions of the

EU are financed by the regional policy. Examples include the rehabilitation of the residential area Vila D'Este in the north of Portugal, the establishment of solar farms in Zielawa Valley in Poland's Lubelskie region, and a vocational school project laying the foundations for a more integrated Danish-German labor market in the Fehmarn Belt region.

Regional policy has a long history with multiple funds distributing ever-larger amounts. Having its origin in the early 1970's the policy was substantially reformed in 1988, 1993, 1999, 2006, and 2013. Content and form of the policy changed several times as a result of struggles between the Member States and the European Commission. Discussions usually concerned the definition of the policy's core objectives and their implementation (Blom-Hansen, 2005; Bachtler and Mendez, 2007). Today's regional policy covers the time period 2014-2020. It comprises five different funds which together make up the European structural and investment funds (ESIF) and redistributes around 352 billion euro to the regions of the EU. This makes the regional policy account for the single largest chunk of the EU budget in 2014-2020. In what follows, I outline the allocation process by reference to the completed funding period 2007-2013.

The process of allocating funds

Taken together, there are three stages in the allocation process. At stage one, the regional policy budget and rules for its use are jointly decided by the European Parliament and the Council of European Union on the basis of a Commission proposal. For the funding period 2007-2013, the Council adopted 'COM(2004)492: Proposal for a Council Regulation laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund'. The regulation defines the objectives, the criteria Member States and regions must meet to be eligible for funding, the financial resources available and the criteria for allocating them. Furthermore, principles and rules on partnership, programming, evaluation, management, and monitoring are outlined. Several Commission decisions accompany the regulation, for example, drawing up the list of regions and areas eligible for funding.

The three objectives defined for the funding period 2007-2013 are convergence, regional competitiveness and employment, and European territorial cooperation. Convergence aims at helping the less developed regions. It concerns the 84 regions in 17 member states whose per capita GDP is less than 75% of the EU average. 81% of the 347 billion euro comprising the regional policy budget for the period 2007-2013 are allocated to regions eligible for the convergence objective. A total of 168 regions in 19 member states are eligible for the objective of regional competitiveness and employment including transition regions and more developed regions.¹ Finally,

¹Transition regions are defined by having a GDP between 75%-90% of the EU average. More developed regions are defined by having a GDP of more than 90% of the EU average.

funding related to the objective of European territorial cooperation is reserved for transnational cooperation between regions. In sum, the three objectives highlight the EU's policy focus on innovation, the environment, adaptation to social changes, and cross-border cooperation in line with the Lisbon strategy.

At stage two, the Commission works together with the Member States to establish agreements on development needs and investment priorities. Member States draft operational programs breaking down objectives into areas for action. These can cover entire countries but also individual regions and can include cooperation programs involving more than one country. The Commission negotiates with the national authorities on the final content of the operational programs. Each program has several priorities, with related targets, depending on the development objectives of the individual member state or region.

At stage three, the programs are then carried out by the Member States and their regions. This includes selecting, monitoring and evaluating hundreds of projects. Actors eligible for funding include private and public entities, such as companies, business organizations, NGO's, educational institutions, and public authorities, among others. The case work is organized by managing authorities in each country and region. Hence, management and delivery of the programs is delegated to administrations at national and subnational (regional and local) levels. Member states must guarantee that funds are being spent effectively and in accordance with EU law. They must provide reliable accounting, monitoring and financial reporting systems and identify the responsible bodies and procedures to ensure an adequate audit trail. An authority must be designated for each operational program that provides the Commission with an audit strategy including annual audit opinions and control reports. In sum, decisions at the three stages of the allocation process of EU funding are made by European and national authorities working in unison, however, the final selection of projects on the ground is ultimately decided by domestic government authorities.

Related Literature

Distribution processes involving many actors at different levels of governance are likely to create conflicts over the allocation of resources. There is plenty of evidence pointing to biased allocation behavior meaning that government authorities give funding to politically aligned actors and units (Golden and Lucio, 2008; Sole-Olle and Sorribas-Navarro, 2008; Brollo and Nannicini, 2012; Bracco et al., 2015; Glaurdić and Vuković, 2017). Several contributions examine whether the allocation of EU funding is used in a similar manner. Studying Italy and France, Dellmuth, Schraff and Stoffel (2016) show that national executives channel disproportionate shares of funding to counties in which many of their core voters are located. Reward of voters is more pronounced in majority voting systems than under proportional representation voting systems. Similarly, Dellmuth and

Stoffel (2012) find that German Länder governments allocate more funding to districts in which electoral support for the incumbent is higher. Elaborating on this finding, Schraff (2014) points out that this is especially the case in districts with high turnout rates. Investigating the case of Hungary, Muraközy and Telegdy (2016) show that politically aligned municipalities received 16-21% higher grant value per capita in case the grant applicant was a public entity or the project concerned construction, infrastructure or public transportation. Most recent contributions suggest that funding is strategically used to increase the level of public support for the EU. Dellmuth and Chalmers (2017) find support for regions in which funding meets economic needs. In a similar manner, Schraff (2017) shows that the likelihood of Eurosceptic votes is high under insufficient compensation by regional funding.

Considering data aggregation in empirical research

In this section, I discuss concerns related to high levels of data aggregation and the potential of analyses relying on more disaggregated data to overcome such concerns. Scholars who aim to understand the allocation of EU funding usually rely on data at the regional level. This is perfectly fine as long as the research question and hypotheses target the regional level. In such cases there is a good fit between theory, design and the real-world phenomenon a researcher wants to explain. However, in many studies data aggregated at the regional level are used to infer about individuals. This raises concerns about the ecological validity of such studies which refers to the extent to which a research design reflects real-world situations.

For example, Dellmuth and Chalmers (2017) test whether individuals support the EU more if funding given to the region in which they live meets the economic demand of the region. It is expected that exposure to funding in an individual's immediate social and economic environment is likely to impact on how positive an individual feels about the EU. When it comes to the level of aggregation to capture the immediate environment of individuals the authors assume that the regional level is a good approximation of what people perceive to be their immediate social and economic context. In further consequence, the regional level is considered being the appropriate unit of analysis because funding is allocated to regions (Dellmuth and Chalmers, 2017, p. 7).

However, as mentioned previously, allocation of funding to the regional level reflects only the early stages of the allocation process. At the final stage, funds are allocated to private and public entities residing at physical addresses. This final step in the allocation process might impact on citizens perceptions. In other words, it is questionable whether the regional level is a good approximation of what people perceive to be their immediate social and economic context. Geography is certainly a straightforward way to illustrate social and economic context, however the region in which an individual lives is a large and arbitrary geographic area (Linke and

O’Loughlin, 2015; Dinesen and Sønderskov, 2015; Bisgaard, Dinesen and Sønderskov, 2016). Regions and other highly aggregated areas tend to be internally heterogeneous with regard to social and economic features. As a result, the level of exposure to funding might differ depending on where in the region an individual lives.



Figure 1: Funded projects by region (Panel A) and geo-location (Panel B)

Note: tbc

I collected data about beneficiaries of two major EU funds in Denmark which I use to underscore my argument. As a starting point, I accessed a list of funded projects from the Danish Business Authority. The list includes the names and addresses of beneficiaries who received funding from the European Regional Development Fund and European Social Fund in 2007-2013.² Next, I geocoded the addresses. Geocoding is a

² As one of the richest EU member states Denmark received a small share of the 347 billion euro comprising the EU’s regional policy

computational process of assigning a location in the form of geographic coordinates (often expressed as latitude and longitude) to physical addresses. This allows for data collection at the most disaggregated level, resulting in fine-resolution data points representing locations on the Earth's surface.

Figure 1 shows the number of projects financed across the five regions (Panel A) and the geolocation of funded projects on a map of Denmark (Panel B). Panel A shows that numerous projects are realized in all of the five regions, however, one is able to point to differences across regions. For example, most projects are realized in the region North Jutland. This is positive news for the economy of North Jutland and may also be well received by the citizens of the region. However, the distribution of realized projects illustrated in Panel B suggests that not all citizens of the region are exposed to EU funding to the same extent. This can be further illustrated by the following example. Panel C shows exposure to funding of an individual living and working in Aalborg and Panel D exposure to funding of an individual living and working in the satellite city Klarup. Areas illustrating an individual's context are represented by yellow circles.³ Panel C shows a context that contains several locations benefiting from EU funding. The context presented in panel D does not include any location that benefits from funding. Taken together, the distribution of funded projects within Denmark points to substantial internal heterogeneity within regions. As a result, individuals may differ in their level of exposure to funding which raises concerns about the ecological validity of studies that use data aggregated at high levels to capture the immediate context of citizens.

Another concern that studies using highly aggregated data are subjected to is the modifiable area unit problem (MAUP) (Openshaw and Taylor, 1979). MAUP is concerned with the possibility that different aggregations of the same data may influence the outcome. In the context of EU funding, it might be that researchers identify a relationship between preferences towards the EU and exposure to funding at the regional level which changes if we disaggregate the data. This is because aggregation has the effect of smoothing out extreme values so that the range of the values becomes more narrow. Differences that are present at smaller area scales are lost as the data are grouped into larger and fewer areas. In other words, unless individual observations are identically distributed on all characteristics, if we group the same data differently, those groupings will have different means and different standard errors. Characteristics across geographic units are rarely identically distributed but often clustered in space. Below I provide an example using data on electoral support for political parties at different levels of aggregation. EU member states apply the NUTS classification (Nomenclature of territorial

budget for the period 2007-2013. In total, 613 million euro from the European Regional Development Fund and the European Social Fund were allocated to Denmark. 510 million under the regional competitiveness and employment objective and 103 million euro under the European territorial cooperation objective. Nevertheless, a total of 598 projects were funded. According to the operational program funding is allocated to the five regions (North Jutland, Central Jutland, South Denmark, Zealand, Capital). While Zealand is a transition region, the other four regions are more developed regions. Allocation of financial support to individual projects within regions is decided by regional growth forums. All EU-funded projects must be co-financed by public or private national actors.

³However, individuals may define context in very different shapes including lines or polygons (Wong et al., 2012).

units for statistics) which divides the territory of the EU for the purpose of allocating funding to regions, among other things: NUTS3 (Parish, Canton, Oblast, City & Regency, County, or Municipality), NUTS2 (Region, State, Province, or Prefecture), NUTS1 (Region, Group of NUTS2), and NUTS0 (Country). Furthermore, local administrative units (LAUs) constitute the building blocks of the NUTS, and comprise the municipalities and communes of the EU. Figure 2 plots the various statistical units of Denmark.⁴

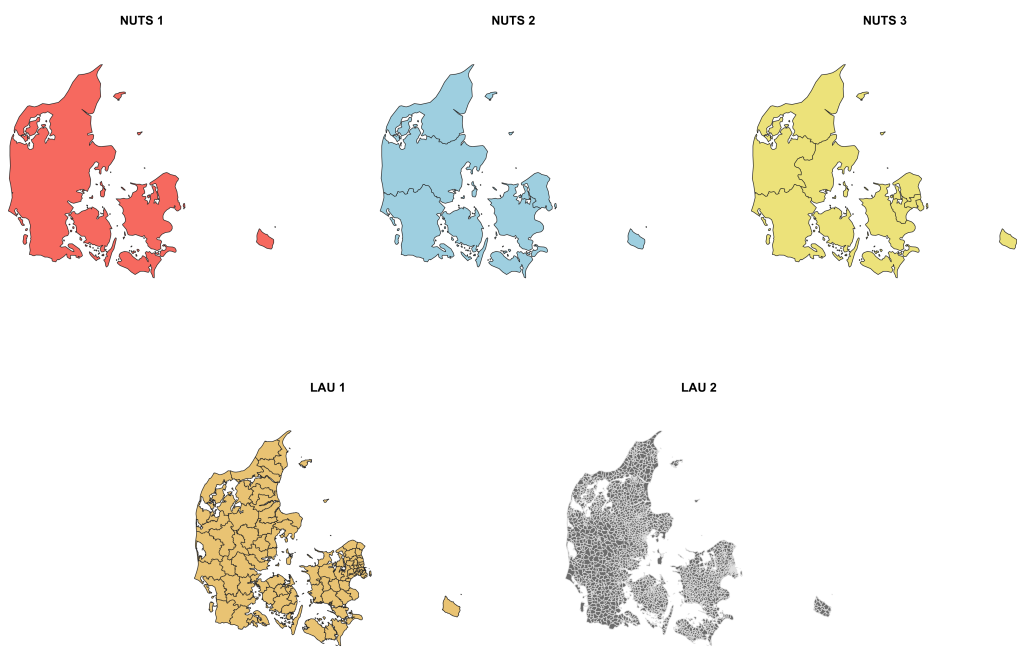


Figure 2: Territorial Units for Statistics in Denmark

Note: tbc

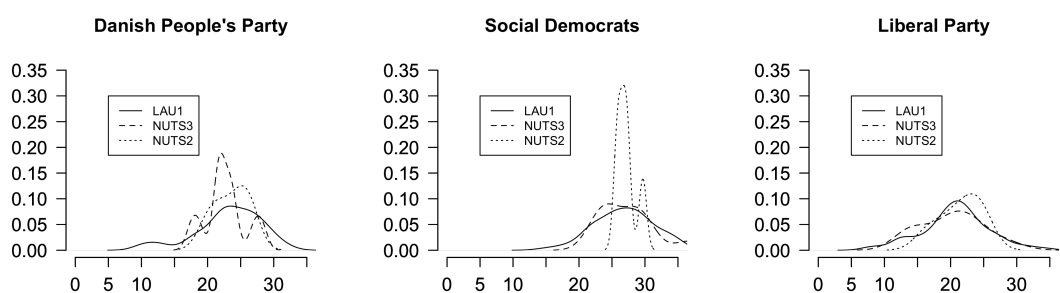


Figure 3: Distribution of electoral support for three political parties across NUTS2, NUTS3, and LAU1

Note: tbc

⁴In Denmark, NUTS0 and NUTS1 both represent the entire country.

The complexity of the MAUP is apparent in the comparison of NUTS2, NUTS3, and LAU1. NUTS3 is a partition of NUTS2 and LAU1 is a partition of NUTS3; so the units comprise different aggregations of the same data. In case of the Danish People's Party, the NUTS2 (most aggregated) LAU1 level (least aggregated) are similarly distributed. Electoral support for the Social Democrats represents a case for which the least disaggregated distribution is much wider than the most aggregated one. Finally, the data for the Liberals show very similar distributions across the three levels of data aggregation. In sum, the example using data on electoral support for political parties reveals the potential for serious instability in empirical findings depending on the chosen level of data aggregation. Naturally, it is impossible to know beforehand which level is most appropriate, however using fine-resolution data in the first place is an excellent approach as one can always aggregate upwards to more coarse levels of data aggregation. Beyond overcoming the concerns about ecological validity and MAUP fine resolution data have great potential to enrich our knowledge on strategic and biased allocation of funding. In the following I provide three empirical studies using the geo-referenced data on EU funding in Denmark described above.

[*Note to discussant: The three empirical studies are not included in the paper yet. I will present results in my oral presentation.*]

References

- Bache, Ian. 2015. Cohesion Policy - A New Direction for New Times? In *Policy-Making in the European Union*, ed. Hellen Wallace, Mark A. Pollack and Alasdair R. Young. Oxford University Press pp. 243–262.
- Bachtler, John and Carlos Mendez. 2007. "Who Governs EU Cohesion Policy? Deconstructing the Reforms of the Structural Funds." *JCMS: Journal of Common Market Studies* 45(3):535–564.
- Bisgaard, Martin, Peter Thisted Dinesen and Kim Mannemar Sønderskov. 2016. "Reconsidering the Neighborhood Effect: Does Exposure to Residential Unemployment Influence Voters' Perceptions of the National Economy?" *The Journal of Politics* 78(3):719–732.
- Blom-Hansen, Jens. 2005. "Principals, agents, and the implementation of EU cohesion policy." *Journal of European Public Policy* 12(4):624–648.
- Bracco, Emanuele, Ben Lockwood, Francesco Porcelli and Michela Redoano. 2015. "Intergovernmental grants as signals and the alignment effect: Theory and evidence." *Journal of Public Economics* 123:78 – 91.
- Brollo, Fernanda and Tommaso Nannicini. 2012. "Tying Your Enemy's Hands in Close Races: The Politics of Federal Transfers in Brazil." *American Political Science Review* 106(4):742–761.
- Dellmuth, Lisa M. and Adam W. Chalmers. 2017. "All spending is not equal: European Union public spending, policy feedback and citizens' support for the EU." *European Journal of Political Research* 57(1):3–23.
- Dellmuth, Lisa Maria, Dominik Schraff and Michael F. Stoffel. 2016. "Distributive Politics, Electoral Institutions and European Structural and Investment Funding: Evidence from Italy and France." *JCMS: Journal of Common Market Studies* 55(2):275–293.
- Dellmuth, Lisa Maria and Michael F. Stoffel. 2012. "Distributive politics and intergovernmental transfers: The local allocation of European Union structural funds." *European Union Politics* 13(3):413–433.

- Dinesen, Peter Thisted and Kim Mannemar Sønderskov. 2015. "Ethnic Diversity and Social Trust: Evidence from the Micro-Context." *American Sociological Review* 80(3):550–573.
- Glaurdić, Josip and Vuk Vuković. 2017. "Granting votes: exposing the political bias of intergovernmental grants using the within-between specification for panel data." *Public Choice* 171(1):223–241.
- Golden, Miriam A. and Picci Lucio. 2008. "Pork-Barrel Politics in Postwar Italy, 1953-94." *American Journal of Political Science* 52(2):268–289.
- Linke, Andrew M. and John O'Loughlin. 2015. "Reconceptualizing, Measuring, and Evaluating Distance and Context in the Study of Conflicts: Using Survey Data from the North Caucasus of Russia." *International Studies Review* 17(1):107–125.
- Muraközy, Balazs and Almos Telegdy. 2016. "Political incentives and state subsidy allocation: Evidence from Hungarian municipalities." *European Economic Review* 89:324 – 344.
- Openshaw, S and P Taylor. 1979. A million or so correlation coefficients: Three experiments on the modifiable areal unit problem. In *Statistical Applications in the Spatial Sciences*, ed. N Wrigley. Pion pp. 127–144.
- Schraff, Dominik. 2014. "Buying turnout or rewarding loyalists? Electoral mobilization and EU structural funding in the German Länder." *European Union Politics* 15(2):277–288.
- Schraff, Dominik. 2017. "Regional redistribution and Eurosceptic voting." *Journal of European Public Policy* 0(0):1–23.
- Sole-Olle, Albert and Pilar Sorribas-Navarro. 2008. "The effects of partisan alignment on the allocation of intergovernmental transfers. Differences-in-differences estimates for Spain." *Journal of Public Economics* 92(12):2302 – 2319. *New Directions in Fiscal Federalism*.
- Wong, Cara, Jake Bowers, Tarah Williams and Katherine Drake Simmons. 2012. "Bringing the Person Back In: Boundaries, Perceptions, and the Measurement of Racial Context." *The Journal of Politics* 74(4):1153–1170.