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Implementation of European cohesion policy at the sub-national level – Evidence from Beneficiary data in Eastern Germany

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Abstract

Regional governments' discretion in allocating structural funds is mainly limited by the competences of the Commission to control implementation and fiscal activities of decentralized governments. In this paper, we analyse implementation of ERDF funds in Eastern Germany in the financial perspective 2007 to 2013 to show how allocation of the funds follows the objectives formulated in the programmes. We find that less rural regions and some economic sectors benefit by more than others. A few beneficiaries control the highest share of the funds. This indicates that political economy forces in the allocation process may benefit well organised groups.

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1. Introduction

One of the top priorities of the European Union (EU) is to increase economic welfare for its member states. The introduction of a European single market is intended to increase free trade between the members by allowing for a better allocation of resources and, hence, overall welfare gains for the EU.[1] Agglomeration and dispersion forces interact to determine the relocation of production so that potential gains from trade are distributed unevenly across regions (Karayalcin and Yilmazkuday 2015, Brülhart 2011, Midelfart-Knarvik and Overman 2002).

In order to mitigate negative effects associated with deepening the European single market, the European Commission maintains cohesion policy to compensate those regions and citizens. The structural funds are widely accepted as an instrument to reduce regional disparities in economic development by investing in human capital and modernizing infrastructure. EU regional policy were the second largest part of the EU budget in the last funding period (i.e. 2007 to 2013) and will maintain a large share in EU budget in the upcoming financing periods. It aims to satisfy the heterogeneous needs of regions which fulfil the agreed criteria. There is evidence that the EU's structural actions were partly effective regarding the aim to promote economic convergence (Neumark and Simpson 2015, Mohl and Hagen 2009). But, there is also evidence that political factors on the recipient side explain the ineffectiveness of European transfers in terms of income convergence (Beugelsdijk and Eijfinger 2005). Dellmuth and Stoffel (2012:429)) argue that governments that direct transfers "to please voters" could distort the intended effects on socioeconomic development. In addition, whenever there are EU financial flows involved, some forms of rent-seeking appear, since several actors want to obtain a share of it (Kalman 2002).

The allocation and implementation process is very complex. In order to achieve a more effective implementation of structural funds, the EU builds upon the "partnership principle" according to which structural actions should be carried out in partnership with the Commission, regional authorities and local private actors that are potential beneficiaries of the funds. The rationale behind that principle is the idea that a process including private actors allows to produce policy outcomes that further EU goals, as a partnership can help to make the use of resources more transparent. Previous research has shown that potential partners do not feel adequately addressed by regional authorities during the programming and implementation phase and numerous requests of members of regional parliaments indicate that they also appear to have no systematic access to information on funds implementation (Blom-Hansen 2005, Dellmuth 2011b).

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[1] See Calin-Vlad (2013) for distribution of gains from trade in the EU. The most detailed survey of literature on the effects of international trade on economic growth is Singh (2010).

In this paper we analyse the implementation of the European regional development fund (ERDF) across East German *Länder* in the funding period 2007 to 2013 based on operational programmes, implementation reports and the lists of final beneficiaries to show how allocation of funds follows the objectives formulated in the programmes. The paper is structured as follows: In the next section we summarize the principles of implementation of EU cohesion policy instruments and discuss how regional actors influence the allocation of funds. Section 3 presents political economy aspects on how incentives of actors may shape the outcome of the allocation process. Results from ERDF funds implementation across East German *Länder* are discussed in section 4. Section 5 concludes the paper.

2. Cohesion Policy: Allocation and Implementation of Structural Funds

The aim of cohesion policy is to promote economic and social cohesion across Europe by reducing disparities between regions and countries. The 1988 reforms doubled the budget for structural funds and introduced a number of principles for the implementation of cohesion policy (Bachtler and Mendez 2007).[2]

The allocation of structural funds follows objective eligibility criteria (Council Regulation 1083/2006): EU regional policy makers have adopted three main objectives to limit the number of regions eligible for funding in the period 2007 to 2013: The convergence objective is to cover the member states and regions whose development is lagging behind. The regional competitiveness and employment objective is to cover the territory of the community outside the convergence objective.[3] The third objective, European territorial cooperation, is to cover regions having land or sea frontiers and actions intend to promote integrated territorial development. Although the EU Commission formulate overall thematic objectives which are supported by funding, regions are allowed to set up their own operational programmes based on specific needs.

One of the process requirements of the EU regional policy is the 'partnership principle' according to which structural actions should be carried out in partnership with the Commission, regional authorities and private actors that are potential beneficiaries (article 11). The partnership principle requires that operational programmes (OP) should receive much input from local actors with respect to funding priorities.

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[2] The principle of (1) concentration on a limited number of objectives and focused on the least developed regions; (2) additionality, to ensure that EU funding does not substitute for national expenditures; (3) programming, based on strategic, multi-annual plans instead of project-based approach; and (4) partnership, i.e. participation of national, sub-national and supranational actors in the design and implementation of programmes.

[3] The regions eligible for funding are those previously funded under objective 1 in the 2000 to 2006 programming period and which no longer satisfy the regional eligibility criteria of the convergence objective. These regions benefit from a transitional aid, as well as all the other regions of the community (Article 8).

The rationale behind the partnership principle is the idea that a process involving actors from the private sector is suitable to produce policy outcomes that increases the EU's efficiency and equity goals, since the partnership can help to make the use of resources and the process as such more transparent and visible to potential beneficiaries (Dellmuth 2011b:21) and, thus, could reduce the lack of relevant projects applications. The partnership with local actors can increases the absorption of structural spending in the region and the completion of projects in reasonable time frame. Much effort in studying EU cohesion policy has been put into the questions of who the relevant actors are and how much power they have to push forward their interest. The institutional process in EU structural policy is complex and several actors are involved in the negotiation process that surrounds the allocation of the EU structural funds (Bodenstein and Kemmerling 2012).[4]

After the European Council has established the total budget for each objective, the European Commission shall make indicative breakdowns by member states with respect to the 'commitment appropriations' (Article 18(2) in Council Regulation 1083/2006). At this stage the national governments have some discretion since they can put forward a list of regions eligible for receiving structural funds (Hooghe and Marks 2001:97; Dellmuth and Stoffel 2012:416). An objective criteria for regions at NUTS2 level is the per capita income in relation to EU average to classify regions for different funds. The lists are negotiated with and approved by the European Commission (Bachtler and Mendez 2007).

In the second stage, the structural programming phase (Articles 32 to 33), the member states develop a multiannual investment plan for each objective (Article 11). Sub-state governments maintain substantial discretion when developing these plans since the financial perspective does not specify precise funding objectives (Dellmuth and Stoffel 2012). At this stage, sub-national authorities have a say in both the selection of the regions and the elaborations of the plans (Bodenstein and Kemmerling 2012). The Member states have to submit to the Commission the development plans including the corresponding financial allocation to each objective. The recipient government's discretion in developing the plans is limited by the Commission ability to negotiate modifications to programme strategies (Article 33). The Commission transforms the plans into a legally binding decision that specifies the amount of funding during the programming period.

Two kind of bargaining take place (Bodenstein and Kemmerling 2012): in the first level, member states and, potentially, the European Commission negotiate the total budgetary covering of the funds for each member state. In the second level, the programming phase, bargaining potentially takes place between national

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[4] The council regulation 1260/1999 sets out the distribution of structural funds in the period 2000 to 2006 and can be described as a two-stage process. This process has been maintained in the funding period of 2007 to 2013 and will be kept in current period of 2014 to 2020 (council regulation 1303/2013).

governments and the regions. When sub-state governments allocate EU funds at local level, there is a contractual relationship between the Commission and the regions in which the investment strategies will be shaped by political incentives with respect to expected re-election outcomes and the influence of economic and social partners. But, if electoral concerns of recipient governments drive allocation of funds, then this may help explain the effectiveness of spending and the variation in the outcomes such as growth and convergence (see e.g. Mohl and Hagen 2008). According to Beugelsdijk and Eijffinger (2005), countries might be inclined not to raise the welfare level of those regions which are close to the critical value of getting EU support, as this would possibly imply a reduction in future financial support. It is possible that the moral hazard effect might lead to an inappropriate use of the funds. Given the sensitivity of EU Cohesion Policy to specific regional needs, Bähr (2008) argues that member states with a higher degree of decentralisation should be able to implement more effective programmes since regional authorities have better information on specific growth inducing projects.

Based on the regulatory framework for the financial perspective 2007 to 2013, funds allocation across beneficiaries takes place at the regional level. In Germany, the funds are, first, apportioned between the *Länder* and the federal level. Usually structural actions are negotiated within the committee responsible for decisions related to the joint agreement for the improvement of the regional economic structure (*Planungsausschuss*). The negotiation of the EU structural funds' allocation takes place within informal meetings of working groups of the second chamber (*Bundesrat*) (Dellmuth 2011b:18). The regional governments of the *Länder* delegated to the working groups prepare the decisions made in conferences of the state ministers (*Fachministerkonferenz*). The conference of ministers for economic affairs (*Wirtschaftsministerkonferenz*) deals with allocation of the ERDF funds, while the conference of the ministers for labour and social affairs (*Arbeits- und Sozialministerkonferenz*) deals with allocation of ESF funds. The conference of the state ministers decides on an allocation key taking several criteria into account, e.g. regional economic performance and unemployment rates.

In the implementation phase, governments invest the funds in local projects across a range of areas such as business development, transport and communication infrastructure. Since investment plans do not entail clear-cut eligibility criteria for projects, governments retain some discretion when choosing single projects for funding. The member states, according to articles 59 to 62, had to appoint a managing authority (*Verwaltungsbehörde*) (a public authority to manage the OP), a certification body (*Bescheinigungsbehörde*) (a public authority to certify the statement of expenditure and payment applications transferred to the EU Commission), and an auditing body (*Prüfbehörde*) (to oversee the efficient running of management and monitoring systems).

The managing authorities decide on the allocation of funds across beneficiaries (Article 60). The approval of projects involves several public actors (*zwischengeschaltete Stellen*) that support the managing authorities (Article 59). Project applicants should consult these intermediary bodies (such as *Investitionsbank* and different units within the state ministries. They review applications and provide financial means granted to the respective projects (see e.g. TMWAT 2007:106; MW Land Brandenburg 2007:191; MWAT Mecklenburg-Vorpommern 2007:151). Only large and major projects need additional approval from managing authorities.

During the funding period, the Commission has a supervisory role. The transfer payment and the co-financing from the funds is made when the Commission reimburses the aggregated statements of expenditures of the *Länder* governments (Dellmuth and Stoffel 2012). Managing authorities enjoy considerable discretion to implement the OP and distribute the funds, since the eligibility criteria for selecting beneficiaries are set at national level. This implies a greater responsibility of regional authorities managing the funds.

3. Political economy of regional allocation of structural funds

A few studies address the allocation of intergovernmental funds from a political economy point of view and for EU structural funds (Bodenstein and Kemmerling 2012; Dellmuth and Stoffel 2012; Dellmuth 2011a; Bouvet and Dall'Erba 2010; Kemmerling and Bodenstein 2006; Blom-Hansen 2005; De Rynck and Mc Aleavey 2001). Most studies draw on insights from models explaining the political motives behind the allocation of intergovernmental grants in general and other public spending programs.

These models predict that in situations where upper-layer governments have leeway in the distribution of funds, a politically biased allocation to jurisdictions should take place, which comes under the term of 'vote buying'.[5] In terms of EU structural spending the allocation of funds to the regions may deviate from the optimal structure of allocation – i.e. in which funds are spend according to objective eligibility criteria. Empirical results for Spain suggest that government has incentive to allocate funds to jurisdictions which are governed by the same party, since grants given to opposition parties do not bring any votes (Solé-Ollé and Sorribas-Navarro 2008).

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[5] See Lindbeck and Weibull (1987, 1993) and Dixit and Londregan (1998), for the "swing voter model". Most recent evidence is found in Dahlberg and Johansson (2002) and Johansson (2003), Castells and Solé-Ollé (2005), Kemmerling and Stephan (2002). The alternative "core voter model" claims that politicians are risk averse (Cox and McCubbins 1986, Nichter (2008), Leigh (2008), Ansolabehere and Snyder (2006), and Diaz-Cayeros et al. (2003).

The development of regional policy in the EU - especially the partnership principle - has introduced regional actors into the political system creating a third level of bargaining, i.e. between the Commission and the regions (Marks 1993, Hooghe and Marks 2001). Some studies argue that constitutional strong regions, i.e. regions in countries with federal constitutions that strengthen regional autonomy, have benefited from increasing power-sharing between actors in EU regional politics (Marks et al. 2002; Hooghe and Keating 1994).

According to Bauer (2001) and Blom-Hansen (2005), sub-state governments and the Commission act in a kind of principal-agent relationship, since they are engaged in a contractual relation with respect to funds allocation.[6] The governments' discretion in allocating funds to the region is mainly limited by the competences of the Commission to control how the funds are spent. The Commission has few incentives to interfere with governments' funding strategies, because monitoring procedures and sanctions are costly.[7] Regional governments, on the other hand, should be less concerned about how EU expenditure affects their budgets. They face less pressure from citizens to use these funds efficiently, because citizens perceive these funds as other people's money (Bird and Smart 2002, Dellmuth and Stoffel 2012). Bodenstein and Kemmerling (2012) find that some regions receive significantly more funds per capita than others and argue that federalist regions should be better capable of acquiring transfers than unitary countries because constitutional competencies on the regional level give rise to a regional political infrastructure that is conducive to lobbying and political pressure (see also Kemmerling and Stephan 2008). The empirical results tend to support this argument for objective 1 funding, but not for objective 2 funding allocation (see also Dellmuth (2011a)).

Regional partisan politics can influence the allocation of structural funds (Marks et al. 2002). In regions that are dominated by parties with a high ideological preference for regional policy, regional politicians will lobby harder for structural funds than national governments will do. Evidence is mixed: Kemmerling and Bodenstein (2006) find that both left and Eurosceptic parties attract more EU funds to their regions, while Dellmuth (2011a) does not support this argument either on a left-right or on a pro-anti Europe dimension. All regions would be equally interested in more transfer payment.

However, the Commission has incentives to allocate more transfers to constitutionally strong regions because they can mobilize more resources and expertise to manage the funds more effectively (Dellmuth 2011a). They are also more able to provide the Commission with relevant information it needs to control

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[6] The principal (i.e. the Commission) delegates authority to agents (i.e. the regional government) and tries to provide them with incentives to make them behave in a way that maximizes the utility of both the principal and the agent, i.e. structure the intergovernmental transfer in ways that promote EU funding goals (Dellmuth and Stoffel 2012).

[7] If the Commission pursues an agenda that fundamentally differs from the preferences of member governments, member states may 'cut the wings' of the Commission when reforming the funds policy for the next funding period (Pollack 1995, 2003).

implementation.[8] Recipient governments, on the other hand, will refrain from reporting misallocations of funds, because this may limit their chances of receiving a similar or even greater amount of support in the following funding periods. Although the Commission has little incentive to control whether the projects are suitable for reaching EU goals, it should have incentives to make governments spend the available funds irrespective of whether EU goals are met.[9] The allocation in German local districts suggests that, indeed, the distributive choice of sub-state governments is systematically related to their electoral incentives by directing funds towards the strongholds of the prime minister's party (Dellmuth and Stoffel 2012).

In order to achieve a more effective implementation of funds, i.e. in accordance with EU funding goals, the EU builds upon the "partnership principle" which requires that set up and implementation of the OP should receive input from local actors. A few studies evaluate the process of structural funds implementation by means of interviews. They are sceptical as to whether EU requirements regarding the governance process are effectively pursued (Dellmuth 2011b, Blom-Hansen (2005). Member states are likely to be more mindful of national concerns than of any goals set by the EU (Blom-Hansen (2005: 637). Within partnerships the debates follow a "gentlemanly agreement" not to criticise other partners' actions in the presence of the Commission and central government authorities (Rynck and McAleavey 2001:545f.). The interviews suggest that the political process is characterized by an information asymmetry that benefits well-organised groups, because they can mobilise resources and expertise to develop projects better than other social groups. Especially "low income groups, which tend to be less integrated socially, will face the considerable barrier of organizing collective action first, before being able to gain access to partnerships and become beneficiaries" (Rynck and Mc Aleavey 2001:546). The pressure to spend (on time) what has been agreed upon gives a natural advantage to the strongly organized groups within the regions, which tend to be better informed and linked to the relevant networks" (Rynck and Mc Aleavey 2001:546).

Given that the intention behind the preliminary talks between *Länder* governments, county districts and the municipalities in the beginning is to ensure a swift absorption of EU funds during the funding period, this communication strategy can be selective and favour specific areas, depending on the political priorities of state governments (Dellmuth (2011b:20). The literature is critical of the extent to which policy-makers pursue EU goals when implementing the funds (Santos 2008). For example, regional policy makers throughout Europe have not systematically adopted the Lisbon strategy but have pursued their own funding priorities (Danish Technological Institute

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[8] The failures of domestic authorities can cause reputation problems for the Commission with regard to its effectiveness and credibility (Majone 2000). Since bad reputation "may stick in the public perception, it will further limit the Commission's political room for manoeuvre" (Bauer 2008:629).
[9] Absorbing the funds is the best strategy to ensure equal or more funding during the next funding period, since the Commission will be blamed for errors during the implementation of the EU budget by its European peers, e.g. when funds are not spent (Bauer 2006).

2005), such that resources may be targeted to the economic centres rather than to deprived areas (Santos 2008, Dellmuth 2011b). Against this background we analyse how the implementation of the funds in Eastern Germany follows in accordance with the committed OP and how distribution of the funds benefit the areas and sectors that do need financial support for reasons of social and economic convergence.

4. Implementation of structural funds in Eastern Germany

Committed level of allocation

According to the committed allocations of structural funds, German regions receive around 25 billion Euro of structural funds in the financial perspective 2007 to 2013. East German *Länder* receive funds under the convergence objective while West German governments invest funds under the regional competitiveness and employment (RCE) objective. Around 80 percent of the structural funds is managed by the regional *Länder* governments of which East German *Länder* manage the highest amount of funds (around 12 billion Euro (48.8%)). More than two thirds of the committed funds stem from the ERDF. East German regions receive reimbursement of up to 75 per cent of eligible cost for projects granted under the convergence objective (Article 53 and annex III), while in West German regions the contribution from the funds (ERDF and ESF) under RCE-objective is up to 50 per cent of eligible expenditures. Thus, the required (additional) regional public funds to co-financing the funds are much lower in East than in West German regions. East Germany receives also higher per capita funds. Dellmuth (2011b:6) notes that regions incur indirect costs because the country in which they are located contributes to the overall budget of the EU.[10] Saxony receives the highest net benefits per inhabitant among East Germany, despite the fact that it has the highest per capita income.

The most severe problem is that regions at the NUTS 2 level qualify for funding (Article 35) and some relatively rich NUTS 3 regions within these NUTS 2 aggregates may receive structural funds although their per capita GDP exceeds the threshold (Becker et al. 2010). Some low income NUTS 3 regions within wealthy NUTS 2 aggregates (e.g. in West German regions) would qualify for the funds if the rules for NUTS 2 had been applied at NUTS 3 level (see e.g. Dellmuth 2011b).

Geographical allocation of the funds

Table 1 shows the geographical allocation of the funds in the East German *Länder*. By the end of 2013, Thuringia invested most of the ERDF funds in rural regions. Less than 40% of the ERDF funds were directed towards projects in urban areas. The level of structural funds to be spent in urban areas was committed to be 45%.

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[10] German *Länder* do not contribute directly to the EU budget, but Germany is a net contributor. Net balances of German *Länder* can be assessed based on the regions contribution to the given country's income (Santos 2008).

Table 1: Allocation of ERDF funds in Eastern Germany (2007-2013): Pre- and post- implementation by type of region

		Thuringia			Saxony			Saxony-Anhalt			Mecklenburg-West-Pomerania			Brandenburg		
		Pre (2007)	Post (2013)	Funds absorp.	Pre (2013)	Post (2013)	Funds absorp.	Pre (2012)	Post (2013)	Funds absorp.	Pre (2007)	Post (2013)	Funds absorp.	Pre (2007)	Post (2013)	Funds absorp.
	Type of region															
01	Urban areas	664.9 (45.0%)	483.3 (39.2%)	72.7%	633.0 (20.5%)	1842.4 (62.2%)	291%	425.0 (22.0%)	833.4 (45.6%)	196%	604.0 (48.2%)	0,0	0%	909.5 (60.7%)	860.9 (65.8%)	94.7%
05	Rural areas	812.7 (55.0%)	748.8 (60.8%)	92.1%	0.0	278.6 (9.4%)	-	1506.8 (78.0%)	995.6 (54.4%)	66.1%	648.4 (51.8%)	1027.8 (100%)	159%	356.6 (23.8%)	307.5 (23.5%)	86.2%
09	Transnat. coop. area	0.0	0.0	-	0.0	.0	-	0.0	0.0	-	0,0	0,0	-	0,0	0.0	-
00	Not applicable	0.0	0.0	-	2458.1 (79.5%)	841.2 (28.4%)	34.2%	0.0	0.0	-	0.0	0.0	-	232.7 (15.5%)	140.0 (10.7%)	60.2%
	Total in m€	1478	1232	83.4%	3091	2962	95.8%	1932	1829	94.7%	1252	1028	82.1%	1499	1308	87.3%

Sources: TMWAT (2007, 2013); MW Land Brandenburg (2007); MWE Land Brandenburg (2014); SMWAV (2013) Table 33 p. 304; SMWAV (2014); Land Sachsen-Anhalt (2013) Table 6.7, 6.8, 6.9; MF Sachsen-Anhalt (2014) Table 22, 23, 8, 9, 10, 11; MWAT Mecklenburg-Vorpommern (2007); Gemeinsame Verwaltungsbehörde des Landes Mecklenburg-Vorpommern (2014).

The opposite is, however, the case in all other East German *Länder*. Saxony-Anhalt, for example, spends twice the amount of funds to projects in urban areas than committed. Brandenburg allocates funds in favour of urban projects. In Saxony less than 10 % of the funds were assigned to rural areas.

Since East Germany is also among the major beneficiaries of the CAP funding scheme (i.e. funds from the EAGF and under the rural development policy scheme), Bonfiglio et al. (2015) also find that the distribution of CAP funds across European regions seems less rural than stated in its political intention: urban and central regions tend to be more supported by CAP funds than rural and peripheral regions. In terms of ERDF expenditures, managing authorities do not provide deeper information on how they classify NUTS 3 level regions along the urban-rural-typology.

Figure 1: Committed and granted ERDF funds by type of region (2007-13)
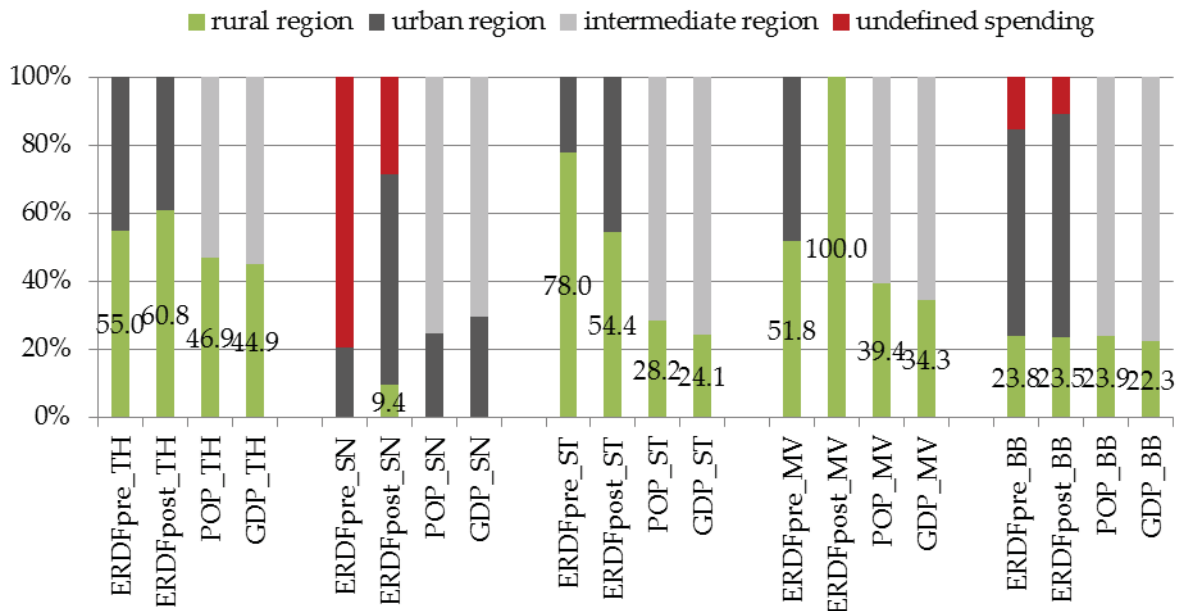
Note: Predominantly urban regions (rural population: <20 % of the total population), Intermediate regions (rural population: 20–50 % of total population), predominantly rural regions (rural population: >50 % of total population). A region which has been classified as predominantly rural (intermediate) becomes an intermediate (predominantly urban) region, if it contains a city of more than 200,000 inhabitants (500,000 inhabitants) representing at least 25 % of the regional population.

Source: own calculation based on latest implementation reports published by the East German *Länder* in the year 2013, Eurostat (2015a,b,c).

According to the Eurostat (2015c) definition, as much as 47 % of the population in Thuringia is living in areas classified as predominantly rural (figure 1).[1], GDP figures are similar: 45 % of the gross domestic product can be allocated to rural type regions. The share of the rural population in Thuringia is even higher than in other East German *Länder*: 39 % in Mecklenburg-West Pomerania, 28 % in Saxony-Anhalt and 24 % in Brandenburg. Any region in Saxony is classified as rural.

However, expenditures at NUTS 3 level (*Landkreise*) is provided by Saxony and Saxony-Anhalt (SMWAV (2014:60f), MF Sachsen-Anhalt (2014:17)). Managing authorities in both *Länder* tend give grants to areas classified as 'predominantly urban' and 'intermediate' NUTS 3 regions by more – in per capita terms - than to projects in 'predominantly' rural areas. Saxony-Anhalt spends more than twice the amount of ERDF funds - in per capita terms - in 'less rural' (i.e. 'intermediate') regions (933 Euro per capita) than in 'predominantly rural' areas (398 Euro per capita). In Saxony, 85 % of the ERDF funds can be directly linked to regions at NUTS 3 level (*Landkreise*). Especially urban NUTS 3 regions in Saxony receive a higher per capita amount (of 962 Euro) for ERDF projects, while the per capita amount allocated to 'intermediate' NUTS 3 regions is less than 500 Euro. These 'predominantly urban' and 'intermediate' NUTS 3 regions have on average higher per capita GDP (available for the year 2010; Eurostat 2015b) than predominantly rural NUTS 3 areas.

Allocation of the funds to specific economic sectors
East German *Länder* differ with respect to their local needs and their committed thematic objectives but also with respect to the spending of the funds for certain economic sectors. Saxony focuses on R&TD activities and infrastructure in research centres while Mecklenburg-West Pomerania made investments into regional and local roads by comparatively more than others. By the end of 2013, Thuringia invested one third of the funds into 'unspecified' manufacturing industries (table 2). Among the beneficiaries are firms in the metal working industry receiving 50 % of the funds of the manufacturing sector (TMWAT 2013:34). Figure 2 shows ERDF allocation to the economic sectors in the regions relative to their economic size. It could be expected that either larger economic sectors in the regions (in terms of employment or gross value added) receive more funds due to the fact that they submit comparatively more project proposals for funding than smaller sectors. Otherwise, economically small but influential sectors may receive comparatively more funds because interest groups may lobby for funds more effectively.

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[1] Regions at NUTS 3 are classified into 'predominantly rural' based on the share of population living in rural grid cells and urban clusters. Rural regions – according to Eurostat (2015c) – are classified as rural if the rural population accounts for 50 % and more of the population and, in addition, the NUTS 3 region contains any city with more than 200,000 inhabitants.

Table 2: Allocation of ERDF funds in Eastern Germany (2007-2013): Spending by economic sector

	Economic sector	Thuringia			Saxony			Saxony-Anhalt			Mecklenburg-West-Pomerania		
		m€	%	Empl. 2008 (%)	m€	%	Empl. 2008 (%)	m€	%	Empl. 2008 (%)	m€	%	Empl. 2008 (%)
00	Not applicable	10.0	0.8	-	78.6	2.7	-	231.8	12.7	-	0.3	0.0	-
01	Agriculture, hunting and forestry	2.7	0.2	2.1	0.4	0.0	1.6	0.9	0.1	2.2	0	0.0	3.0
02	Fishing	0	0	-	0.001	0.0	-	0	0.0		0	0.0	-
	Manufacturing industries, of which	460.7	37.4	19.8	588.8	19.9	16.6	406.2	22.2	15.0	121.3	11.8	10.4
03	Manufacture of food products, beverages	15.2	1.2	-	17.7	0.6	-	39.5	2.2	-	17.4	1.7	-
04	Manufacture of textiles, textile products	4.3	0.3	-	11.0	0.4	-	0.5	0.0	-	3.8	0.4	-
05	Manufacture of transport equipment	42.2	3.4	-	44.4	1.5	-	17.0	0.9	-	7.9	0.8	-
06	Unspecified manufacturing industries	399.0	32.4	-	515.7	17.4	-	349.2	19.1	-	92.2	9.0	-
07	Mining and quarrying of energy producing	0.7	0.1	0.1	0.03	0.0	0.2	0.02	0.0	0.3	0	0.0	0.1
08	Electricity, gas, steam, hot water supply	1.1	0.1	0.5	21.3	0.7	0.6	0.3	0.0	0.7	14.2	1.4	0.5
09	Collection, purification, distrib. of water	0	0	1.0	0.2	0.0	1.0	8.6	0.5	1.1	0	0.0	0.9
10	Post and telecommunications	4.4	0.4	2.0	0.05	0.0	2.5	9.4	0.5	1.5	0.3	0.0	1.7
11	Transport	130.3	10.6	4.3	62.9	2.1	5.1	10.5	0.6	5.5	4.5	0.4	5.5
12	Construction	5.1	0.4	8.3	837.2	28.3	8.2	163.7	9.0	7.8	0.5	0.0	7.1
13	Wholesale and retail trade	34.2	2.8	12.5	8.3	0.3	12.7	11.4	0.6	12.8	2.5	0.2	12.2
14	Hotels and restaurants	16.2	1.3	3.7	17.9	0.6	3.9	10.5	0.6	3.6	29.9	2,9	6.5
15	Financial intermediation	73.9	6.0	1.9	35.6	1.2	2.1	266.1	14.6	1.9	0	0.0	1.7
16	Real estate, renting and business activities	139.4	11.3	11.9	2.9	0.1	14.0	0.008	0.0	13.8	0.7	0.1	13.1
17	Public administration	22.3	1.8	8.0	410.6	13.9	7.1	240.4	13.1	8.6	609.7	59.3	10.3
18	Education	39.5	3.2	6.2	417.2	14.1	6.2	159.8	8.7	6.5	89.0	8.7	6.3
19	Human health activities	9.3	0.8	11.6	35.1	1.2	11.8	0.2	0.0	12.7	10.8	1.0	13.6
20	Social work, community, social, personal serv.	0.01	0.0	6.1	1.6	0.1	6.5	2.4	0.1	6.2	0.6	0.1	6.9
21	Activities linked to the environment	202.9	16.5	-	20.7	0.7	-	117.2	6.4	-	17.5	1.7	-
22	Other unspecified services	79.2	6.4	-	422.9	14.3	-	189.5	10.4	-	126.2	12.3	-
	Total	**1232**	**100**	**1044**	**2962**	**100**	**1974**	**1829**	**100**	**1032**	**1028**	**100**	**750**

Source: TMWAT (2013); SMWAV (2014); MF Sachsen-Anhalt (2014); Gemeinsame Verwaltungsbehörde des Landes Mecklenburg-Vorpommern (2014), VGRdL (2015).

Figure 2: ERDF-spending per employee by economic sector (2007-13)
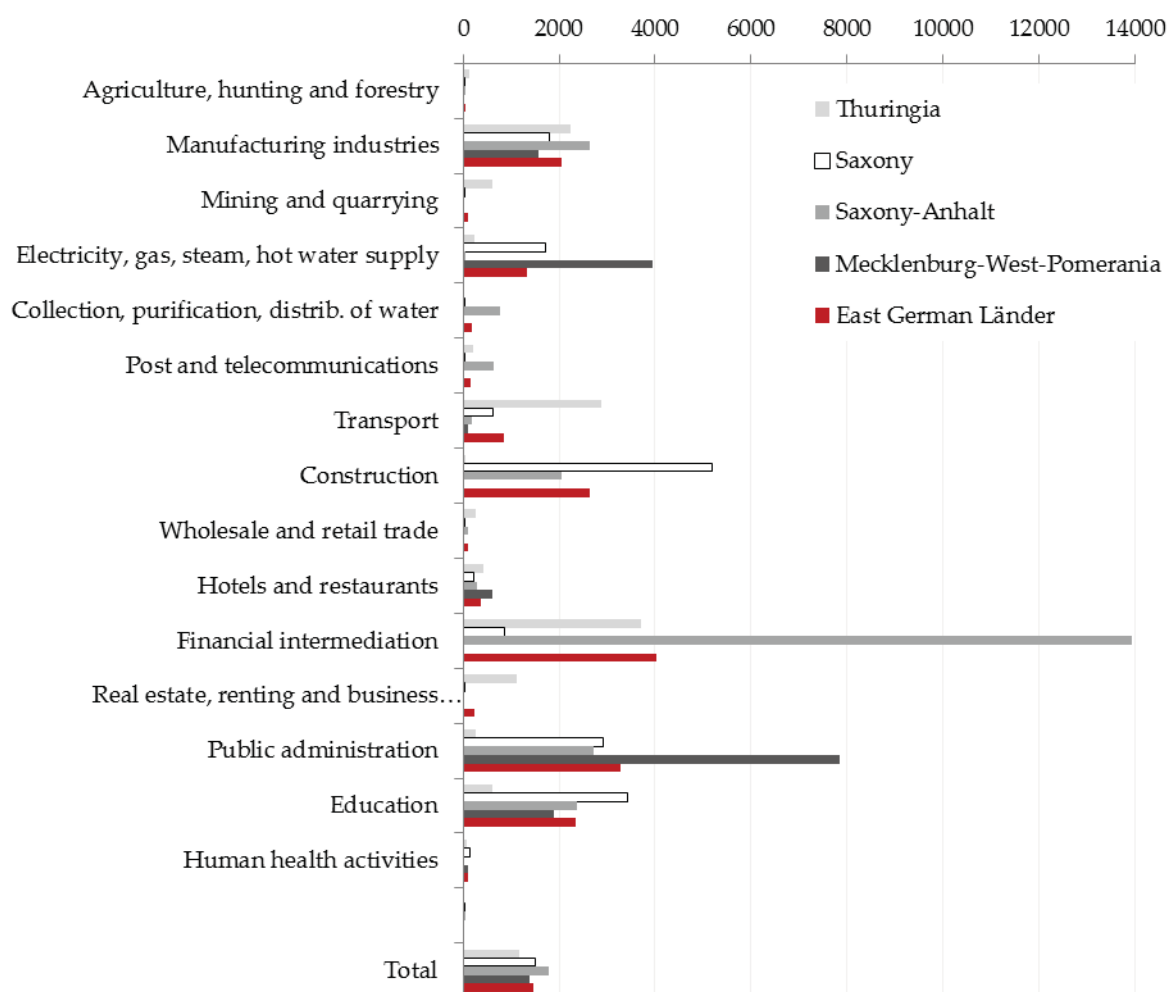
Note: Data on ERDF-funds by economic sector is not available for Brandenburg. The average figures on spending per employee in each sector for East German *Länder* exclude Brandenburg. Employment figures date from the year 2008, the beginning of the financial perspective.

Source: own calculation based on latest implementation reports of the East German *Länder* in the year 2013, VGRdL (2015).

The average amount of ERDF funds spent per employee varies by between 1,230 Euro (in BB) and 1,770 Euro (in ST). In terms of gross value added (GVA), the average amount paid is in the range of 28,900 Euro (in TH) and 40,000 Euro (in ST) per million Euro GVA.

However, some economic sectors still receive above average ERDF funds – per employee and GVA – while other sectors do not: In Saxony-Anhalt, for example, spending is outstanding in financial intermediation (13,900 Euro per employee). According to the implementation report in the year 2013, the funding volume reported

here includes financial engineering instruments (i.e. venture capital funds, guarantee funds) in accordance with article 44 of council regulation 1083/2006.[1]

Also the Thuringian government spends an above average amount for financial intermediation (3,700 Euro ERDF per employee). The transport sector in Thuringia receives a financial amount of 2,900 Euro per employee. The manufacturing sector receives as much as 2,200 Euro per employee. And even the sector 'real estate, renting and businesses' obtains as much as 1,100 Euro per employee which represents nearly the average funding per employee. By contrast, Education in Thuringia is funded with 610 Euro per employee. Saxony puts more emphasis on education investing 15 % of ERDF and as much as 3,400 Euro per employee. Despite that, the manufacturing sector in Saxony receives above average payment per employee as well. Job creation and support for SMEs seems to be the primary goal behind the funding pattern. However, manufacturing employment grows by nearly the same rate in both regions (+3.7 %) in the period 2008 to 2012 (VGRdL 2015). But who benefits from the structural funds?

Since 2007 the regions provide the list of final beneficiaries at the individual level (TMWWDG 2014, SMWA 2015, Land Sachsen-Anhalt 2015, MWBT Mecklenburg-Vorpommern 2015, MWE Land Brandenburg 2015). In total, more than 66,000 projects have been granted to more than 40,000 beneficiaries across the East German *Länder.* The list of final beneficiaries includes the names of the beneficiaries, the project volume, the year of granting, and the year of final payment.[2] Information on the geographical location of the beneficiary (i.e. NUTS 3 level) is not included in detail.

The granted volumes reported in the beneficiary list reflect the public financial support the beneficiaries receive (ERDF amount and co-financing amount from the *Länder*).[3] Moreover, since the 'paid volume' of funds reported in the beneficiary list is much lower (less than a third) than that amount reported in the implementation report, the list contains only paid projects that were completed and for which the final fund rate has been paid out (*bei Abschluss des Vorhabens gezahlte*

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[1] According to article 44 of the council regulation, "structural funds may finance expenditure in respect of an operation comprising contributions to support financial engineering instruments for enterprises, primarily small and medium-sized ones, such as venture capital funds, guarantee funds and loan funds, and for urban development funds, that is, funds investing in public-private partnerships and other projects included in an integrated plan for sustainable urban development."

[2] Reporting standards differ by regions: some managing authorities (MV, SN, TH) report either year of granting (*Jahr der Bewilligung*) or the year of final payments (*Jahr der Restzahlung*). Exceptions are BB and ST who report for each project listed both.

[3] The funding volume deviate from the amount reported in the implementation report. According to the beneficiary list of Thuringia published in June 2014, 9164 projects were granted with a volume of 2,098 million Euro. Around 478 million Euro has been paid to completed projects. Five projects where listed with a value of zero. According to the 2013-report by TMWAT (2013), 9398 projects with a volume of around 2,000 million Euro has been granted. As much as 1,640 million Euro has been paid (absorption rate of 82 %) of which 1,232 million Euro has been financed by ERDF.

Gesamtbeträge). Neither the co-financing rate nor the intermediate payment rates for each project is listed.

Allocation of funds to uncompleted projects

A project that has been selected for funding in Thuringia receives on average 0.23 million Euro. In Saxony the average project volume is around 94,000 Euro. The mean value of projects in all other East German regions is much higher than in Thuringia: In Brandenburg around 0.34 million Euro on average, in Saxony-Anhalt 0.40 million Euro on average and in Mecklenburg-West Pomerania 0.39 million Euro on average. In Thuringia, 5,942 projects are still finalised representing two thirds of the *number of granted projects*. Saxony-Anhalt made final payments for 60 % of the projects. Managing authorities in Saxony even paid the final rate for 95 % of the number of projects. In Thuringia around 23 % of the granted fund has been paid, while Saxony-Anhalt and Mecklenburg-West-Pomerania spend up to 44 % and 56 % respectively. Why is completion of projects in some regions higher than in other?

Figure 3: ERDF-spending and Project length in Brandenburg and Saxony-Anhalt (2007-13)
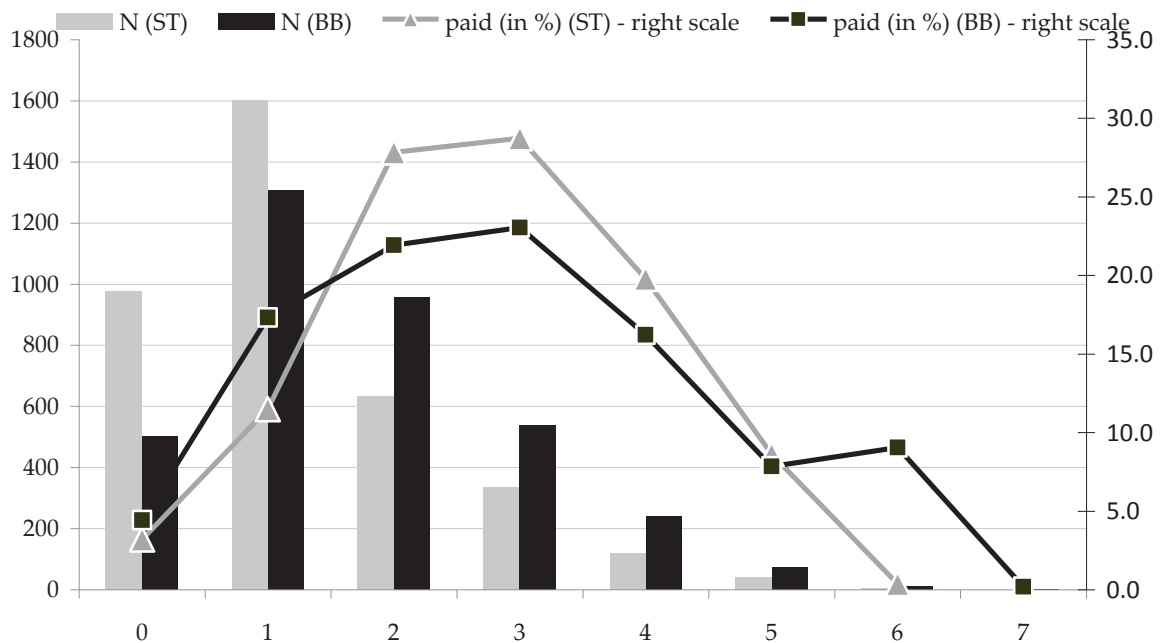
Note: Number of completed projects (N) by duration of projects in years (difference between year of granting and year of final payment). Amount of public funds paid by duration of projects in per cent of total payment.

Source: own calculation and compilation based on the list of beneficiaries provided by Land Sachsen-Anhalt (2015), MWE Land Brandenburg (2015).

The payments for completed projects follow a pattern (figure 3), that more or less depend on the project time. Most of the completed projects have duration of less than two years: In Saxony-Anhalt, for even 86 % of the projects the final rate has been paid two years after the project was granted. A few projects have duration of three years and more. Figures are similar in Brandenburg. These short-term projects require a comparable low share of funds. A few projects with a time horizon of 3 years and more absorb more than half of the paid funds.

Other East German regions do not offer the data on project length. In Thuringia, 35 % of the number of granted projects are still uncompleted. In Saxony less than 6 % of the number of projects is not finalised. The uncompleted projects require by between 44 % (in Mecklenburg-West Pomerania) and 85 % of the funding volume (in Saxony-Anhalt).

Nearly a quarter of the uncompleted projects have yet a length of four years and more (i.e. they were granted before 2010) and require nearly half of the funding volume still to be paid. Some projects have – by the end of 2013 – duration of 7 years. Intermediate payments –ot reported in the beneficiary lists - may have taken place, but the final rate is still to be paid. The implementation reports indicate comparable high funds absorption rates but the lack of completion of projects is not explained.

The completion of ERDF projects depend on the selection (of potential beneficiaries) and how proposals have been evaluated according to specific criteria. The completion of projects and the funds absorption rate depend on how many project grants a single beneficiary receives and how many projects have to be dealt with.

Allocation of funds to selected beneficiaries

Table 3 shows distribution of the number of funded projects (and the project volume) among the beneficiaries. Most of the beneficiaries receive funds for one single project. Only a few beneficiaries in Thuringia (a total of 105 or 2.4 % of all beneficiaries) have ten and more projects supported by ERDF. In Saxony, 26,500 (or 86 % of the) beneficiaries receive funds for a single project, while 189 (or 0.6 % of the) beneficiaries have successfully applied for ten and more projects. The distribution of projects across the beneficiaries is similar across East German regions. Structural funds benefit a number of applicants across the region. But, a few beneficiaries control the highest share of the funds. In Thuringia, 2.4 % of the beneficiaries receive a quarter of the funds. In Saxony, the distribution is even more skewed: less than one per cent of the beneficiaries receive more than 50 % of the granted volume.

Table 3: ERDF-Spending in Eastern Germany by number of projects (2007-13)

No. of Projects	No. of Actors	% actors	m€	% value	Mean p. benef. (m€)	m€	% value	Absorb. rate
			Total amount			paid amount		
				Thuringia				
1	2895	66.1	393.4	18.8	0.136	85.9	18.0	21.8
2	639	14.6	299.8	14.3	0.469	53.8	11.3	18.0
3	311	7.1	153.7	7.3	0.494	35.3	7.4	23.0
4	142	3.2	127.8	6.1	0.900	34.7	7.3	27.1
5	87	2.0	199.7	9.5	2.295	37.9	7.9	19.0
6	84	1.9	122.9	5.9	1.464	30.5	6.4	24.8
7	58	1.3	101.2	4.8	1.746	14.4	3.0	14.2
8	34	0.8	75.8	3.6	2.230	22.7	4.7	29.9
9	26	0.6	65.0	3.1	2.501	22.5	4.7	34.6
10	23	0.5	46.1	2.2	2.004	12.7	2.7	27.5
10+	105	2.4	554.6	26.5	5.282	140.5	29.4	25.3
44	1	0.02	26.1	1.2	26.090	8.1	1.7	30.9
53	1	0.02	70.1	3.3	70.129	14.4	3.0	20.5
84	1	0.02	68.5	3.3	68.535	10.9	2.3	15.9
9164	4381	100.0	2,094.1	100.0	0.478	478.1	100.0	22.8

Note: Top 3: Technische Universität Ilmenau (84 projects), Friedrich Schiller Universität Jena (53 projects), Institut für Photonische Technologien (IPHT) e.V. (44 projects)

				Saxony				
1	26527	86.2	705.0	17.8	0.027	396.5	23.0	56.2
2	2583	8.4	305.3	7.7	0.118	171.2	9.9	56.1
3	673	2.2	149.7	3.8	0.222	99.2	5.7	66.2
4	320	1.0	104.5	2.6	0.327	62.1	3.6	59.5
5	181	0.5	70.7	1.8	0.390	53.7	3.1	75.9
6	125	0.4	53.9	1.4	0.431	30.5	1.8	56.7
7	82	0.3	49.0	1.2	0.597	29.5	1.7	60.2
8	60	0.2	52.8	1.3	0.880	39.1	2.3	74.1
9	36	0.1	46.5	1.2	1.292	8.8	0.5	18.8
10	31	0.1	64.0	1.6	2.065	20.8	1.2	32.4
10+	189	0.6	2,418.9	61.1	12.598	836.8	48.4	34.6
117	1	0.003	73.0	1.8	72.993	47.2	2.7	64.7
225	1	0.003	186.1	4.7	186.099	79.5	4.6	42.7
265	1	0.003	302.8	7.7	302.777	167.7	9.7	55.4
42282	31071	100	3,956.1	100	0.129	1,727.3	100	43.7

Note: Top 3: Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V. (265 projects), Technische Universität Dresden (225 Projects), Landeshauptstadt Dresden (117 projects)

				Saxony-Anhalt				
1	1645	60.7	468.0	19.1	0.285	147.9	30.4	31.6
2	481	17.4	381.7	15.6	0.810	71.0	14.6	18.6
3	200	7.4	92.5	3.8	0.463	33.0	6.8	35.7
4	109	4.9	66.3	2.7	0.608	30.9	6.3	46.6
5	71	2.6	66.2	2.7	0.932	12.0	2.5	18.1
6	49	1.8	20.9	0.9	0.427	6.9	1.4	33.2
7	32	1.2	75.4	3.1	2.356	10.6	2.2	14.0
8	23	0.8	43.4	1.8	1.888	13.4	2.8	30.9
9	20	0.7	104.0	4.3	5.201	3.9	0.8	3.7
10	18	0.7	52.4	2.1	2.911	24.8	5.1	47.4
10+	89	3.3	1,126.2	46.1	12.654	156.9	32.3	19.9
50	1	0.04	56.8	2.3	56.824	13.9	2.9	24.5
83	1	0.04	80.7	3.3	80.682	2.5	0.5	3.1
86	2	0.07	132.7	5.4	66.360	1.9	0.4	1.4
6481	2709	100	2,444.7	100	0.902	486.5	100	13.9

Note: Top 3: Otto-von-Guericke-Universität Magdeburg (86 projects), Landesbetrieb für Hochwasserschutz (86 projects), Fraunhofer Gesellschaft (83 projects), Landeshauptstadt Magdeburg (50 projects)

Table 3 continued

No. of Project	No. of Actors	% actors	Total amount			paid amount		
			m €	% value	Mean p. benef. (m€)	m €	% value	Absorb. rate
Mecklenburg-West Pomerania								
1	835	62.5	328.0	22.6	0.393	223.8	26.7	68.2
2	164	12.5	115.3	7.9	0.690	88.3	10.5	76.6
3	84	6.3	137.4	9.5	1.636	72.5	8.6	52.7
4	49	3.7	40.1	2.8	0.819	21.3	2.5	53.0
5	38	2.9	25.1	1.7	0.660	8.1	1.0	32.2
6	24	1.8	26.0	1.8	1.085	14.9	1.8	57.1
7	17	1.3	38.9	2.6	2.260	11.7	1.4	30.6
8	23	1.8	43.9	3.0	1.910	7.4	0.9	17.0
9	14	1.1	11.2	0.8	0.799	3.8	0.5	34.5
10	15	1.0	18.7	1.3	1.249	8.0	1.0	42.7
10+	85	6.4	685.5	47.3	8.070	387.8	46.2	56.5
35	1	0.07	4.7	0.3	4.726	1.4	0.2	30.5
41	1	0.07	10.4	0.7	10.446	4.4	0.5	41.7
97	1	0.07	25.1	1.7	25.140	8.9	1.1	35.8
3767	1,335	100	1,451.5	100	1.087	839.7	100	56.5

Note: Top 3: Universität Rostock (97 projects), Ernst-Moritz-Arndt Universität (41 projects), Hochschule Wismar (35 projects)

No. of Project	No. of Actors	% actors	m €	% value	Mean p. benef. (m€)	m €	% value	Absorb. rate
Brandenburg								
1	1586	71.7	444.0	24.2	0.280	199.6	35.1	44.9
2	326	14.7	150.1	8.2	0.460	49.2	8.6	32.8
3	115	5.2	97.0	5.3	0.844	37.1	6.5	38.2
4	54	2.4	49.3	2.7	0.914	11.9	2.1	24.2
5	28	1.3	32.9	1.8	1.174	10.9	1.9	33.0
6	19	0.9	35.0	1.9	1.842	5.6	1.0	16.0
7	14	0.6	104.1	5.7	7.435	41.0	7.2	39.4
8	9	0.4	17.9	1.0	1.994	1.9	0.3	10.5
9	6	0.3	30.2	1.6	5.039	16.8	2.9	55.5
10	8	0.4	20.2	1.1	2.526	6.9	1.2	34.2
10+	56	2.5	873.7	47.6	15.602	195.1	34.3	22.3
157	1	0.05	59.0	3.2	58.975	5.6	1.0	9.5
221	1	0.05	26.1	1.4	26.059	12.7	2.2	48.7
234	1	0.05	61.7	3.4	61.692	15.9	2.8	25.9
5370	2,213	100.0	1,834.4	100	0.829	568.9	100	31.0

Note: Top3: Brandenburgische Technische Universität Cottbus- Senftenberg (239 projects), Universität Potsdam (222 projects), Technische Hochschule Wildau (FH) (157 projects)

Source: own calculation based on the list of beneficiaries provided by TMWWDG (2014), SMWA (2015), Land Sachsen-Anhalt (2015), MWBT Mecklenburg-Vorpommern (2015), MWE Land Brandenburg (2015).

Table 4: Top ten beneficiaries of ERDF funds in East German *Länder* by amount of received funds (2007-13)

No.	Thuringia – Name of Beneficiary	%/%kum	Saxony – Name of Beneficiary	%/%kum	Saxony-Anhalt – Name of Beneficiary	%/%kum	Mecklenburg-West Pomerania – Name of Beneficiary	%/%kum	Brandenburg – Name of Beneficiary	%/%kum
1	Thüringer Aufbaubank	6.9	Fraunhofer-Gesellschaft e.V.	7.7	Investitionsbank Sachsen-Anhalt	10.4	Straßenbauamt Schwerin	10.3	NL West, HS Potsdam, (Landesbetrieb Straßenwesen)	4.1
2	FSU Universität Jena	3.3/ 10.3	LASuV, NL Plauen, (Landesbetrieb für Straßenbau u. Verkehr)	5.0/ 12.6	IBG Beteiligungs-gesellschaft Sachsen-Anhalt mbH	4.0/ 14.4	Hansestadt Rostock	6.9/ 17.2	Investitionsbank Brandenburg (NO)	3.9/ 8.0
3	TUUniversität Ilmenau	3.3/ 13.5	TU Universität Dresden	4.7/ 17.3	OvG-Universität Magdeburg	3.3/ 17.7	Straßenbauamt Güstrow	6.0/ 23.2	IHP GmbH - Microelectronics	3.7/ 11.8
4	Straßenbauamt Nordthüringen	2.4/ 15.9	LASuV, NL Meißen	4.1/ 21.5	Fraunhofer-Gesellschaft e.V.	3.2/ 20.9	Betrieb für Bau und Liegen-schaften M-V	5.3/ 28.4	TU Cottbus-Senftenberg	3.4/ 15.1
5	Fraunhofer-Gesellschaft e.V.	2.4/ 18.3	Landestalsperren-verwaltung	4.1/ 25.6	MLU Universität Halle-Wittenberg	2.8/ 23.7	Straßenbauamt Stralsund	4.3/ 32.7	NL Ost, NS Eberswalde	3.2/ 18.4
6	Straßenbauamt Mittelthüringen	2.1/ 20.4	LASuV, NL Zschopau	3.7/ 29.3	Landesbetrieb für Hochwasserschutz	1.9/ 25.6	Straßenbauamt Neustrelitz	3.3/ 36.0	TH Wildau (FH)	3.2/ 21.5
7	Straßenbauamt Ostthüringen	1.8/ 22.2	LASuV, NL Leipzig	3.0/ 32.3	MW_Investitionsbank	1.9/ 27.6	Landeshauptstadt Schwerin	2.0/ 38.0	NL West, NS Kyritz	2.5/ 24.0
8	Straßenbauamt Südwestthüringen	1.8/ 24.0	Universität Leipzig	2.2/ 34.4	Universitätsklinikum Halle / Saale	1.7/ 29.3	Tourismusverband M-V e.V.	2.0/ 40.1	Stadt Frankfurt (Oder)	2.2/ 26.3
9	Stadt Erfurt	1.4/ 25.3	Landeshauptstadt Dresden	1.8/ 36.3	Leibniz-Institut für Neurobiologie (LIN) Magdeburg	1.6/ 30.9	Hansestadt Wismar	1.8/ 41.8	Fraunhofer Gesellschaft e.V.	2.1/ 28.4
10	Institut für Photonische Technologien (IPHT) e.V.	1.2/ 26.6	LASuV NL Bautzen	1.5/ 37.8	Landeshauptstadt Magdeburg	1.6/ 32.5	Universität Rostock	1.7/ 43.6	NL Ost, HS Frankfurt Oder	1.8/ 30.2
...	...	...	...	...	...	...	...	...	...	...
Total		2,094		3,956		2,525		1,452		1,846

Sources: own calculation based on list of beneficiaries provided by TMWWDG (2014), SMWA (2015), Land Sachsen-Anhalt (2015), MWBT Mecklenburg-Vorpommern (2015), MWE Land Brandenburg (2015).

Among the beneficiaries – by *number of projects* implemented – we find universities and research institutes. The Fraunhofer Gesellschaft receives 7.7 % of *funding volume* in Saxony and is among the top ten beneficiaries in East German regions (table 4). Among the top ten beneficiaries are local and regional state agencies carrying out a number of infrastructure projects e.g. in road construction (e.g. *Straßenbauämter*). The top ten actors receive at least more than a quarter of the funds in Thuringia and even nearly half (44 %) of the funds in Mecklenburg-West Pomerania. Thuringia has the lowest concentration of funds in the hands of a few (i.e. the top ten beneficiaries).

Individual completion rates (i.e. absorption of funds for the completion of projects) tend to decrease with the number of projects a beneficiary has successfully applied for. Beneficiaries receiving grants for up to 4 projects) have finalised their projects better than beneficiaries with more ERDF projects. At the country level, Saxony has the highest average completion rate among the regions considered (44 % are fully paid out). Beneficiaries with 9 and more granted projects have a below average funds absorption rate. Mecklenburg-West Pomerania has paid out more than 50 % of the funds for completed projects, but only beneficiaries with less than two projects have absorbed on average a higher share of their allowed funds. The Thuringian completion rate is on average 23 %, but individual project completion rates tend to be independent of the number of projects.

Allocation of funds by type of actor

The beneficiaries of the structural funds can be classified according to the level of public and semi-public institutions as well as economic and social actors such as businesses, unions (*Verbände*), associations (*Vereine*) and other private actors.[1] Clustering the beneficiaries along these groups, we find that business organisations receive by between 28 % of the funds (in Saxony) and up to 38 % of the financial volume granted (in Thuringia) (table 5). Small firms and larger businesses may benefit via involvement of partners from unions (such as the chamber of commerce). Nevertheless, actors of public institutions (*Länder* governments, city and county councils as well as municipalities) are allowed to spend up to 54 % of the funds (in MV). At the regional (NUTS 2) level, the state actors include ministries, state banks and regional development agencies. At a more local level (NUTS 3), grants are given to the cities (*Städte* und *kreisfreie Städte*) and county councils (*Landkreise*) without

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[1] Business organisations are identified in the datasets by the different types of establishment they have registered in the public trade database (e.g. AG, GmbH, GmbH & Co. KG, KG, KgAA, OHG, Ltd., UG and mixed forms of them). Associations and unions are identified accordingly. Moreover, it was impossible to identity the self-employed people in the dataset since not all of them indicate that they receive funds for self-employment. Thus, the group of private actors contains all the projects conducted by actors that are listed with their names only.

differentiating to whom explicitly. The list contains also grants given to selected municipalities (*Gemeinden* and *Gemeindeverbände* below NUTS 3 level).

At least a third of the funds are distributed to these state actors in Thuringia. Educational facilities (universities, business schools and research institutes) receive around 13 % of the funds, while Saxony allocates nearly a quarter of the funds to universities and research institutes. The group of beneficiaries include associations (e.g. for social, environmental and other reasons), unions (chambers of commerce, but mostly semi-public water and waste-water unions) and facilities of the religious community.

The highest amounts of funds are spent by actors at the sub-national (NUTS 2) level (*Länder* governments including ministries and state banks). More local actors (NUTS 3 level) receive comparable smaller amounts: For example, for projects to be advised at the local level, the cities receive together as much as 10 % of the funds and up to 20 % of funds for projects . Municipalities and more rural *Landkreise* are allowed to conduct projects for in sum less than 5 % of the funds. The distribution of funds to state actors follows along the level of autonomy in decision making (national, regional, and local level). Actors at local (NUTS 3) level will benefit from the funds which are invested in their area although advice of investment decision is done at regional level (NUTS 2).

Some of the major infrastructure projects are decided on the regional level. The financial volume a beneficiary receives for (one or more) projects vary across the groups of actors considered here. Average *payment per beneficiary* is higher for state actors at the regional level than on the local level. A lower volume of funds per beneficiary is granted to the cities and county councils. Saxony granted even double the amount per beneficiary at the state level than Thuringia. Educational facilities have comparable high average amounts granted per institute. The amount of funds each institute receives is accumulated over a considerable number of projects and by various units within institutes. Thus, the mean values for projects conducted by universities and research institutes are lower than for projects of government institutions.

The completion of projects and the absorption of funds for completed projects vary considerable across regions. Thuringia and Saxony-Anhalt have the lowest rate of funds invested in completed projects. Completion of projects in Thuringia seems to be independent of the number of projects a beneficiary has to deal with. Considering completion of projects by the type of actor it is obvious that public and semi-public institutions have the lowest rate of completion of projects (table 5). Businesses and private actors receiving funds have much higher completion rates for projects. Among the state actors, the lowest absorption rate could be observed for actors at NUTS 2 level (*Landesregierung*). ERDF funds directed to projects at the more local city and municipality level is much better absorbed then at the county level.

Table 5: ERDF-Spending in East German *Länder* by type of actor (2007-13)

ID	Actor	No. of actors	No. of projects	m€	%	m€	%	absorption
			Total amount			Paid amount		
				Thuringia				
1	Land	16	98	385.0	18.4	5.9	1.3	1.5
2	City	74	298	224.0	10.7	58.1	12.2	25.9
3	County	27	129	48.0	2.3	21.9	4.6	45.6
4	Municipality	166	286	34.9	1.7	10.1	2.1	28.9
6	Religious community	14	24	2.5	0.1	0.8	0.2	32.0
7	Business	3873	7430	795.0	38.0	213.0	44.6	26.8
8	Educational	23	299	277.0	13.3	45.9	9.6	16.6
9	Privat persons	52	61	1.0	0.0	0.5	0.1	50.0
10	Association	78	206	93.8	4.5	16.2	3.4	17.3
11	Union	59	333	232.0	11.1	106.0	22.2	45.7
	Total	4382	9164	2,090.0	100.0	478.0	100.0	22.9
				Saxony				
1	Land	20	550	1075.3	27.2	138.0	8.0	12.8
2	City	251	1481	482.7	12.2	244.7	14.2	50.7
3	County	16	166	60.4	1.5	37.9	2.2	62.7
4	Municipality	188	379	68.8	1.7	44.2	2.6	64.2
6	Religious community	77	99	1.3	0.0	1.0	0.1	76.9
7	Business	3634	8522	1108.2	28.0	696.9	40.3	62.9
8	Educational	32	857	926.5	23.4	404.8	23.4	43.7
9	Privat persons	26234	29808	159.5	4.0	139.3	8.1	87.3
10	Association	100	148	20.9	0.5	18.7	1.1	89.5
11	Union	235	291	61.0	1.5	3.7	0.2	6.1
	Total	30787	42282	3956.1	100.0	1727.3	100.0	43.7
				Saxony-Anhalt				
1	Land	32	299	484.4	19.8	58.6	12.0	12.1
2	City	97	585	501.9	20.5	117.7	24.2	23.4
3	County	12	117	119.9	4.9	2.3	0.5	1.9
4	Municipality	61	90	17.2	0.7	8.4	1.7	48.9
6	Religious community	11	13	8.4	0.3	0.1	0.0	1.2
7	Business	1869	3872	793.4	32.5	233.3	48.0	29.4
8	Educational	22	317	343.8	14.1	19.2	3.9	5.6
9	Privat persons	506	809	21.3	0.9	12.5	2.6	58.6
10	Association	62	130	41.3	1.7	1.2	0.3	2.9
11	Union	45	257	113.3	4.6	33.2	6.8	29.3
	Total	2717	6489	2445.0	100	486.5	100.0	19.9

Table 5 continues

Table 5 continued

ID	Actor	No. of actors	No. of projects	Total amount m€	Total amount %	paid amount m€	paid amount %	absorption
			Mecklenburg- West Pomerania					
1	Land	11	97	453.3	31.2	285.9	34.0	63.1
2	City	39	180	277.0	19.1	109.7	13.1	39.6
3	County	5	10	7.2	0.5	1.8	0.2	25.0
4	Municipality	35	46	43.2	3.0	25.8	3.1	59.7
6	Religious	2	2	0.4	0.0	0.1	0.0	25.0
7	Business	1024	2807	458.7	31.6	333.9	39.8	72.8
8	Educational	15	254	78.8	5.4	31.4	3.7	39.8
9	Privat persons	126	166	21.8	1.5	17.2	2.1	78.9
10	Association	44	78	51.0	3.5	10.6	1.3	20.8
11	Union	35	128	60.1	4.1	23.3	2.8	38.8
	Total	1336	3768	1451.5	100.0	839.7	100.0	57.9
			Brandenburg					
1	Land	26	623	398.2	21.6	113.7	19.6	28.6
2	City	70	397	317.8	17.2	65.4	11.3	20.6
3	County	19	170	61.1	3.3	8.3	1.4	13.6
4	Municipality	76	120	55.2	3.0	7.3	1.3	13.2
6	Religious	8	10	2.4	0.1	0.6	0.1	25.0
7	Business	1615	2167	582.9	31.6	265.1	45.7	45.5
8	Educational	19	880	273.4	14.8	56.1	9.7	20.5
9	Privat persons	559	589	25.9	1.4	20.3	3.5	78.4
10	Association	53	128	39.3	2.1	14.8	2.6	37.7
11	Union	64	335	89.4	4.8	28.6	4.9	32.0
	Total	2509	5419	1845.6	100.0	580.2	100.0	31.4

Sources: own calculation and compilation based on list of beneficiaries provided by TMWWDG (2014), SMWA (2015), Land Sachsen-Anhalt (2015), MWBT Mecklenburg-Vorpommern (2015), MWE Land Brandenburg (2015).

5. Conclusion

In this paper, we analyse the implementation of ERDF funds in East German regions in the financial perspective 2007-2013 to figure out how allocation of the funds follows the objectives formulated in the programmes. By the end of 2013 more than 66,000 projects have been granted to more than 40,000 beneficiaries. Regional implementation of structural funds benefits a number of applicants. Only a few beneficiaries have ten and more projects supported from the ERDF. But, a few beneficiaries control the highest share of the funds: the top ten actors receive at least more than a quarter of the funds (in Thuringia) and even up to 44 % of the funds (in Mecklenburg-West Pomerania). We find that state actors, businesses and educational facilities are the main beneficiaries and together receive at least 85 % of the funding volume. The distribution of funds to state actors follow the level of subsidiary in decision making (national, regional, and more local level) with higher amounts spent at higher levels of citizen's interest representation.

Although regions differ with respect to their funding priorities, some regions deviate by more from committed priorities than other. Concentration of the funds varies with respect to the *geographical allocation*: Only a few East German *Länder* provide ERDF expenditures at more detailed NUTS 3 level. These figures show that managing authorities tend to give grants to urban and intermediate NUTS 3 areas by more – in per capita terms - than to projects in rural areas with on average lower per capita GDP. Dellmuth (2011b) argues that preliminary talks between *Länder* governments, county districts and municipalities can be selective and favour specific areas depending on the political priorities of state governments.

East German *Länder* differ also regarding *the spending of the public funds in certain economic sectors*. A few sectors still receive above average ERDF funds per employee and gross value added while other sectors do not. While implementation reports show high rates of funds absorption (i.e. in terms of grants allocated to projects), the list of beneficiaries show that for a considerable number of granted projects the final funds rate has not been paid by the end of 2013. A sizeable part of the budget seems to have already been distributed via intermediate payments (not reported in the beneficiary list), but nearly a quarter of the unclosed projects have yet a length of more than four years. The spending of the funds last until the end of 2015 so that the upcoming final reports need consideration for an ex post evaluation of funds implementation.

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