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An Analysis of the Impact of Cohesion Policy in the Transport Sector

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Abstract: *With reference to the general importance of transport infrastructure for regional development, this paper takes a different approach to the analysis of the European Union cohesion policy funding and views it in terms of transport oriented business entities. It analyses the data matrix of cohesion policy funded projects in the period 2007 – April 2011, in terms of the beneficiary characteristics, project characteristics and spatial distribution within the districts of the Czech Republic. The results show particular activity of public sector entities in transport infrastructure oriented projects, while private sector entities focus rather on human resources and technological advancement projects. The analysis confirms the predominance of small and medium enterprises among the beneficiaries in the majority of districts, but results contradict the officially declared preference of economically lagging regions.*

Key words: Cohesion Policy · Private Sector · Public Sector · Small and Medium Enterprises · Transport

JEL Classification: O18 · O22 · R42

1 Introduction

Transport and transport infrastructure are beyond doubt among the most important factors influencing the economic development of a region. While the exact relationship between the transport sector and economic growth are difficult to describe, it is widely accepted that inaccessibility and the poor state of transport infrastructure negatively affect economic performance, which is especially true in regions and peripheries which are already economically less advanced (Graham, 1998). Investments in transport infrastructure are therefore often the focus of public attention, as well as their intended and unintended consequences, including the multiplier effects they cause (Button, 2010). These investments usually lead to improvements in transport performance, better access to new markets, and growth in specialisation and also produce enterprises which are influenced by growth in imports and forced to be more competitive at the same time (Lakshmanan, 2011).

The issues of transport are also emphasised by the European Union, which named transport policy as one which should be among common policies and furthered its scope, as well as the scope of economic growth, by adding the element of sustainability. Within this framework not only the quality of infrastructure is important but also other related aspects, such as human resources development, technological development within the field of transport or reduction of the negative impacts of transport on the environment (European Commission, 2009, 2011).

The national level of planning emphasises the issues of transport especially in the document entitled Transport Policy of the Czech Republic 2005-2013, updated in 2011. This document respects the goals set by the European Union and, apart from infrastructure, deals also with questions of safety, funding and regional transport. In the last mentioned aspect the document recommends that the regions produce their own strategies concerning transport (Ministerstvo dopravy, 2004). The

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importance of regional transport is then reflected in the rather strong emphasis on these issues in the regional strategies, especially in terms of infrastructure building and public transportation (Grebeníček & Bednář, 2011).

Taking into consideration the importance of transport that is expressed by the European Union at national and regional levels, it is certainly understandable that the Operational Program for Transport is the largest Czech operational program in terms of financial allocation and that even the regional operational programs include such transport-oriented priority axes, with great shares of their own financial allocations (Hájek et al, 2011).

With reference to the importance of the transport sector, this analysis deals with the importance of transport as a sector in the Czech economy and the activities of subjects active in this sector who receive financial aid from the European Union (within the framework of the Convergence objective that enables funding for projects implemented in the entire Czech Republic, with the exception of the capital Prague), as it is noted that the ability to use this funding may influence regional development (Holátová, 2007). This analysis focuses on funding from the European Fund for Regional Development, the European Social Fund and also the Cohesion Fund, which were used in the projects of the current programming period from its beginning in 2007 until April 2011 and also includes the spatial dispersion of the beneficiaries in the Czech Republic. The activities of transport enterprises are discussed in the conclusion. The activities of enterprises active in other sectors will be investigated in further research.

2 Materials and Methods

The results of the survey are based on the questionnaire evaluation, frequency and statistical hypothesis testing in the chapter below.

The analysis of the activity of transport sector enterprises is based on the data of all projects co-funded from Czech operational programs within the Convergence objective in the period 2007 – April 2011. The matrix containing the project data was derived from information published by the Centre for the Regional Development of the Czech Republic, which is an allowance organization of the Ministry for Regional Development. It included the unique identification number of the enterprise, the name of the beneficiary enterprise, the seat specified by the municipality, district and regions, the amount of the European Union funding, the name and number of the project and other attributes. This matrix was, of course, about all implemented projects whose beneficiaries were enterprises from various sectors. The enterprises/beneficiaries later had to be further specified. As this particular research deals with the transport sector, the most reliable identification that could be made was only in accordance with the CZ-NACE classification of enterprises. The unique identification number was connected to the CZ-NACE classification of enterprise activities. This enabled the author to select projects that were implemented only by enterprises whose activities were concerned mainly with land transport and pipelines (CZ-NACE 49), water transport (CZ-NACE 50), air transport (CZ-NACE 51) and support activities for transportation (CZ-NACE 52.2). The identification number was also used in the search of the national register of business entities which provided additional information about institutional sectors and enterprise size, including micro-enterprises, and small, medium and large enterprises, as specified by the European Commission (European Commission, 2003). The author has added the identification of the thematic focus of the projects and which specific operational program funded each project. The attributes and values they take are shown in table 1. The projects were then analysed from different points of view which the attributes allowed. The institutional sector attribute was important to distinguish private and public sector subjects. The enterprise size was a particular focus in private subjects. While the third part of this article discusses all the projects, the fourth part later focuses solely on private enterprises and ex-

cludes beneficiaries such as the Ministry of Transport, regional and local government and budgetary-connected organizations that most often focus on the management of transport infrastructure. The projects were analysed with descriptive statistics and in terms of spatial distribution, using information about the headquarters of individual beneficiaries. For readers´ convenience, the spatial aspect is expressed graphically.

Table 1 Attributes of individual projects and the value they take

Attribute	Possible values
Thematic focus of the project	Transport infrastructure construction Development of the business environment Development of the human resources Technologies and innovation Improving the environment
Operational program	Transport Integrated Human resources and employment Education for Competitiveness Enterprise and innovation Environment Regional
Institutional sector of the beneficiary	Local government Central government Foreign controlled enterprises Private national enterprises
Enterprise size	Microenterprise Small enterprise Medium-sized enterprise Large enterprise Unspecified
CZ-NACE	Land transport and pipelines Air transport Support activities for transportation

Source: author

3 Results

3.1 The transport sector in the Czech economy

This part briefly discusses achievements of the transport sector in the economy of the Czech Republic in terms of added value and employment in the 2001-2010 period, according to the Czech Statistical Office. Due to lack of statistical data on the lower CZ-NACE categories, information about the support activities for the transportation category is merged with data on warehousing. The most prominent of transport activities in the terms of added value is the share of land transport and pipelines. However, in the total of added value it declined sharply from 5% of the share and is now stagnating around 3.7%. However, it still ranks eighth among all the CZ-NACE categories of this particular characteristic. The share of warehousing and support activities for transportation oscillated in the long term around 2% and grew only in the second half of the period. The share of air transport and water transport are proportional to the overall size of these subsectors in the Czech economy, with the air transport share at about 0.3% and the water transport share significantly lower at one tenth of one per cent. From the point of view of employment, the land transport and pipelines is the most significant subsector. At the end of 2010, there were 200 000 employees (converted to full time) which represent more than 4% of all employees in the Czech Republic at that time and this was the seventh most numerous of 88 CZ-NACE categories. The warehousing and support activities for transportation sector created more than 58 thousand full time jobs at the end of 2010, which

corresponded with 1.1% of total employment. Air transport counted about 5 000 full-time jobs, and water transport roughly about 800, their shares on total employment being below 0.1% - see figure 1. The total count of jobs created directly by the transport sector slowly declined, but not as sharply as their share of added value. The total number of economic subjects active in the above mentioned CZ-NACE categories amounted for 73.5 thousand at the end of 2010, with the most prominent category being the land transport and pipeline (64 thousand), followed by warehousing and support activities for transportation (8.5 thousand subjects), water transportation (171 subjects) and air transportation (89 subjects).

3.2 Drawing European funding

The drawing of funds from the European Union Cohesion Policy Fund was analysed by examining the characteristics of 402 projects that had beneficiaries active in one of the CZ-NACE categories concerning transportation in the period 2007 – April 2012. Here the warehousing and support activities for transportation category could be divided and warehousing activities are excluded from the analysis. The largest number of approved projects was applied for by the enterprises active in land transport and pipelines, followed by enterprises specialising in support activities for transportation and air transport. There were no approved projects whose beneficiary would be mainly active in water transport – see table 2. The projects came from both the public and private sectors, although the public sector (represented by local or central government and budgetary-connected institutions) accounted for 220 out of 402 projects.

Table 2 Number of projects submitted by transport sector entities

Institutional sector	Činnost podle CZ NACE		
	Land transport and pipelines	Air transport	Support activities for transportation
Local government	23	0	80
Central government	12	0	105
Foreign controlled enterprises	24	1	6
Private national enterprises	138	0	13

Source: author, based on Centre for Regional Development of the Czech Republic

The analysed projects were submitted in 6 different thematic and 6 regional programs of Convergence objectives (see table 3). Previous research conducted by Hájek & Novosák showed that the Operational Program for Transport and regional operational programs resources were used mainly by public sector entities for construction and reconstruction of transport infrastructure (Hájek & Novosák, 2010).

Table 3 Distribution of projects among operational programs/ Rozdělení projektů podle operačních programů

Operational program	CZ-NACE		
	Land transport and pipelines	Air transport	Support activities for transportation
Transport	1	0	108
Integrated	1	0	0
Human resources and development	55	1	7
Education for competitiveness	1	0	0
Enterprise and innovation	71	0	5
Environment	26	0	5
Regional	42	0	79

Source: author, based on Centre for Regional Development of the Czech Republic

The thematic focus of the projects reflects their wide scope. Apart from the obvious projects focused on construction of transportation networks, there are enterprises that focus their projects on human resources development and qualifications, on fostering their own businesses, on finance of

technological advancements and on innovations in or focus on the environment. However the previous text already states that construction and maintenance of transport infrastructure is the main topic financed solely from the Operational Program for Transport and priority axes of each of the six existing regional operational programs. The second most prominent topic is the development of human resources working in transport oriented enterprises. In terms of operational programs architecture, these projects are strongly connected to Education for Competitiveness and Human Resources Development and Employment programs. Innovation projects, technology advancement projects and business environment related projects bear strong connection to the Enterprise and Innovation program, and some of them also to regional operational programs. Environment related projects are mostly funded from the operational program of the same name.

Table 4 clearly shows that land transport and pipelines oriented enterprises, together with enterprises providing support activities for transportation, implemented thematically, are the most widely spread portfolio of projects, even though the latter mentioned is predominantly active in transport infrastructure construction. This disparity is caused by the presence of numerous public sector entities that apply for projects within the Operational Program for Transport and in regional operational programs which are focused primarily on infrastructure.

Table 4 Distribution of projects according to thematic focus/Rozdělení projektů podle tematického zaměření

Thematic focus	CZ-NACE		
	Land transport and pipelines	Air transport	Support activities for transportation
Transport infrastructure construction	37	0	187
Development of the business environment	37	0	3
Development of human resources	57	1	7
Technologies and innovation	40	0	2
Improving the environment	26	0	5

Source: author, based on Centre for Regional Development of the Czech Republic

The amount allocated to the selected projects exceeds 128.5 billion Czech Crowns (CZK) and the majority of the funding is allocated to enterprises active in support activities for transportation. More detailed perusal of the data matrix revealed this is due to the data set including financially high-demanding infrastructural projects which are applied for and later implemented by public sector entities. Therefore the following chapter will deal with projects of private sector beneficiaries only.

3.3 Private entities activity

The beneficiaries from the private sector applied for and later were approved for funding of 182 out of 402 analysed projects in the period 2007 – April 2011 (see table 5). These can be further divided into foreign controlled enterprises and national private enterprises that account for the majority of the activity with 83% of approved projects. The characteristic they have in common is their affiliation to the land transport and pipelines sector.

As for financial allocation, these enterprises gained more than 1 billion CZK from European Union resources which are rather unevenly distributed among the subsectors. It was pointed out that the land transport and pipeline sector accounted for 83% of projects. Furthermore, the same sector accounted also for 92% of financial allocations of these projects. The involvement of entities providing support activities for transportation is significant when the public sector is excluded, while air transport is rather insignificant, with only one project recorded.

Table 5 Approved projects in the private sector

Institutional sector	CZ-NACE		
	Land transport and pipelines	Air transport	Support activities for transportation
	Share of approved projects/share of allocation		
Foreign controlled enterprises	15% / 13%	100% / 100%	32% / 35%
Private national enterprises	85% / 87%	0% / 0%	68% / 65%

Source: author's calculation based on Centre for Regional Development of the Czech Republic

In terms of thematic focus, the construction of transport infrastructure and its maintenance is significantly weakened (see table 6) when the public sector is excluded, as these projects are largely managed by central or local government. The most numerous projects in the newly defined group of private entities are represented by the topics of human resources development, primarily funded from the Operational Program for Human Resources and Employment. Research and development of new technologies and innovation is the second largest group of projects whose support is mainly connected with the Operational Program for Enterprise and Innovation. This operational program in conjunction with the regional operational programs is the largest source of funding for projects submitted under the thematic category of development of the business environment as well.

The topic of transport infrastructure is the least represented one among the private beneficiaries. There is an interesting twist however. The private beneficiaries who ask for large allocations in this topic most often utilize the regional operational programs while the public beneficiaries concentrate the largest projects in the general Operational Program for Transport. This is certainly influenced by the fact the Transport program is more or less intended for central government institutional use and is far less flexible than regional operational programs that are of more use to the private sector.

The transport infrastructure projects, however, belong among the most financially demanding regardless of beneficiary or funding program. The average allocation exceeds 9.5 million CZK for all beneficiaries, 13 million CZK for private beneficiaries.

Table 6 Approved projects in the private sector by thematic focus

Thematic focus	CZ-NACE		
	Land transport and pipelines	Air transport	Support activities for transportation
	Share of approved projects / share of allocation		
Transport infrastructure construction	7% / 15%	0% / 0%	37% / 36%
Development of the business environment	22% / 27%	0% / 0%	16% / 13%
Development of human resources	30% / 17%	100% / 100%	37% / 31%
Technologies and innovation	25% / 24%	0% / 0%	11% / 20%
Improving the environment	16% / 17%	0% / 0%	0%/ 0%

Source: author's calculation based on Centre for Regional Development of the Czech Republic

The policy of the European Union has long supported the development of small and medium-sized enterprises in accordance with the general findings that indicate these enterprises have difficulties in accessing financial resources (see e.g. Tödtling & Kaufmann, 2001 or Müller & Zimmerman, 2009). Therefore it is important to distinguish among the projects from the point of view of the beneficiary size as it is important to find out whether the small and medium-sized enterprises are indeed able to acquire support from the structural and cohesion funds. From the point of view of the entire Czech Republic, the most successful beneficiaries are medium-sized enterprises which applied for 87 out of the analysed projects, with allocations amounting to half a billion CZK. Small enterprises were approved in 48 cases and received 238 million CZK. Large enterprises are in some cases excluded from applying. As this analysis did not focus on a particular operational program, it

is certain there were some calls for applications they had to pass over. Even so, applications were approved in 32 cases and the allocations received amounted to 224 million CZK. Microenterprises were the least successful in terms of total numbers of projects and allocations, see table 7. These findings however, support the overall emphasis on small and medium-sized enterprise support, which is deemed to be important for the development of the entire economic system of the Czech Republic and also the European Union (see for example Wennekers et al., 2010 or Bruce et al., 2009).

Table 7 Distribution of projects by beneficiary enterprise size

Enterprise size	Činnost podle CZ NACE		
	Land transport and pipelines	Air transport	Support activities for transport
Unspecified	1% / 0,5%	0% / 0%	0% / 0%
Microenterprise	9% / 7%	0% / 0%	0% / 0%
Small enterprise	27% / 23%	0% / 0%	21% / 25%
Medium-sized enterprise	47% / 48%	0% / 0%	58% / 54%
Large enterprise	17% / 21,5%	100% / 100%	21% / 21%

Source: author's calculation based on Centre for Regional Development of the Czech Republic

The regional view of the dispersion of European Union resources among projects of private sector enterprises, whose activities are tied mainly with transport according to the CZ-NACE system, is made at the level of districts (NUTS III units). As the previous text shows that the majority of financial aid is concentrated in land transport and pipeline activities, this analysis is excluded from the more detailed division of categories and looks at transport related activities as a whole. The attribute of enterprise size is of more importance as it may help to reveal whether there are differences among the regional ability of small and medium-sized enterprises to apply for and implement a European Union funded project.

The largest share of transport oriented enterprises is concentrated in the capital Prague (18 %) and other districts where the largest Czech cities are, e.g. Brno-City (3,3 %), Ostrava-City (2,7 %) and in surrounding districts – see figure 2. Accordingly many projects were applied for by applicants from Prague, Brno-City, and Ostrava-City. Prague is not exempt from this list as there is the possibility to apply for projects by enterprises seated in Prague, however, the project itself must be implemented elsewhere in the Cohesion regions. This explains the disproportion between the share of registered enterprises, which is the largest, and the share of projects. When comparing the activity of enterprises among the NUTS III districts in figure 2, it is well recognisable that the largest numbers of projects were implemented by enterprises from already mentioned core urban districts concentrated around the largest cities of the Czech Republic. There is, however, an exception in the north-eastern part of Bohemia where the Náchod district on the state border claims many more projects than its surroundings and is well comparable with core urban areas. The more detailed analysis has shown that all these projects are implemented by only three unique enterprises that are particularly active in the Operational Program for Enterprise and Innovation. All of them belong among small and medium-sized enterprises and are exceptionally active in applying for projects, and implement these projects in the same region where they have a seat, thus ensuring the entire allocation is spent there. The implementation of projects outside the region of the seat of the enterprise is quite common and raises the question of the division of the allocation among the enterprise headquarters and the regions where the project is officially implemented. It is of special interest within economically lagging regions that are favoured by central government in terms of gaining more European Union funding (Felixová, 2012). These regions, however, proved to be lagging also in transport enterprise activities. Enterprises located in these regions gained only 32 % of projects and 26 % of allocations, showing inferior activities and results, even though they officially have certain advan-

tages in the call for proposals. This raises the question whether the official attitude to the economically lagging regions is implemented in the most efficient way.

Small and medium-sized enterprises are more successful overall than large enterprises in terms of gained allocations as evidenced in table 7. Their regional activity mostly corresponds with this finding as they gained most of the allocations in all but a few districts of the Czech Republic and the same can be said about economically lagging regions where small and medium-sized enterprises also represent the dominant group of active enterprises.

4 Conclusion

The analysis findings may be summarized in several points. At first it is clear that the majority of projects implemented by transport oriented entities from both public and private sectors aims at the construction and reconstruction of transport infrastructure, which is in accordance with the general perception of the importance of said infrastructure for economic development at regional and national levels. The originators of these projects are almost solely entities from the public sector, be it local or central governing bodies of budgetary-connected organizations. The lack of activity of public sector entities within the fields of innovation and environment is rather discomfiting, particularly considering the regard that the European Union now has for matters of sustainable development where one of the integral parts includes care and improvement of environment. This lack of activity is partly compensated for by private sector entities whose dominant topics are mainly human resources and their development, and the business environment. A very positive signal in terms of transport sector development is the noticeable amount of cohesion policy funding that is invested into the advancement of technologies and innovation by private sector entities.

The activities of private sector entities are mainly carried out by small and medium-sized enterprises that implemented larger amount of projects, and that were also financially more demanding on average. In terms of spatial distribution, the activities are concentrated mainly in the districts of large Czech cities. With public sector entities this distribution is concentrated almost solely in the capital Prague, which is natural due to the location of central government and connected organizations. These focus on the most expensive infrastructure related projects.

This article presents the beginning of research focused on activities of entities from different economic sectors in the implementation of cohesion policy projects. The research will continue with its focus shifting to different sectors to enable the author to do larger comparisons among them.

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