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## IMPACT OF THE EU FUNDS IN THE FIELD OF TRANSPORT INFRASTRUCTURE – NATIONAL AND REGIONAL DIMENSION

JEL Classification Codes: R. R4. R42

**Keywords:** transport infrastructure, National Development Plan 2004-2006, National Cohesion Strategy 2007-2013, EU funds, projects, regional development

**Abstract:** The following study aims at presenting the scale and impact of the projects concerning the development of the transport infrastructure in Poland cofinanced from the European Union's funds. The authors present the hypothesis that to date the impact of the said projects (implemented within the framework of both National Development Plan 2004-2006 and the National Strategic Reference Framework 2007-2013) is – due to both prolonged period of negligence in this area and dynamic economic development – not significant enough to satisfy the existing needs in the analyzed area. It is emphasized, however, that the said projects have constituted an important part of the investment effort aimed at systematic improvement of the transportation system in Poland. The authors assert not only that in order to meet the existing needs in this field the investment process should continue under the framework of the financial perspective 2014-2020, but also that the continued development of the transport infrastructure should be based on the network-based paradigm and grounded in a solid institutional framework.

# WPŁYW WYKORZYSTANIA FUNDUSZY UNIJNYCH W OBSZARZE INFRASTRUKTURY TRANSPORTOWEJ W WYMIARZE KRAJOWYM I REGIONALNYM

Klasyfikacja JEL: R, R4, R42

**Słowa kluczowe:** infrastruktura transportowa, Narodowy Plan Rozwoju 2004-2006, Narodowa Strategia Spójności 2007-2013, fundusze unijne, projekty, rozwój regionalny

Abstrakt: Celem pracy jest ukazanie wpływu projektów realizowanych przy współudziale funduszy UE na stan infrastruktury transportowej. Stawiamy tezę, że wpływ projektów inwestycyjnych współfinansowanych ze środków UE na sytuację w zakresie infrastruktury transportowej, z uwagi na długoletnie zaniedbania w omawianej sferze oraz dynamiczny rozwój ekonomiczny nie pozwoliły dotychczas (zarówno w wyniku realizacji projektów NPR 2004-2006, jak i dotychczasowej implementacji inwestycji przewidzianych w ramach NSRO 2007-2013) na zaspokojenie potrzeb w analizowanym obszarze. Stanowiły one jednak bardzo ważny etap procesu inwestycyjnego, mającego na celu systematyczne usprawnienie układu komunikacyjnego w Polsce. Zaspokajanie istniejacych w tej zakresie potrzeb powinno być kontynuowane przy wsparciu ze środków UE w kolejnych perspektywach finansowych, a pełna ocena skali zaspokojenia istniejących potrzeb dzięki omawianym inwestycjom będzie możliwa nie wcześniej niż po zakończeniu realizacji projektów w ramach NSRO 2007-2013, choć nie można wykluczyć, że konieczna będzie ich kontynuacja w ramach kolejnej perspektywy finansowej. Należy jednak – już obecnie – podkreślić, że dalsza rozbudowa tej infrastruktury powinna odbywać się w oparciu o sieciowy paradygmat jej rozwoju i opierać sie na solidnych podstawach instytucionalnych.

### INTRODUCTION

Any analysis of the transport infrastructure's development in Poland must take into account the country's location on the international transportation routes which link the east and the west of the European continent. Such a location offers Poland potential opportunities to gain significant benefits. On the other hand, it must be remembered that this situation creates also certain risks associated with a significant acceleration of economic processes in the countries of Central and Eastern Europe, which lead to an abrupt increase in traffic congestion and may have negative environ-

mental impact. At the same time the implementation of actions, aimed at improving the communication infrastructure within the framework of ambitious plans of road and railway infrastructure's development, was intensified thanks to both Poland's accession to the European Union and the resultant access to additional sources of funding. The question arises whether 'quantitative' progress in terms of expenditures of the EU funds earmarked for the said investments means optimal exploitation of opportunities to enhance the competitiveness of Poland by the 'strategic development of infrastructure'. Therefore, the context of preparation and implementation of the EU co-financed projects should be taken into account by stressing, among others, the fact that the errors committed in the preparation of project documentation can lead to social protests, which in turn delay the absorption of the EU funds. Therefore, the units responsible for the investment process have to assure that all projects are implemented in a manner that minimizes their environmental and social impact.

# THE EU CO-FINANCED PROJECTS IN THE FIELD OF INFRASTRUCTURE (NATIONAL DEVELOPMENT PLAN 2004-2006 AND THE 2007-2013 NATIONAL STRATEGIC REFERENCE FRAMEWORK)

Since the categories of structural expenditures defined within the context of the 'transport' projects implemented under the NDP 2004-2006 differ slightly from the respective categories of the said expenditures in the framework of the NSRF 2007-2013 intervention and our objective is to present the intervention classified according to different modes of transport infrastructure, realized jointly under both strategic frameworks, we have introduced our own classification of the said projects (see Table 1).

The quantitative analysis of the EU co-financed projects in the field of transport infrastructure which were concluded (under either the NDP or NSRF) until December 31 2009, attests to significant domination – in terms of projects' quantity and value – of activities related to construction and modernization of public roads (in the 'national, regional and local' category). In total, this category of projects accounted for 88.1% of the number (and 45.2% of the value) of all 'transport infrastructure' projects under the combined framework of NDP and NSRF. The number of projects in the category 'roads – national, regional, local' construction listed in the statistical base as of December 31, 2009 stood at 2192, and their total value amounted to 25.6 billion zlotys. As of the end of 2009 1,679 projects were completed (with the total value of nearly 13.6 billion zlotys). The second largest category of transport projects implemented under the NDP and

Table 1. Transport projects under implementation within the framework of the NDP 2004-2006 or NSRF 2007-2013, as of December 31 2009 (combined)

Саведогу	Numl projects finis	Number of projects – total/ finished	Struct quan projec tor	Structure - by quantity of projects (%) – total/ finished	Value of (millio Total /	Value of projects (million zloty) Total / finished	Percentage of finished projects (%) (quantity/ value)	tage of projects tantity/ te)	EU co-financing (million zloty)/ percentage of Project value in a category	tancing zloty)/ age of ulue in a	Structure – by value of projects (%) Total/ finished	e – by rojects tal/ ed
Railways (railroads, rolling-stock including TEN-T)	09	38	2.4	2.0	11049.6	5460.3	63.3	49.4	6976.4	63.1	19.5	22.3
Motorways and expressways (including TEN-T)	11	5	0.4	0.3	15841.5	2837.9	45.5	17.9	12395.9	78.2	27.9	11.6
Roads (national, regional and local)	2192	1679	88.1	88.3	25639.5	13550.9	9.92	52.9	16974.0	66.2	45.2	55.4
Bicycle tracks	15	9	9.0	0.3	50.4	6.3	40	12.5	28.4	56.3	0.1	0.0
Urban transport	40	26	1.6	1.4	2090.4	1356.3	65	64.9	1063.6	50.9	3.7	5.5
Multimodal transport (including TEN-T)	10	4	0.4	0.2	367.2	169	40	46.0	159.5	43.4	0.6	0.7
Intelligent transport networks	31	30	1.2	1.6	281.1	278.6	8'96	99.1	159.0	56.6	0.5	1.1
Airports	4	1	0.2	0.1	62.1	10.5	25	16.9	39.6	63.8	0.1	0.0
Seaports /port infrastructure	19	14	8.0	0.7	712.7	497.5	T3.7	8.69	447.9	62.8	1.3	2.0
Other transport infrastructure	106	66	4.3	5.2	640.1	272.4	93.4	42.6	279.3	43.6	1.1	1.1
Total NPD and NSRF												
	2488	1902	100	100	56734.4	24439.7	76.4	43.1	38793.9	62.9	100	100

Source: Authors' calculations based on the Ministry of Regional Development database. \* Due to 'rounding' the numbers in certain columns do not ad up to the 'total' figure.

NSRF consisted of intervention in 'motorways and expressways - including TEN-T', where 11 projects were classified, with the combined value of over 15.8 billion zlotys (approximately 28 % of all projects in the field of transport infrastructure). Five projects (with the value of 2.8 billion zlotys) were completed in this group as of the end of the reporting period.

The analytical category 'railways – including the TEN-T network', (which groups both projects related to railway infrastructure as well as projects in the sphere of rolling stock) consisted of 60 projects, with the total value of slightly over 11 billion zlotys (2.4% of the total number of NDP and NSRF transport projects and or 19.5% of their value). As of the end of the reporting period 38 projects were completed, of the total value of nearly 5.5 billion zlotys. The other categories of transport projects grouped much fewer projects whose value was significantly lower than in the above mentioned groups. There were 40 projects in the field of urban transport, with the value slightly over 2 billion zlotys (as of the end of the reporting period, or December 31, 2009, 20 such projects, with the combined value of nearly 1.4 billion zlotys, were completed).

The detailed information on the relevant categories of transport projects undertaken in the framework of the NDP 2004-2006 or NSRF 2007-2013 is summarized in table 1; however, we would like to emphasize that the projects classified by us as 'other transport infrastructure' reflect basically the NDP 2004-2006 intervention related to 'upgrading the regional road infrastructure'.

## ASSESSMENT OF IMPLEMENTATION OF THE EU CO-FINANCED PROJECTS IN THE FIELD OF TRANSPORT INFRASTRUCTURE

## a) Impact of the EU funds – regional dimension

Basing on the available evaluation studies on the impact of the EU cofinanced investment projects in the field of transport infrastructure on the development of the transport infrastructure on national and regional (NUTS-2) level, as well as upon analyzing the database of the NDP 2004-2006 projects we infer that among the major beneficiaries of the measures undertaken within the framework of the National Development Plan 2004-2006 were (Komornicki 2010):

- areas located in the belt of central-eastern Poland (Konin Łódź Warszawa-Siedlce),
- Lower Silesia (Wrocław and the areas located in the belt from Wroclaw to the Polish-German border),

- areas located in the belt: śląskie voivodeship Cracow (in the section Gliwice-Tarnów),
- Eastern Pomerania (the area between Gdynia to and including the counties of Elblag and Braniewo),
- belt in which the railway line Warsaw-Gdynia is located,
- Poznan and its surrounding areas
- the areas surrounding selected cities (for example Szczecin, Puławy, Chojnice).

It should be emphasized that the greatest benefits from the transport projects finished within the framework of the National Development Plan 2004-2006 have been observed in both the southern and western voivodeships of Poland and in the regions Gdańsk, Gdynia, Sopot, Łódź and Warsaw. Significantly less prominent support was extended to the north-eastern regions (excluding the Pomeranian voivodeship). It is estimated that the other projects – undertaken in certain large and medium cities – were primarily confined to limited locations, and that in certain regions (such as north-eastern Poland, Central Pomerania, wielkopolskie (outside of Poznan), the southern part of łódzkie voivodeship and świętokrzyskie there were practically no big investment projects undertaken.

As far as the 'sectoral' breakdown of the NDP 2004-2006 projects is concerned, the decisive primacy of road investments is visible, and it should be stressed that these projects were accompanied by simultaneous modernization of railway lines only in the case of the major communication networks (or by projects related to urban transport undertaken solely in large agglomerations).

Among the largest EU co-financed projects there were interventions located in the major trans-European transport corridors (in the majority of cases such corridors were congruent with the TEN-T network). The authors of the cited evaluation study, identified several so called corridors, in which the most important of these projects were concentrated (Komornicki 2010, p. 48):

- corridor I: upgrading of the section of the S8 expressway (Radzymin-Wyszków), including the construction of the ring road around Wyszków and the bridge on the Bug river.
- corridor II: construction of a section (between Konin and Stryków) of the A2 motorway 'modernization of both national road no 2 (Siedlee-Terespol) and of the national road no. 68 (which provides access to the national road no. 2 leading to the Kukuryki crossing on the Polish-Belarusian border), modernization of several sections of the E-20 railway line (Warsaw-Berlin-Moscow);

- corridor III / III A: construction of a new sections of A4 motorway (Kleszczów-Sośnica and Zgorzelec-Krzyżowa), modernization of the section between Krzywa and Wroclaw, modernization of the national road no. 4 (section from Krakow to Tarnow), construction of additional lane on the future A18 motorway, repairs of selected sections of the E-30 railway line (connecting Dresden-Wrocław-Kraków-Lviv)
- corridor VI construction of A1 motorway (from Sośnica to Gorzyczki), and of road S1 (from Bielsko to Cieszyn), modernization of the railway line E65 (section Warsaw-Gdynia).

In the field of rail transport, the concentration of the EU co-financed expenditures was higher than in the case of road transport, but the resources devoted to railway investment were earmarked almost exclusively for the modernization of existing railway networks, while no new lines were developed. It should be also emphasized that significant effect of the modernization efforts on the condition of railway infrastructure will be revealed only after the completion of those projects (in other words when the modernization of the entire length of lines under reconstruction is finished), in other words in a few years.

In the case of road infrastructure the majority of the EU funds was earmarked for the construction of motorways and expressways, followed by interventions related to the national roads, with significantly lower support extended to investments in regional and local roads (it should be also noted that in case of the two latter categories of roads the investment projects were highly 'spatially distributed' or scattered).

In the field of urban transport the intervention of the National Development Plan 2004-2006 resulted in, among others: the construction and modernization of the tram line in Warsaw, the modernization of the tram line in Wroclaw, the construction of a new tram line in Poznan and integration of the public transport system in Krakow. Moreover, the intervention was crucial to finishing the construction of the final section of the first subway line in Warsaw. Summing up, the greatest degree of support of the activities in the field of urban transport was extended to Warsaw, Gdańsk, Gdynia, Sopot, Kraków, Łódz, Wrocław and Poznań. Certain doubts arise in relation to the EU funds' expenditures earmarked for the public transport fleet, which - according to some experts - have a weaker positive impact on the regional development than the investment in 'hard' (tracks) infrastructure (Komornicki 2010, p. 51). Though projects implemented in the field of urban transport did not lead to an increase in the share of the said transport in the transport volume of people in cities, it can be assumed that such projects were crucial in reducing the pace of the decline of the said share.

The development of maritime transport entailed completion of the construction of infrastructure of the West-Pomerania Logistics Centre, and the modernization of the entry to the port in Gdynia. The co-financing was almost non-existent – with the exception for the projects related to the construction of the piers for tourists – in the field of inland waterway transport. A relatively small commitment of the NDP 2004-2006 funds was also observed in the aviation sector, where it involved modernization of the passenger terminal at the airport Szczecin-Goleniów (Komornicki 2010, p. 51).

According to the results of the evaluation commissioned by the Ministry of Regional Development, insufficient number of intervention in the field of road infrastructure did not lead to significant increase in the capacity of roads. This situation was associated with a very low – below 2% – share of dual carriage roads in the total public network of hard-surface roads, and the modernization of single carriage national and provincial roads proves insufficient in this respect. It can be further emphasized that the intervention in the field of road projects in the metropolitan areas was also insufficient - in the case of most crowded roads which provide access to cities. The above-mentioned observations stress the necessity to take actions aimed at increasing the share of dual carriageway roads (primarily those located in metropolitan areas and access roads to major cities). The issue of placing the future plans related to road investments in the context of the location of a projected network of motorways and expressways is also of key importance in order to avoid the implementation of projects running parallel to each other on the same direction of transport flows.

As far as the reduction of time of journey by car is concerned, we conclude that the gain in the time of travel to provinces' capitals was not, in most cases, significant (the most distinguished improvement – one which exemplifies highly effective upgrading of roads in urban areas - has been achieved in Wielkopolskie voivodeship). Particularly negligible effects in this respect were recorded – in spite of the implementation of several road projects - in Lubuskie voivodeship. As far as local connections are concerned it has to be emphasized that the EU funds allowed to reduce the travel time by over 10% in only seven counties (such an 'extraordinary' gain was connected with the fact that the modernized national road (or a regional one) went through the capital of the county. On the other hand, particularly beneficial effects can be observed in the case of road projects which involved the reconstruction of roads leading from towns (in terms of transport integration in urban areas the progress was observed rather in the outer areas of agglomerations, as the projects were most efficient in improving the transport accessibility of neighboring areas outside of the agglomeration). On the other hand, the increasing traffic volume resulted in the deteriorating situation inside the major cities. The available evaluation studies indicate also that the localization of projects in the suburban areas was not congruent with the major directions of commuters' flows (Komornicki 2010, p. 11). Therefore, the scale of support earmarked for rail transport (which facilitates better integration of the agglomeration and of the neighboring areas ) should be expanded. In such a context, the necessity of rebuilding the transport node in Warsaw becomes explicit, as an undertaking which will ensure the efficiency of transport and settlement of the country.

## b) Impact of the EU funds – national dimension

It should be also noted that, due to both the situation in the field of transport infrastructure at the time of Poland's EU accession and the short period of membership, the potential of improving the difficult situation in the sphere of connections between Polish agglomerations in Poland was not sizeable, and that the projects undertaken hitherto allowed to achieve only a slight improvement (to a large extent caused by the projects' dispersion). In the view of the said circumstances it can be inferred that the strengthening of the national settlement system can only be achieved through the implementation of large investment projects (for example, those financed from the Cohesion Fund).

It should be further emphasized that in the coming years the key priority in the field of transport investment – including the EU co-financed projects – should entail finishing the construction of a 'coherent' road network (one including motorways and expressways) and of the railway lines linking major cities, while in the future the support for the air transport should be also expanded.

Analyzing the situation in the field of road safety indicates that the nationwide impact of the EU funds can be hardly classified as significant. The observed improvement in the sphere of road infrastructure (resulting from the implementation of the EU co-financed projects) does not directly mean significant improvement in terms of safety. On one hand, there is no significant correlation between expenditures and reduced number of accidents on the poviats' (counties) level, while on the other, the fairly sizeable improvement observed on the national level in 2009 resulted from the gain achieved in the national category of roads. In the future, improvements in this area could be achieved thanks to the construction of collision-free dual carriageway roads (in the case of single-carriage roads it would be necessary to widen the existing roads). It is also imperative to expand the scale of interventions concerning the – relatively dangerous – regional roads which

are known from relatively high number of accidents (including the fatal ones)<sup>1</sup>.

The overall assessment, of the EU co-financed projects in the sphere of transport infrastructure should take into account not only the limited time of their duration in Poland but also the extent of investment necessary in this area. These circumstances hindered the achievement of even the most pressing objectives solely on the basis of the expenditures of the EU funds. As the entities responsible for intervention in the field of transport infrastructure had to choose the projects from a long list of priorities, it is difficult to describe their choices as questionable, though experts point out that there are certain shortcomings in the field of mutual complementariness of certain projects.

However, it should be emphasized that among serious institutional barriers in the implementation of transport infrastructure projects 'institutional preparation' of such projects was weak. Consequently, despite the fact that starting from the moment of the socio-political transformation in Poland over twenty years ago, the authorities announced various programs of road and motorways constructions and such programs presented momentous visions of development, the frequent changes of government (and resultant changes not only in the visions of the transportation system, but also in preferred mechanism of investments in the said infrastructure) are not conducive to the construction of network of transport infrastructure which could provide the basis for developmental leap of the country. The bestknown example of the delays in implementation of road projects is the case of the 'Via Baltica' road, which for many years remained on the 'conceptual stage'. Even though the environmental impact assessment indicates that the best route location was presented by non-governmental organizations, the authorities were adamantly sticking to their own proposal, which was contrary to the demands of the environment protection organizations.

Difficulties in adapting national legislation to the EU requirements in the field of environmental protection, revealed with the EU accession, have resulted in long delays in implementing various road projects. The agencies responsible for these projects were not prepared for the amendments introduced in July 2005, into the Law on Environmental Protection. Therefore they – struggling to present their projects prior to the entry of new provisions into force – flooded the marshal offices at the voivodeship level) with applications for decisions on localization of new roads. Such a hasty process led, in numerous cases, to the subsequent revocation of the locali-

<sup>&</sup>lt;sup>1</sup> However, it has to be emphasized that the situation in the field of road safety has significantly improved in 2010, which can be attested to growing impact of the EU co-financed projects.

zation decisions by administrative courts, and consequently resulted in the necessity not only to repeat the said localization procedure but also to perform additional environmental impact assessment studies. It is estimated that problems with transposition of the EU regulations to the national legal system have delayed the completion of road projects by many years. It should be further stressed that because of the fact that road projects often face the risk of social protests - which can lead to suspension of investment for several months – it is advisable for the authorities responsible to significantly shorten the period during which such protests are addressed.

In the view of the above-mentioned observations in should be stressed that despite the provisions of the so called 'Road SuperLaw' of April 10, 2003 which facilitated the purchase of ground for investment projects, the construction of almost every road involves social tensions which can lead to long delays. The introduction of the above-mentioned provisions was not accompanied by the regulations which would facilitate obtaining a decision authorizing the commencement of the investment project. Protests are voiced by owners of properties through which the given road is planned to run, as well as representatives of local communities inhabiting the areas adjacent to the planned roads. Quite often such protests are solved only after the court's decision overrules administrative decisions which allowed to start the construction of a given road, which in turn often causes significant delays in the investment process.

Since roads which belong to certain special categories (e.g. motorways and expressways) must meet more strict technical requirements, the errors committed in the field of spatial planning may act as serious barriers in the investment process. In Poland, the percentage of cities which have established spatial development plans is low, and there are frequent conflicts arising from the fact that local estates built on the basis of decisions issued by local authorities are located in the areas which are reserved for the road under construction. It should be also noted that although the location of roads, under the provisions of the 'Road SuperLaw' is excluded from the requirements of spatial planning, there is a danger that in the absence of adequate reserves of land, the investment project may lead to insurmountable social resistance.

Given the above-mentioned conditions of the road projects' implementation in Poland it should be noted that in order to spend the allocation of the EU funds for this purpose in an optimal way it would be necessary to place greater emphasis on reliability of analyses and on the environmental impact assessments pertaining to such projects (among others, by avoiding the submission of defective documentation which poses a risk of successful protests).

#### MAIN RECOMMENDATIONS

Assessing the hitherto implementation of EU-co financed projects in the sphere of transport infrastructure we would like also to present a few selected general recommendations related to the state's policy in this field.

First of all it is necessary to modify the objectives – at least the medium term ones – of the said policy. In our opinion, the objectives pursued in the field of the road transport should be focused on building coherent and accessible network of motorways and expressways, which would allow to 'collect' traffic between metropolises and to facilitate travel through metropolitan areas (especially Warsaw) and cities via the network of national roads. Actions related to other categories of roads should entail improvement of safety (in particular through the construction of ring roads bypassing large cities). Significant effect in the field of increased road capacity and improved road safety could be ensured by the construction of dual carriageway roads, which would take into account the needs of local communities (such as separation of traffic from walking and cycling users of roads). Since the accessibility of roads is associated not only with their physical presence, but also with the real benefits derived by users (on the basis of economic calculation) from travelling on these roads, it is important to set the toll rates on newly built and modernized motorways at a level that will not force potential users to choose lower class roads (which are not ready to accommodate such additional demand in traffic) as an alternative.

In rail transport, the priority should be the revitalization of the nationally important and of regional lines, which would combine the comprehensive offer (taking into account the rolling stock and services offered by rail companies) and effectiveness (the privatization of the exploitation process or replacement of only those elements of infrastructure that are really used up) (Wolański 2011). Actions in this field should also include the modernization and expansion of infrastructure necessary for the development of intermodal transport (logistics centers and intermodal terminals).

In urban transport, priority should be given to shortening the time of travel, while actions undertaken in the air transport should focus on the construction of airports, which should be well-connected with the regions and would service a well-developed network of flights. At the same time interventions in the maritime transport should focus on investments in new reloading/handling technologies, as well as on improving the accessibility of ports.

#### CONCLUSIONS

Summing up the impact of the UE co-financed investment projects on the situation in the field of the transport infrastructure, we would like to reiterate our finding that due to long negligence in this area, and because of the dynamic economic development taking place in Poland in the last two decades, these investments (undertaken in the framework of the NDP 2004-2006 and the NSRF 2007-2013) have not resulted yet in the satisfaction of the needs in the analyzed area. However, the implementation of the said projects constituted a very important part of the investment process aimed at systematic improvement of the transportation system in Poland. The efforts aimed at satisfying these needs should be continued with the support of the EU funds in the subsequent financial perspectives. On the other hand we conclude that the comprehensive assessment of the EU funds' effectiveness in this field will not be possible until all the NSRF 2007-2013 projects are completed (though the successful, comprehensive development of the transport infrastructure will require additional financial assistance from the EU funds within the framework of the 2014-2020 financial perspective).

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