

## Regional analysis of public capital expenditure: to which regions is public capital expenditure channelled – to "rich" or to "poor" ones?

Blažek, Jiří; Macešková, Marie

Postprint / Postprint

Zeitschriftenartikel / journal article

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:

[www.peerproject.eu](http://www.peerproject.eu)

### Empfohlene Zitierung / Suggested Citation:

Blažek, J., & Macešková, M. (2010). Regional analysis of public capital expenditure: to which regions is public capital expenditure channelled – to "rich" or to "poor" ones? *Regional Studies*, 44(6), 679-696. <https://doi.org/10.1080/00343400903002713>

### Nutzungsbedingungen:

Dieser Text wird unter dem "PEER Licence Agreement zur Verfügung" gestellt. Nähere Auskünfte zum PEER-Projekt finden Sie hier: <http://www.peerproject.eu> Gewährt wird ein nicht exklusives, nicht übertragbares, persönliches und beschränktes Recht auf Nutzung dieses Dokuments. Dieses Dokument ist ausschließlich für den persönlichen, nicht-kommerziellen Gebrauch bestimmt. Auf sämtlichen Kopien dieses Dokuments müssen alle Urheberrechtshinweise und sonstigen Hinweise auf gesetzlichen Schutz beibehalten werden. Sie dürfen dieses Dokument nicht in irgendeiner Weise abändern, noch dürfen Sie dieses Dokument für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen.

Mit der Verwendung dieses Dokuments erkennen Sie die Nutzungsbedingungen an.

**gesis**  
Leibniz-Institut  
für Sozialwissenschaften

### Terms of use:

This document is made available under the "PEER Licence Agreement". For more information regarding the PEER-project see: <http://www.peerproject.eu> This document is solely intended for your personal, non-commercial use. All of the copies of this documents must retain all copyright information and other information regarding legal protection. You are not allowed to alter this document in any way, to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public.

By using this particular document, you accept the above-stated conditions of use.

Mitglied der  
  
Leibniz-Gemeinschaft



**Regional analysis of public capital expenditure: to which regions is public capital expenditure channelled – to “rich” or to “poor” ones?**

|                  |   |
|------------------|---|
| Journal:         | <i>Regional Studies</i>   |
| Manuscript ID:   | CRES-2008-0070.R2   |
| Manuscript Type: | Main Section  |
| JEL codes:       | E61 - Policy Objectives; Policy Designs, Consistency, Coordination < E6 - Macro Policy Formation, Macro Public Finance, Macro Policy, etc < E - Macroeconomics and Monetary Economics, H5 - National Government Expenditures and Related Policies < H - Public Economics, R11 - Regional Economic Activity: Growth, Development, and Changes < R1 - General Regional Economics < R - Urban, Rural, and Regional Economics, R58 - Regional Development Policy < R5 - Regional Government Analysis < R - Urban, Rural, and Regional Economics |
| Keywords:        | regional impact of non-regional policies, sectoral policies, territorial impact assessment, regional policy, public investment, Czech Republic  |
|                  |   |

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



For Peer Review Only

1  
2  
3 Regional analysis of public capital expenditure: to which regions is public  
4  
5  
6 capital expenditure channelled – to "rich" or to "poor" ones?  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20

21 Jiří Blažek, Charles University in Prague, Faculty of Science, Department of Social  
22 Geography and Regional Development, Albertov 6, Praha 2, 128 43, Czech Republic. Email:  
23  
24 [blazek@natur.cuni.cz](mailto:blazek@natur.cuni.cz)  
25  
26

27 Marie Macešková, Charles University in Prague, Faculty of Science, Department of Social  
28 Geography and Regional Development, Albertov 6, Praha 2, 128 43, Czech Republic. Email:  
29  
30 [marie.maceskova@gmail.com](mailto:marie.maceskova@gmail.com)  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Received March 2008; in revised form October 2008

## Abstract

The paper aims to contribute to the debate on the regional dimension of sectoral (i.e. non-regional) policies and to empirically demonstrate the huge discrepancy between both the volume and the regional pattern of sectoral public capital expenditure policies on the one hand, and official regional policy on the other. The analyses were based on a unique database of public investment in the Czech Republic covering the years 1995–2005. Their results show significant conflicts in policy objectives and thus represent a clear argument in favour of pursuing territorial impact assessment (TIA) of sectoral policies.

Key words: regional impact of non-regional policies, sectoral policies, territorial impact assessment, regional policy, public investments, Czech Republic

Une analyse des dépenses en capital publiques: vers quelles régions les dépenses en capital publiques sont-elles canalisées – vers les régions riches ou les régions pauvres?

Cet article cherche à contribuer au débat sur la dimension régionale des politiques sectorielles (c'est-à-dire, qui ne sont pas à but régional) et à démontrer de façon empirique l'écart sensible entre le volume et la distribution régionale des politiques sectorielles pour ce qui concerne les dépenses en capital publiques d'un côté, et la politique régionale officielle de l'autre côté. Les analyses sont fondées sur une base de données unique sur l'investissement public en République tchèque de 1995 à 2005. Il s'avère d'importants conflits entre les objectifs de politique, et les résultats représentent donc un argument clair en faveur de la poursuite d'une étude de l'impact territorial des politiques sectorielles.

Impact régional des politiques qui ne sont pas à but régional / Politiques sectorielles / Etude de l'impact territorial / Politique régionale / Dépenses publiques en capital / République tchèque

Regionalanalyse öffentlicher Investitionen: In welche Regionen werden öffentliche Investitionen gelenkt – in 'reiche' oder 'arme'?

Mit diesem Artikel möchten wir zur Debatte über die regionale Dimension sektoraler (d. h. nicht-regionaler) Politiken beitragen und empirisch nachweisen, dass zwischen dem Volumen und regionalen Muster sektoraler öffentlicher Investitionspolitiken einerseits und der offiziellen Regionalpolitik andererseits eine gewaltige Diskrepanz besteht. Die Analysen stützten sich auf eine einzelne Datenbank öffentlicher Investitionen in der Tschechischen Republik in den Jahren von 1995 bis 2005. Die Ergebnisse lassen auf signifikante Konflikte hinsichtlich der politischen Ziele schließen und stellen somit ein klares Argument für eine Untersuchung der territorialen Auswirkungen sektoraler Politiken dar.

Key words:

1  
2  
3 Regionale Auswirkungen nicht-regionaler Politiken Sektorale Politiken  
4 Untersuchung territorialer Auswirkungen Regionalpolitik Öffentliche Investitionen  
5 Tschechische Republik  
6  
7  
8  
9

10  
11 **Análisis regional de inversión de capital público: ¿A qué regiones se canaliza la**  
12 **inversión de capital público: a las 'ricas' o a las 'pobres'?**  
13

14  
15  
16 **Abstract**

17 El objetivo de este artículo es contribuir al debate sobre la dimensión regional de  
18 políticas sectoriales (es decir, no regionales) y demostrar empíricamente las  
19 enormes discrepancias entre el volumen y el modelo regional de las políticas de  
20 inversión de capital público sectorial, por una parte, y la política regional oficial, por  
21 otra. Los análisis se han fundamentado en una única base de datos de la inversión  
22 pública de la República Checa que abarca los años 1995–2005. Sus resultados  
23 muestran conflictos significativos en objetivos políticos y, por tanto, representan un  
24 claro argumento a favor de obrar con arreglo a una evaluación del impacto territorial  
25 de las políticas sectoriales.  
26  
27

28  
29 **Key words:**

30 Impacto regional de políticas no regionales Políticas sectoriales Evaluación del  
31 impacto territorial Política regional Inversiones públicas República Checa  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

JEL classifications: H5, E61, R 11, R 58

## 1. Introduction

The aim of the paper is to contribute to the debate on the regional dimension and the regional impact of sectoral public capital expenditure policies. This debate started decades ago (e.g. SHORT, 1978; BENNETT, 1980; MARTHUR and STEIN, 1980; MOLLE and CAPPELLIN, 1988) but recently received a significant impetus in the form of a discussion on the regional impact of sectoral policies and the possibilities of their “regionalization” (e.g. DG RESEARCH, 1991; MARTIN, 1999; ROBERT *et al.*, 2001; MOLLE, 2007). The “regionalization” of sectoral policies can be understood as the fine-tuning of sectoral public expenditure according to the needs and circumstances of specific regions.<sup>1</sup> One of the important results of this discussion was the gradual development of the methodology of the territorial impact assessment of large projects and later, also of programmes and policies – SCHINDEGGER and TATZBERGER, 2003; CAMAGNI, 2006). The increasing attention being paid to the regional dimension of public expenditure policies stemmed originally from the effort to learn how to improve or - more precisely - how to ensure the coordination of the territorial impact of the EU policy of economic and social cohesion (ESC) and of other European policies (e.g. CEC, 1996; SHOUT and JORDAN, 2007). Moreover, at the same time, there was a significant research endeavour to discover to what extent the regional impact of ESC policy has been in compliance with the spatial effects of numerous national public policies of the EU Member States (CEC, 2004).

---

<sup>1</sup> Such fine-tuning can take many different forms, for example differentiation of the form and the rate of public support or the involvement of regional self-government or other regional bodies in decision-making procedures, although in practice such an approach is rather rarely applied.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Nevertheless, the number of existing analyses of the regional impact of sectoral policies is still relatively limited (for exceptions see e.g. HEALD, 1994; AUTERI and COSTANTINI, 2004; KATAOKA, 2005; MACEŠKOVÁ, 2007), mostly due to the severe data limitations in most countries. Therefore, the main aim of this article is an attempt to perform an analysis of the regional dimension of public capital expenditure in one of the new Member States (the Czech Republic) at the level of the NUTS 3 and 4 regions. This analysis is based on a unique data set of capital public expenditure covering investment projects supported during 1995–2005.

The analyses undertaken here are aimed at answering several research questions. Firstly, the relation between the level of the socio-economic development of the regions and the amount of invested public capital expenditure will be investigated. It is assumed that public investments are highly concentrated in the most socio-economically developed regions. Such a regional allocation of this type of public funds would be in accordance with the principles of a strategic regional policy (for more on strategic regional policy see e.g. GORZELAK, 1992). In other words, given the many deficiencies in the sphere of the technical and other infrastructures inherited from the communist period, it is supposed that public investment was primarily focused on the enhancement of the infrastructure in major cities and namely in Prague to strengthen the gateway effect (DRBOHLAV and SÝKORA, 1997) and to enhance the competitiveness of the national metropolis on the international scene.

Moreover, another reason for the anticipated concentration of public investment in core regions is the assumed higher efficiency of investment in these regions (e.g. CAMINAL, 2004; DE LA FLUENTE, 2004). Therefore, a positive correlation between the level of socio-economic development and the amount of public capital invested (relative per capita) is expected. However, it should be stressed that such a regional pattern of public investment contradicts the objectives of the Czech national strategy for regional development and of



1  
2  
3 regional policy aiming at decreasing regional disparities and being in compliance with the  
4  
5 “insurance” type of regional policy (MRD, 2006; GORZELAK, 1992). As a result, it can be  
6  
7 argued that there is an immense policy conflict between goals of explicit regional policy and  
8  
9 mostly unintended spatial impacts of much more vigorous non-regional governmental  
10  
11 policies. Therefore, our analyses might also serve as empirical support for the importance of  
12  
13 pursuing territorial impact assessment (TIA), both for major public capital projects and for  
14  
15 sectoral policies as a whole.  
16  
17

18  
19  
20 Secondly, a replication of the traditional East-West gradient of socio-economic  
21  
22 development by the regional structure of capital expenditure is also expected (for more on the  
23  
24 East-West gradient, see BLAŽEK and CSANK, 2007).  
25  
26

27  
28 Obviously, given the fact that public capital expenditure is highly “visible”, the  
29  
30 allocation is inevitably subject to challenge in the political arena, and a significant role of  
31  
32 subjective and “soft” factors in the regional allocation of this expenditure is envisaged.  
33  
34 Despite the fact that the available data does not allow for a thorough explanation of the  
35  
36 obtained result, the potentially most important explanatory factors are identified.  
37  
38

39  
40 Finally, it is believed that a detailed scrutiny of the regional structure of public  
41  
42 expenditure significantly helps our understanding of regional development.  
43  
44

45  
46 The paper is structured as follows. Firstly, the theoretical debate and the most  
47  
48 important findings of previous studies are summarized. Next, the data and the methodology  
49  
50 are described. Thirdly, the main findings of the empirical analyses of public capital  
51  
52 expenditure on the NUTS 3 and NUTS 4 levels are provided and discussed. Finally,  
53  
54 conclusions and policy implications are drawn.  
55  
56

## 57 58 2. Regional impact of government policy and its sectoral policies 59 60

1  
2  
3 The subject of public finance and fiscal policy is an important and traditional sphere of  
4 research for economists (e.g. MUSGRAVE and MUSGRAVE, 1973; ATKINSON and STIGLITZ,  
5 1980), nevertheless, geographers have also been interested in this sphere for several decades  
6 (e.g. BENNET, 1980; HEALD, 1994; BLAŽEK, 1995). While economists often build models of  
7 public sector spending and frequently deal with the issue of the efficiency of public sector  
8 spending, geographers tend to derive the implications of public finance for regional  
9 development (e.g. BLAŽEK, 1995; PORTEOUS, 1995; MARTIN, 2005).

10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20 Obviously, fiscal policy as a whole has a huge regional impact, depending on the  
21 design of both the revenue and expenditure sides of the state budget. However, the regional  
22 patterns of both revenue and expenditure are unknown in most countries. Generally, it can be  
23 expected that a system of progressive taxation reduces revenues in more affluent regions  
24 while social benefits tend to flow into the less well off regions, representing an important  
25 mechanism for interregional redistribution (PRUDHOMME, 1993; WISHLADE *et al.*, 1996). The  
26 regional redistribution of financial resources via governmental policies is one of the important  
27 factors contributing to the economic growth of the respective regions (LEFEBER, 1964;  
28 GUIŚÁN and CANCELO, 1996) and helps the social stabilization and internal cohesion of the  
29 country in question (DE LA FLUENTE, 2004). Nevertheless, in the case of the regional  
30 allocation of capital expenditure, there is even less certainty about the actual regional pattern  
31 of this expenditure than in the case of current expenditure.

32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48 Authors focusing on analyses of the impact of governmental policy on the growth of  
49 particular regions arrive at the conclusion that public investments are having measurable  
50 positive effects on the respective regions (e.g. MARTHUR and STEIN, 1980; FÓLSTER and  
51 HENREKSON, 2001; AUTERI and COSTANTINI, 2004). Other studies are devoted to the  
52 investigation of efficiency issues (e.g. GUIŚÁN and CANCELO, 1996; DE LA FLUENTE, 2004).  
53  
54  
55  
56  
57  
58  
59  
60 Other authors point to the problem of the insufficient coordination of different public policies

1  
2  
3 and activities, as their goals and effects can be overlapping or even contradictory (e.g.  
4  
5 WISHLADE *et al.*, 1996; MARTIN, 2005; SHOUT and JORDAN, 2007). In addition, some other  
6  
7 studies have dealt with issues of social justice or equity within the sphere of public finance  
8  
9 (e.g. BOYN and POWELL, 1995).

10  
11  
12 One country where the allocation of public money attracts considerable attention from  
13  
14 both politicians and analysts is the UK. However, the main rationale for these studies is  
15  
16 mainly the issue of the distribution of public expenditure between England, Wales, Scotland  
17  
18 and Northern Ireland in the context of devolution (e.g. SHORT, 1978; HEALD, 1994; HEALD  
19  
20 and SHORT, 2002; MIDWINTER, 2004). In Japan, KATAOKA (2005) assessed the regional  
21  
22 distribution of public investments between 47 prefectures in the post-war period. Kataoka  
23  
24 noticed that periods of high national economic growth are positively correlated with the  
25  
26 concentration of public investment into economically strong regions while in periods of low  
27  
28 growth, a more balanced distribution of public capital expenditure has been observed.  
29  
30  
31 WILSON and WISE (1986) studied the regional implications of public investment in a  
32  
33 developing country – Peru – over the period 1968–1983. They showed a high concentration of  
34  
35 public investment into the rich coastal regions during three subsequent time periods, while a  
36  
37 shift in favour of the poorer inland regions was observed in the second half of the period  
38  
39 studied. However, according to these authors, this shift is mainly attributable to the huge  
40  
41 investments in the mining industries in the inland regions.  
42  
43  
44  
45  
46  
47  
48  
49

### 50 51 3. Sectoral policies and regional policy

52  
53 There have already been voices among experts suggesting that the regional impact of  
54  
55 vigorously pursued sectoral policies is much more profound than the regional impact of  
56  
57 regional policy itself (e.g. ROBERT *et al.*, 2001; MARTIN, 2005). Therefore, within this  
58  
59 context, some authors distinguish regional policy in a “narrow” and “broad” sense, while  
60

1  
2  
3 other authors prefer the terms “explicit” and “implicit” regional policy (e.g. ARMSTRONG and  
4 TAYLOR, 1985; CUADRADO, DE LA DEHESA and PRECEDO, 1993). While it can be agreed that  
5 regional policy in a “narrow” sense is synonym with explicit regional policy, the difference  
6 between implicit regional policy and a regional policy in a “broad” sense should be stressed.  
7  
8 Implicit regional policy encompasses public policies which have been to a certain extent  
9 “regionalized” (i.e. there has been some sort of adjustments of an overall design of sectoral or  
10 non-regional policy in question to meet specific regional conditions and needs). Regional  
11 policy in a “broad” sense, on the other hand, comprises of all public policies or actions  
12 executed by the public sector which have important regional impacts and this importance is to  
13 some extent recognized (e.g. agricultural policy, transport policy, energy policy, competition  
14 policy, science and technology policy). Despite the fact that these policies often lack an  
15 explicit definition of regional goals, they are clearly having a specific impact on different  
16 regions (e.g. CUADRADO, DE LA DEHESA and PRECEDO, 1993; EUROPEAN COMMISSION, 1998,  
17 2004; HILL and LOWE, 2007). Examples of public policies that reflect at least some specific  
18 regional characteristics or which react to specific regional conditions are the policy aimed at  
19 attracting large investors to the Czech Republic (UHLÍŘ, 2004) or the R&D policy in Germany  
20 (see KOSCHATZKY, 2001). Considerable attention has been paid to the regional impact of  
21 sectoral policies and analogous policies at EU level in studies undertaken within the ESPON  
22 programme (e.g. THE ESPON MONITORING COMMITTEE, 2005).

23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
BLAŽEK (2005a) argues that one key component of fiscal policy that has an enormous regional impact is the way the decentralized public administration bodies (municipalities and regions) are financed. For example, in 2007, within the state budget of the Czech Republic only CZK 1.5 bln was allocated to explicit regional policy (which represents only 0,06 % of Czech GDP), while in the same year the state distributed more than CZK 160 bln to municipalities and regions via a strictly egalitarian tax-sharing formula (this volume amounts

1  
2  
3 7,7% of Czech GDP). It is clear that the principles upon which the applied model of financing  
4  
5 local and regional government in particular countries rests are of tremendous importance and  
6  
7 consequently, due to the vast amount of money concerned, the system of local government  
8  
9 financing has a much more profound regional impact than official “explicit” regional policy.  
10  
11

12  
13 Moreover, important regional impacts can be attributable even to non-spending  
14  
15 policies, for example to an anti-monopoly policy. WISHLADE *et al.* (1996) consider the spatial  
16  
17 impact of non-spending policies as “blind spots” of regional analyses.  
18  
19

#### 20 21 22 23 4. The budgetary scheme of the Czech Republic

24  
25 The budgetary scheme of the Czech Republic consists of two prime components – public  
26  
27 budgets and extra-budgetary funds created for specific investment purposes such as transport  
28  
29 infrastructure, and expenditure on environmental projects. (see Figure 1).  
30  
31

#### 32 33 34 35 Figure 1: Simplified budgetary scheme of the Czech Republic

36  
37 Source: modified on the basis of PEKOVÁ (2002), p. 79

38  
39 (about here).  
40  
41

42  
43 Nevertheless, due to the focus of this paper on the identification of spatial patterns in the  
44  
45 allocation of public capital expenditure, the analysis was limited to a regional analysis (at the  
46  
47 level of the NUTS 3 and NUTS 4 regions) of capital investment allocated from central  
48  
49 sources, i.e. from the state budget and from state extra-budgetary funds. The Czech state  
50  
51 budget operates with the dominant part of public finance assigned to public budgets, but as  
52  
53 Table 1 illustrates, the share of state budget allocated to capital expenditure is rather small.  
54  
55 This fact can be partly explained by the key role of state extra-budgetary funds in the case of  
56  
57 such expenditure (see Table 2), as they are designed to function as a vehicle allowing the  
58  
59  
60

1  
2  
3 implementation of multi-annual projects, while the state budget in principle provides the  
4 financial framework for one year only. In addition, a noteworthy volume of public capital  
5 expenditure flows through decentralized public budgets, and especially via municipal budgets  
6 (on average in 2000–2005 the capital expenditure of decentralized public budgets accounted  
7 for CZK 74.2 bln per year, which represents 28.5 % of the total decentralized public budgets  
8 on average per year). Nonetheless, in line with our research focus the analysis presented  
9 below concentrates only on the capital expenditure allocated from the central level.  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21

22 Table 1: Expenditure of the Czech state budget in 1995–2005 (current prices, in billion  
23 CZK, in %)  
24  
25

26 Source: Statistical Yearbook of the Czech Republic 1997, 1999, 2001, 2002, 2004, 2006.  
27

28 Note: In December 2007, the exchange rate was approx. 1 EUR = 27 CZK.  
29

30 (about here)  
31  
32

33 Table 2: Expenditure from selected state extra-budgetary funds in 2000–2005 (current prices,  
34 in billion CZK)  
35  
36

37 Source: Statistical Yearbook of the Czech Republic 2000–2006.  
38  
39

40 (about here)  
41  
42  
43  
44  
45

## 46 5. Data and Methodology

47  
48 The prime source for this regional analysis of the capital expenditure of the state budget of the  
49 Czech Republic is the ISPROFIN (Information System of Programming Funding from the  
50 State Budget) database, which comprises data regarding investment spending from the state  
51 budget, in our case for the years 1995–2005. ISPROFIN is managed by the Ministry of  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 Finance of the Czech Republic and has been operational since 1995.<sup>2</sup> The structure of the  
4 entries into ISPROFIN allows a regional break-down of capital expenditure at the level of the  
5 NUTS 3 and 4 regions. However, several methodological problems arose during the analysis  
6 of this data, and consequently a number of projects and programmes (and the corresponding  
7 financial volume of capital expenditure) had to be excluded from the analysis. The following  
8 criteria for omitting particular projects or programmes were applied: i) the regional allocation  
9 of the investment incentives was not given or investment was implemented abroad; ii) the  
10 project or programme was predominately for current expenditure; iii) the project was of an  
11 “extraordinary” nature (i.e. expenditure devoted to the recovery of the territories affected by  
12 the 1997 and 2002 floods or devoted to the restitution to former owners of private property  
13 that was nationalized during the communist period).  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32

---

33 <sup>2</sup> Except for the programmes set by a special act such as state support to the national cultural  
34 heritage or agriculture.  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 An overview of the financial amounts included (and excluded) from the regional analysis of  
4 public capital expenditure is given in Table 3. Another methodological challenge was  
5 represented by projects which benefited the whole country, but in ISPROFIN were assigned  
6 to one region only. This was especially the case for the purchase of jet fighter aircraft which  
7 were also excluded from the analysis.  
8  
9  
10  
11  
12  
13

14  
15  
16  
17 This problem relates to the fundamental methodological question of which principle  
18 investment expenditure should be attributed to a certain region. For instance, SHORT (1978)  
19 has explicitly distinguished two types of regional expenditure: “regionally relevant” and “total  
20 expenditure” allocated to the region. According to Short, “regionally relevant” expenditure  
21 benefits only the region in which the particular public money was allocated. Alternatively,  
22 WISHLADE *et al.*, (1996) and also CAMINAL (2004) differentiated between the “flow” and  
23 “benefit” approaches to the analysis of the regional distribution of public expenditure. The  
24 “flow” approach assigns expenditure to regions regardless of whether or not the region in  
25 question is an “end user”, while the “benefit” approach concentrates on the final beneficiaries  
26 of the public money spent, or more precisely on the final beneficiary regions. Consequently,  
27 in our analysis, the flow approach has been applied as it would be impossible to judge each of  
28 the approximately 40,000 investment projects of ISPROFIN included in the analysis on the  
29 basis of the benefit approach.  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50

51 Table 3: Financial resources of ISPROFIN 1995–2005 (in billion CZK, current prices, in %)

52 Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic),  
53 authors` calculations.  
54  
55

56  
57 (about here)  
58  
59  
60



1  
2  
3 In addition to ISPROFIN, which covers capital expenditure financed from the state budget,  
4  
5 the two most relevant extra-budgetary funds were incorporated into our analysis. These two  
6  
7 funds are: The State Fund for Transport Infrastructure (SFTI) and the State Environmental  
8  
9 Fund (SEF). The data on the individual projects supported by these funds were obtained from  
10  
11 the responsible institutions. In the case of the State Fund for Transport Infrastructure, the  
12  
13 capital expenditure for 2001–2005 has been analysed at the level of NUTS 3 regions.  
14  
15 Investment projects to a total value of CZK 222.3 billion were included in the analysis. The  
16  
17 State Environmental Fund is represented by the data concerning expenditure during the years  
18  
19 1999–2005, which amounted to CZK 13 billion. Therefore, this analysis covers capital  
20  
21 expenditure from the state budget and from two extra-budgetary funds to a total value of CZK  
22  
23 617 bln. The analysis was structured into six parts, covering the most relevant thematic  
24  
25 spheres of public capital expenditure (see Table 4).  
26  
27  
28  
29  
30  
31  
32  
33

34 Table 4: Overview of the analyzed data for the period 1995-2005 (in billion CZK, current  
35  
36 prices)  
37

38 Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic),  
39  
40 Internal materials of the State Fund for Transport Infrastructure (SFTI) and the State  
41  
42 Environmental Fund (SEF), authors` calculations.  
43  
44

45 (about here)  
46  
47  
48  
49  
50

## 51 6. Results

52  
53 In this section, the main results of the regional analysis of capital expenditure committed  
54  
55 within the sectoral governmental policies in the Czech Republic will be presented (Table 4  
56  
57 provides an overview of the financial volumes analysed). First, attention is paid to an analysis  
58  
59 of the distribution of all capital expenditure, that is an analysis of investment projects financed  
60

1  
2  
3 from the state budget and from relevant state extra-budgetary funds. In view of the fact that  
4  
5 the overall nature of regional differentiation of investment allocation is considerably  
6  
7 influenced by investments in the transport infrastructure, in the next stage such investments  
8  
9 are excluded from the analysis and analysed separately. Next, the regional allocation of  
10  
11 investments in other relevant sectors is considered, namely the territorial allocation of  
12  
13 investments within explicit regional policy, investments in universities and the R&D sector,  
14  
15 and finally investment assigned to the environmental sector.  
16  
17  
18  
19  
20  
21

### 22 6.1. Regional analysis of total capital expenditure

23  
24 The regional analysis of total capital expenditure financed from the central level (i.e. from the  
25  
26 state budget and from both state extra-budgetary funds) in the period 1995–2005, includes  
27  
28 nearly CZK 617 billion after the data has been ‘cleaned’ by the above described procedure.  
29  
30 The nature of the capital expenditure determined that such invested funds were used primarily  
31  
32 for development activities, and allocation of such investments has an undoubted dynamic  
33  
34 effect on the relevant regions (e.g. SHORT, 1981; AUTERI and COSTANTINI, 2004).  
35  
36  
37  
38  
39  
40

41 The overall spatial pattern of the regional distribution of the analysed funds can be considered  
42  
43 as significantly unbalanced. In the period studied, over one quarter of the analysed  
44  
45 investments (which in absolute terms represents approximately CZK 168 billion) were  
46  
47 allocated from the national level into the capital city of Prague, socio-economically the most  
48  
49 advanced region of the Czech Republic (for regional GDP per capita see Figure 2). The  
50  
51 dominance of Prague is also proved by relative indicators, i.e. investments per inhabitant  
52  
53 (approximately CZK 142 thousand per inhabitant, which is 237% of the average for the Czech  
54  
55 Republic - see Table 5). With respect to economic performance indicators, i.e. after putting  
56  
57 capital expenditure in relation to the regional GDP level, it was 116% of the average  
58  
59  
60

1  
2  
3 allocation of the Czech Republic and in relation to the economic aggregate it was 123% of the  
4 national average. The term economic aggregate was defined by HAMPL (2005) as the product  
5 of the number of jobs (the number of jobs is determined as the number of economically active  
6 persons after deducting the unemployed and adding the commuting balance calculated on the  
7 basis of the 2001 Census) and the average wage in the region in question. The Plzeňský and  
8 Olomoucký regions achieved an even higher investment allocation than Prague with respect  
9 to GDP (136%, resp. 137% - see Table 5), and the same order applies when the allocated  
10 investment volume is related to the economic aggregate.  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23

24 Table 5: Capital expenditure per capita and per regional GDP (1995–2005, in %)

25 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech  
26 Republic 2001, authors` calculations.  
27  
28  
29

30 (about here)  
31  
32  
33  
34  
35

## 36 6.2. Regional analysis of total capital expenditure after exclusion of transport investment

37 Since the extraordinary volume of investment devoted to transport infrastructure (CZK 222  
38 billion from the state budget and from the State Fund for Transport Infrastructure – see Table  
39 4) which undoubtedly influences the overall picture of the regional allocation of investment,  
40 such expenditure was excluded from the analysis in the following stage. The remaining  
41 investment projects thus represent approximately CZK 395 billion for the period of 1995–  
42 2005 again.  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53

54 After the exclusion of projects in the transport infrastructure sector, the position of Prague is  
55 even higher (see Table 5). In absolute terms, its share of public capital expenditure in the  
56 Czech Republic actually increased to 37.5%, while in per capita terms the investment  
57  
58  
59  
60

1  
2  
3 allocation to Prague was 326% of the average value for the Czech Republic. No other NUTS  
4  
5  
6 3 region received an above-average allocation per inhabitant. Even when the allocated  
7  
8 investment projects are related to the regional GDP, the Prague region is still above the  
9  
10 national average (see Table 5). Investments in Prague were directed particularly to the state  
11  
12 administration (approximately CZK 55 billion), state defence (CZK 24 billion), health service  
13  
14 (CZK 18.1 billion), infrastructure development (CZK 18.9 billion) as well as public city  
15  
16 transport (4.8 billion CZK), R&D (CZK 6.9 billion) and education (CZK 8.7 billion).  
17  
18  
19  
20  
21

22 As all data except for that on transport infrastructure projects was territorially identified up to  
23  
24 NUTS 4 level, a detailed analysis of the regional distribution of capital expenditure, after  
25  
26 exclusion of transport expenditure, could be carried out on the NUTS 4 level regions. At this  
27  
28 hierarchical level, Prague dominates absolutely. The district of Kutná Hora achieved the  
29  
30 second highest allocation per inhabitant and the highest allocation per economic aggregate,  
31  
32 but this was thanks to extraordinary investments in the military air force base in Čáslav. The  
33  
34 district of Brno–město (after Prague the second most important economic centre of the Czech  
35  
36 Republic) is in third position with 162% of the average allocation per inhabitant. Brno also  
37  
38 achieved the second highest share of 6%. The districts of Ostrava–město (2.2%), Olomouc  
39  
40 (2.6%) and Plzeň–město (2.2%) also received significant shares. Other districts received only  
41  
42 minor allocations.  
43  
44  
45  
46  
47  
48  
49  
50

51 Where capital expenditure was considered per inhabitant, above-average investments  
52  
53 compared to the average for the Czech Republic were allocated to only 11 out of 77 districts,  
54  
55 and 22 districts did not even achieve 50%. The regions receiving significantly below-average  
56  
57 investment funds per inhabitant include the majority of districts in North-Western Bohemia  
58  
59 and Northern Moravia (which, however, are mostly among the regions supported within  
60

1  
2  
3 Czech regional policy – see Figure 2), the internal periphery, as well as a large area of  
4  
5 Southern, Western, Northern and Eastern Bohemia and the Czech-Slovak borderland (see  
6  
7 Figure 3).  
8  
9

10  
11  
12  
13 Figure 2: Assisted regions supported within Czech explicit regional policy

14  
15 Source: Ministry for Regional Development.

16  
17 (about here)  
18  
19  
20  
21

22  
23 Figure 3: Capital expenditure per capita after exclusion of transport infrastructure in NUTS 4  
24  
25 regions, 1995–2005, Czech Rep. = 100 % (in %).

26  
27 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors`  
28  
29 calculations.

30  
31 (about here)  
32  
33

34 Due to the unavailability of GDP data for NUTS 4 regions and the limited reliability of this  
35  
36 indicator on the NUTS 3 regions, GDP was replaced by an economic aggregate. At regional  
37  
38 level, this indicator achieves a very high correlation with regional GDP (0.998). After putting  
39  
40 the allocated investment funds in relation to the economic aggregate (see Figure 4), Prague  
41  
42 achieved 169% of the average for the Czech Republic (the highest allocations went to the  
43  
44 districts of Kutná Hora - 257% and Prostějov - 170%, in both cases thanks to extraordinary  
45  
46 investments in the defence sector). Highly uneven distribution of this expenditure illustrates  
47  
48 well the fact that above-average values were achieved by only 13 districts, among which was  
49  
50 also the second largest city (district Brno-město - 119 %).  
51  
52  
53  
54  
55  
56

57  
58 Figure 4: Capital expenditure per economic aggregate after exclusion of transport

59  
60 infrastructure investments in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).

1  
2  
3 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005),  
4  
5 authors` calculations.  
6

7  
8 (about here)  
9

### 10 11 12 6.3. Capital expenditure in the transport sector 13

14  
15 The extraordinary importance of investment devoted to the transport infrastructure is given by  
16  
17 their very high volume (CZK 222 billion), which represents approximately 36% of the  
18  
19 volume of the investment observed in this study. In addition, it is obvious that the regional  
20  
21 formula of transport constructions, often linear in nature, may significantly differ from the  
22  
23 spatial formula of other investment projects. For this reason, the transport sector was chosen  
24  
25 for a separate regional analysis (i.e. investment in construction of motorways, expressways,  
26  
27 railway corridors, and the underground in Prague). Despite a number of methodological  
28  
29 constraints, it was possible to unite the two most important sources of funds for this sector:  
30  
31 the state budget (i.e. ISPROFIN) and the State Fund for Transport Infrastructure. The total  
32  
33 analysed investment volume of 1995–2005 exceeds CZK 222.3 billion (ISPROFIN – CZK  
34  
35 96.7 billion, the State Fund for Transport Infrastructure – CZK 125.5 billion), and the data are  
36  
37 available only for NUTS 3 regions.  
38  
39  
40  
41  
42  
43  
44  
45

46 Figure 5 illustrates the considerably above-average allocation of investment in transport in  
47  
48 Western Bohemia, which corresponds to the hypothesis of allocation of investment along a  
49  
50 traditional west-east gradient in the level of socio-economic development. In transport  
51  
52 investment, this gradient is raised by the effort to ensure transport connections for the Czech  
53  
54 Republic or its capital of Prague with nearby economic centres in Germany (Munich,  
55  
56 Frankfurt, Berlin). Although the area of Northern Moravia is a structurally affected region, as  
57  
58 is North-Western Bohemia, transport investment has flowed more to Northern Bohemia in  
59  
60

1  
2  
3 recent years, because the transport connection with Poland was of less priority than  
4  
5 connections to Germany or Western Europe.  
6  
7  
8  
9

10 Figure 5: Transport infrastructure investment per capita in NUTS 3 regions, 1995–2005,  
11  
12 Czech Rep. = 100 % (in %)

13  
14  
15 Source: ISPROFIN, SFTI, Statistical Yearbook of the Czech Republic 2001, authors`  
16  
17 calculations.  
18

19  
20 (about here)  
21  
22  
23

24 The spatial formula for the allocation of per capita investment in transport is very similar to  
25  
26 the case where transport investment is related to GDP (the correlation coefficient is 0.954). In  
27  
28 both indicators the position of Prague is well below national average (78%, resp. 38% of the  
29  
30 Czech Republic average). On the contrary, Plzeňský, Olomoucký, Ústecký and Karlovarský  
31  
32 regions achieved significantly above-average allocations. However, in evaluating the regional  
33  
34 distribution of transport infrastructure investments (and of general investments as well) it is  
35  
36 necessary to consider the time aspect in the sense that if a significantly higher amount of  
37  
38 funds is granted to a region in a certain time range, it may mean that the necessary  
39  
40 infrastructure had not previously been constructed in the region in question and it is being  
41  
42 built behind schedule or out of needs arising from the different geopolitical orientation of the  
43  
44 Czech Republic after the fall of the Iron Curtain. For example, as early as the communist era,  
45  
46 the D1 motorway was completed between Prague and Brno, leading across the Vysočina  
47  
48 region, so this region records a significantly below-average allocation, while in the districts of  
49  
50 Tachov and Plzeň-jih districts, the D5 connecting Prague and Bavaria was built during the  
51  
52 period considered here.  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 The regional distribution of capital expenditure after the exclusion of transport infrastructure  
4 investments when related to the economic level of the region (GDP) shows that transport  
5 investments are what “aid” economically weaker regions to reach above-average values. If  
6  
7  
8  
9  
10 transport investments are not considered, Prague is quite clearly the region that gains most  
11  
12 from redistribution of public investment both in per capita terms and in relation to GDP  
13  
14 (116 %, or 159 % of the Czech Republic average - see Table 5).  
15  
16  
17  
18  
19

#### 20 6.4. Capital expenditure allocated within explicit regional policy 21

22 Since one of the aims of this article is to show a significant discrepancy between the regional  
23 formula for the allocation of public investment funds within non-regional policies and  
24 regional policy, this is presented by Figure 6 which shows investments granted to explicit  
25 regional policy from the state budget. Strikingly, the funds allocated within regional policy  
26  
27 are spread widely across the whole territory of the Czech Republic. This is in sharp contrast  
28  
29 with the very conception of regional policy as a policy which supports only selected regions.  
30  
31 This finding cannot be justified by changes of assisted areas over the investigated period as  
32  
33 there was considerable stability of both the regional pattern of lagging and leading regions  
34  
35 and consequently also of assisted areas delineated for the sake of regional policy (BLAŽEK,  
36  
37 2005b). On the other hand, the pattern of investment within regional policy does confirm that  
38  
39 a certain priority was given to the assisted areas. Namely, the Moravian districts, especially  
40  
41 the southern and, to some extent, northern ones ranked among the largest recipients of such  
42  
43 investments (together with North-Western Bohemia they rank among the regions supported  
44  
45 within Czech explicit regional policy, as does Northern Bohemia to some degree).  
46  
47 Nevertheless, it is necessary to mention a paradox as a statistically highly significant positive  
48  
49 relation of regional policy investment to regional GDP and to the economic aggregate was  
50  
51 demonstrated for NUTS 3 regions (in both cases excluding Prague - see Table 6a). The same  
52  
53  
54  
55  
56  
57  
58  
59  
60



1  
2  
3 applies also to the level of NUTS 4 regions (see Table 6b) where a statistically significant  
4  
5 positive relation was found between the regional policy capital expenditure and the level of  
6  
7 economic development measured by the economic aggregate as a proxy for regional GDP. At  
8  
9 the same time, a larger part of Moravia ranks, with other regions supported within explicit  
10  
11 regional policy, as an area significantly underfinanced with respect to the total investment  
12  
13 from the state budget after the exclusion of transport. In simple terms, districts supported  
14  
15 within the explicit regional policy in the Czech Republic received only a very limited volume  
16  
17 of investment from the national level (after the exclusion of transport constructions) (compare  
18  
19 Figures 2, 3 and 4). On the other hand, support within Czech regional policy was significantly  
20  
21 concentrated into these regions (see Figure 6). However, a huge difference in the financial  
22  
23 sums invested has to be stressed again: CZK 7.2 billion for regional policy versus the total  
24  
25 volume of the analysed funds amounting to CZK 617 billion. Nevertheless, although the  
26  
27 volume of investments for regional policy at the national level is nearly negligible, its  
28  
29 importance is significantly higher for the supported regions.  
30  
31  
32  
33  
34  
35  
36  
37  
38

39 Figure 6: Capital expenditure per capita from the state budget devoted to explicit regional  
40  
41 policy in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).  
42

43 Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors` calculations.

44  
45 (about here)  
46  
47  
48  
49

50 Table 6a: Correlation of selected indicators for NUTS 3 regions (n=13 – Prague excluded)

51  
52 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech  
53  
54 Republic 2001, HAMPL (2005), authors` calculations.  
55  
56

57  
58  
59 Table 6b: Correlation of selected indicators for NUTS 4 regions (n=76 – Prague excluded)  
60

1  
2  
3 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech  
4  
5 Republic 2001, HAMPL (2005), authors` calculations.  
6

7  
8 (about here)  
9

#### 10 11 12 6.5. Capital expenditure for higher education, R&D and the environmental sector 13

14  
15 Within the regional analysis of capital expenditure from the state budget of the Czech  
16  
17 Republic, sectoral analyses were also carried out. As an example, Figure 7 shows investment  
18  
19 from the state budget in the infrastructure of universities and colleges and other R&D  
20  
21 institutions amounting to approximately CZK 25 billion. The expected regional distribution of  
22  
23 such expenditure into economically more developed regions (Prague, Brno) and to regions  
24  
25 where a public college is located, or to regions with headquarters of important research  
26  
27 institutes (the Prague hinterland) was demonstrated (similar regional pattern of public R&D  
28  
29 expenditure was shown by WISHLADE *et al.* 1996 or THE ESPON MONITORING COMMITTEE  
30  
31 2005). Nevertheless, it is necessary to point out that it is not only capital expenditure from the  
32  
33 central level that is devoted to this sector. For example, it was not possible to obtain data on  
34  
35 the regional allocation of financial support for R&D projects allocated by the Grant Agency  
36  
37 of the Czech Republic. In addition, it is necessary to take into account a frequent  
38  
39 methodological problem, when some analysed data are allocated according to the  
40  
41 headquarters of the institution in question, although such funds may then be invested in  
42  
43 branches of the institution in a different region. It is thus probable that in fact investment in  
44  
45 higher education and R&D is less concentrated than the data analysed shows.  
46  
47  
48  
49  
50  
51  
52  
53  
54

55 Figure 7: Capital expenditure per capita of the state budget devoted to universities and for  
56  
57 R&D institutions in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %)  
58

59 Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors` calculations.  
60

1  
2  
3 (about here)  
4  
5  
6  
7

8 Figure 8 shows investment in the environment sector amounting to CZK 25.6 billion  
9 allocated both from the state budget and the State Environmental Fund. Although no clear  
10 relation between the distribution of funds and environmental quality has been shown, we may  
11 confirm to some extent that investment was allocated to regions in which it is necessary to  
12 solve a specific problem with respect to the environment (e.g. support of mining reduction,  
13 revitalising the river system, pond reconstructions).  
14  
15  
16  
17  
18  
19  
20  
21

22  
23  
24 A surprisingly high allocation of investment to border districts in South-Western Bohemia  
25 relates to investment in the territorially largest national park in the Czech Republic (The  
26 Šumava National Park). Figure 8 provides, however, a surprising finding, that investment  
27 projects in the environment sector are not greatly concentrated in the structurally handicapped  
28 regions in Northern Bohemia and in Northern Moravia where the environment is seriously  
29 damaged. There is one exception with high investment - the Česká Lípa district - where the  
30 running down of the uranium industry and subsequent cultivation of the area are jointly in  
31 progress.  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45

46 Figure 8: Environmentally related capital expenditure per capita of the state budget in 1995–  
47 2005 and of the State Environmental Fund in 1999–2005 in NUTS 4 regions, Czech Rep.  
48  
49 =100 % (in %)  
50  
51

52 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors`  
53 calculations.  
54  
55

56  
57 (about here)  
58  
59  
60

6.6. Relation of capital expenditures to selected socio-economic variables

1  
2  
3 On the basis of correlation coefficients for selected indicators for NUTS 3 regions (Table 6a)  
4 we can demonstrate a statistically significant relation between all regional allocations of  
5 investment via all analysed categories of investment (i.e. total investment, total investment  
6 after exclusion of transport investment, transport investment, investment into R&D and  
7 universities and regional policy investment, and their economic performance expressed by the  
8 GDP and the economic aggregate. The same finding counts for correlation coefficients for  
9 NUTS 4 regions (Table 6b), however, due to data limitations only the correlation between 3  
10 investment categories and the economic aggregate could be calculated. It is important to stress  
11 again that with respect to the declared objectives of Czech regional policy, the correlation  
12 between the share of investment allocated within explicit regional policy and economic  
13 performance should be negative. However, on both NUTS 3 and NUTS 4 level regions  
14 positive and even statistically significant values were obtained indicating that even allocation  
15 of investment within regional policy is not in line with its own strategic objective.  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33

34  
35 The identification and detailed assessment of factors behind these observed patterns goes  
36 beyond the focus of this paper, however at least a brief discussion should be included. In  
37 countries like the Czech Republic which are lacking instruments for the systematic evaluation  
38 of the effectiveness and efficiency of planned public investment, a relatively important role  
39 can be assumed for subjective factors. The decision making process on public investment  
40 committed from the central level basically proceeds at two levels. Firstly, on the basis of a  
41 proposal of the Ministry of Finance, the Government and Parliament decide about financial  
42 allocations to particular sectors that come under the responsibility of particular ministries.  
43 Secondly, there is a process of selection of priorities by a particular ministry. In this case,  
44 three main factors influencing the decision making process on public investments might be  
45 identified: i) the adopted strategy for a specific sector (inevitably even these strategic  
46 documents can to some extent reflect subjective factors), ii) the interests of (esp. high-  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 ranking) public servants and iii) the interests of politicians. On the basis of our experience of  
4 more than 10 years of contractual cooperation by one of the authors with one central  
5 administration body we can draw two preliminary conclusions. First, the relevance of these  
6 three types of factors differs widely among different sectoral policies. Second, in some cases  
7 each of the three above mentioned factors can be decisive. This, therefore, makes a clear case  
8 for the introduction of some instruments (including TIA) that would be able to “objectivise”  
9 the need for public investment.  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20

## 21 7. Conclusions and policy implications

22  
23 The article aims to contribute to the debate on the regional dimension of sectoral (non-  
24 regional) governmental policies and to empirically demonstrate the huge discrepancy between  
25 both the volume and regional pattern of public capital expenditure committed within the  
26 national sectoral policies on the one hand and the official regional policy on the other. The  
27 performed analyses focused “only” on the public capital expenditures allocated by the  
28 Government of the Czech Republic, but it can be claimed that public capital investments have  
29 the most important implications for the development of particular regions (SHORT, 1981;  
30 YAMANO and OHKAWARA, 2000). Obviously, the financial volume of the total public capital  
31 expenditure is incomparably higher than the financial volume allocated to explicit regional  
32 policy.  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50

51 The regional analyses performed were based on the dataset of public capital expenditure in  
52 the Czech Republic covering the years 1995–2005 and demonstrated uneven regional  
53 distribution of these investments in favour of the most economically developed region of the  
54 Czech Republic – the capital city of Prague. Such a regional pattern for the distribution of  
55 public investment supports the hypothesis that there exists a contradiction between the  
56 regional impact of sectoral policies on the one hand, and the goals of explicit regional policy  
57  
58  
59  
60

1  
2  
3 on the other. The discrepancy between these two is particularly striking as assisted regions  
4 delineated for the sake of national regional policy were to a large extent left aside by  
5 decisions regarding the allocation of public capital expenditure (with the exception of  
6 expenditure on transport infrastructure). Moreover, a surprising pattern was identified even in  
7 the case of investment committed within explicit regional policy (see Fig. 6) which is not  
8 coinciding well with the map of assisted areas (see Fig. 2). Clearly, the allocation of regional  
9 policy investments is not respecting fully the objectives of regional policy itself.

10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22 Consequently, there is a clear conflict between the goals of explicit regional policy aiming at  
23 the support of less well-off regions and mostly unintended regional impacts of much more  
24 vigorous non-regional governmental policies generally supporting the most developed  
25 regions. These findings are in line with research performed by e.g. WILSON and WISE (1986)  
26 but in contrast with results of YAMANO and OHKAWARA (2000).

27  
28  
29  
30  
31  
32  
33  
34  
35  
36 However, it is necessary to stress that from the point of view of the entire expenditure side of  
37 the governmental policies comprising both capital and current expenditure, the region of  
38 Prague is very likely the most important net payer into the system of public finance due to its  
39 buoyant tax base and to its relatively low share of persons receiving social benefits (see  
40 OUŘEDNÍČEK and NOVÁK, 2006). Nevertheless, it is clear that the uneven distribution of  
41 public capital expenditure, generally favouring more developed regions, is one of the most  
42 important mechanisms of regional differentiation and is, moreover, cumulative in nature.

43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54 The expectation of a replication of the traditional East-West gradient in the level of socio-  
55 economic development by the regional structure of total capital expenditure has not been  
56 experienced. However, the evidence supporting this expectation can be observed in the case  
57 of the capital expenditure allocated to transport infrastructure. The greater support of transport  
58  
59  
60

1  
2  
3 infrastructure projects in the Western part of the Czech Republic is a reflection of the priority  
4 assigned to connecting the Czech Republic to Western European structures.  
5  
6

7  
8  
9 Key implications deriving from the conducted regional analysis relate in particular to the  
10 necessity of developing a sound methodology for the territorial impact assessment of public  
11 policies and programmes. In other words, it is essential to develop a procedure evaluating not  
12 only the regional impact of incentives carried out within explicit regional policy (which is  
13 already becoming common practice in the most developed countries) but also the impact of  
14 public interventions which do not explicitly incorporate a regional dimension but where  
15 implementation might have a significant regional impact. Such an evaluative instrument is  
16 essential for tackling of regional development issues and problems more effectively by  
17 achieving synergies and eliminating contradictions between different policies (SCHÄFFER,  
18 2005; CEC, 2006a, 2006b). Nevertheless, this approach is a real challenge due to the fact that  
19 public policies in most advanced countries are traditionally being implemented via sectorally  
20 structured public administration at central governmental level while the relevance of sectoral  
21 policies for development of particular regions has been clearly underestimated (ROBERT *et al.*,  
22 2001; MACEŠKOVÁ, 2007).  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44

45 Despite the effort that has been put into developing TIA methodology, no comprehensive and  
46 satisfactory tool for regional impact assessment has yet been developed. Therefore, as also  
47 documented by our empirical results, which showed both an uneven spatial pattern of the  
48 allocation of public capital expenditure and a huge mismatch between the regional pattern of  
49 this expenditure and the assisted regions, the development of a suitable instrument for  
50 territorial/regional impact assessment and its application at least to the most relevant sectoral  
51 policies remains a critical challenge for both researchers and decision-makers.  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3  
4  
5  
6 Acknowledgements  
7

8 This paper received financial support from Research Programme No. MSM 0021620831 and  
9  
10 from project 2D06012 "Socio-Spatial Differentiation of Population and its Impact on Quality  
11  
12 of Life in Cities and Communities in the Czech Republic" both sponsored by the Czech  
13  
14 Ministry of Education, Youth and Sport. The authors would also like to thank to two  
15  
16 anonymous referees for their helpful comments.  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



Table 1: Expenditure of the Czech state budget in 1995-2005 (current prices, in billion CZK, in %)

|  | 1995  | 1996  | 1997  | 1998  | 1999  |
|--|-------|-------|-------|-------|-------|
| Total expenditure of the state budget  | 432.7 | 484.4 | 524.7 | 566.7 | 596.9 |
| of which capital expenditures of the state budget                              | 44.1  | 46.4  | 50.6  | 50.5  | 59.0  |
| share of capital expenditures of the total expenditure of the state budget (%) | 10,2  | 9,6   | 9,6   | 8,9   | 9,9   |

Source: Statistical Yearbook of the Czech Republic 1997, 1999, 2001, 2002, 2004, 2006.

Note: In December 2007, the exchange rate was approx. 1 EUR = 27 CZK.

Table 1 continued

|  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  |
|--|-------|-------|-------|-------|-------|-------|
| Total expenditure of the state budget  | 632.3 | 693.9 | 750.8 | 808.7 | 862.9 | 923.0 |
| of which capital expenditures of the state budget                              | 60.9  | 49.6  | 49.7  | 56.9  | 66.7  | 79.0  |
| share of capital expenditures of the total expenditure of the state budget (%) | 9,6   | 7,1   | 6,6   | 7,4   | 7,7   | 8,3   |

Source: Statistical Yearbook of the Czech Republic 1997, 1999, 2001, 2002, 2004, 2006.

Table 2: Expenditure from selected state extra-budgetary funds in 2000-2005 (current prices, in billion CZK)

|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|--|------|------|------|------|------|------|
| Total expenditure of the State Environmental Fund of the Czech Republic                                      | 2.9  | 3.8  | 4.2  | 4.8  | 4.2  | 3.4  |
| of which capital expenditure of the State Environmental Fund of the Czech Republic                           | 2.6  | 3.5  | 3.7  | 4.2  | 3.7  | 3.0  |
| share of capital expenditure of the entire expenditure of the State Environmental Fund of the Czech Republic | 89.7 | 92.1 | 88.1 | 87.5 | 88.1 | 88.2 |
| Total expenditure of the State Fund for Transport Infrastructure   | 8.5  | 30.6 | 40.2 | 41.3 | 52.1 | 48.5 |
| of which the capital expenditure of the State Fund for Transport Infrastructure                              | 5.0  | 13.9 | 24.1 | 25.1 | 34.6 | 37.8 |
| share of capital expenditure of the entire expenditure of the State Fund for Transport Infrastructure        | 58.8 | 45.4 | 60.0 | 60.8 | 66.4 | 77.9 |

Source: Statistical Yearbook of the Czech Republic 2000 - 2006.

Table 3: Financial resources of ISPROFIN 1995-2005 (in billion CZK, current prices, in %)

| ISPROFIN   | billion CZK | share of the total sum of ISPROFIN (in %) |
|--|-------------|---|
| Total  | 658.9       | 100.0                                     |
| Included into analysis   | 478.5       | 72.6                                      |
| Totally excluded from the analysis   | 180.3       | 27.4                                      |
| <i>of which</i> regional allocation unknown                                | 81.7        | 12.5                                      |
| allocation abroad  | 6.1         | 0.9                                       |
| current expenditures   | 37.7        | 5.7                                       |
| extraordinary expenditures   | 14.7        | 2.3                                       |
| other specific capital expenditures<br>- e.g. purchase of fighter aircraft | 39.5        | 6.0                                       |

Source: ISPROFIN, authors' calculations.

Table 4: Overview of the analyzed data for the period 1995-2005 (in billion CZK, current prices)

| Thematic sphere of capital expenditure                             | Financial volume | Source                             | Level            |
|--|------------------|------------------------------------|------------------|
| Total capital expenditure  | 617.2            | State budget (ISPROFIN), SFTI, SEF | NUTS 3           |
| Capital expenditure excluding transport infrastructure investments | 394.9            | State budget (ISPROFIN), SEF       | NUTS 3<br>NUTS 4 |
| Transport infrastructure investments                               | 222.3            | SFTI, State budget (ISPROFIN)      | NUTS 3           |
| Explicit regional policy and regional development                  | 7.2              | State budget (ISPROFIN)            | NUTS 4           |
| Environmental capital expenditure                                  | 25.6             | SEF, State budget (ISPROFIN)       | NUTS 4           |
| Capital expenditure devoted to universities and R&D                | 25.4             | State budget (ISPROFIN)            | NUTS 4           |

Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic), Internal materials of the State Fund for Transport Infrastructure (SFTI) and the State Environmental Fund (SEF), authors` calculation.

Table 5: Capital expenditure per capita and related to regional GDP (1995-2005, in %)

| Region                 | Total investments in bln CZK | Total investments per capita Czech Rep. = 100 % | Total investments excluded of transport infrastructure investments per capita, Czech Rep. = 100 % | GDP per capita, Czech Rep. = 100 % | Total investments per GDP, Czech Rep. = 100 % | Total investments excluded of transport infrastructure investments per GDP, Czech Rep. = 100 % | Transport infrastructure investments per GDP, Czech Rep. = 100 % |
|------------------------|------------------------------|---|---|------------------------------------|---|--|--|
| Prague                 | 168.3                        | 237   | 326   | 206                                | 116   | 159  | 38   |
| Central Bohemia region | 55.9                         | 84  | 76  | 95                                 | 86  | 78   | 100  |
| South Bohemia region   | 29.2                         | 78  | 66  | 89                                 | 87  | 74   | 109  |
| Plzeňský region        | 42.3                         | 128   | 89  | 94                                 | 136   | 95   | 209  |
| Karlovarský region     | 13.1                         | 71  | 44  | 80                                 | 89  | 55   | 150  |
| Ústecký region         | 45.3                         | 91  | 53  | 82                                 | 111   | 64   | 194  |
| Liberecký region       | 21.9                         | 85  | 85  | 83                                 | 102   | 103  | 102  |
| Královehradecký region | 22.6                         | 68  | 78  | 90                                 | 76  | 86   | 57   |
| Pardubický region      | 23.6                         | 77  | 66  | 84                                 | 92  | 78   | 116  |
| Vysočina region        | 18.8                         | 60  | 67  | 87                                 | 69  | 78   | 54   |
| South Moravia region   | 61.6                         | 90  | 93  | 93                                 | 98  | 101  | 93   |
| Olomoucký region       | 40.9                         | 106   | 87  | 77                                 | 137   | 113  | 181  |
| Zlínský region         | 19.9                         | 55  | 57  | 82                                 | 68  | 71   | 64   |
| Moravskoslezský region | 53.9                         | 70  | 51  | 80                                 | 89  | 65   | 131  |
| Czech Republic         | 617.2                        | 100   | 100   | 100                                | 100   | 100  | 100  |

Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001, authors` calculations.

Table 6a: Correlation of selected indicators for NUTS 3 regions (n=13 - Prague excluded)

|  | Regional share of GDP | Regional share of economic aggregate | Regional unemployment rate | Regional share of total investment | Regional share of transport investment | Regional share of investment excluding transport | Regional share of investment in universities and R&D |
|--|-----------------------|--------------------------------------|----------------------------|------------------------------------|--|--|--|
| Regional share of economic aggregate                 | 0,993                 |                                      |                            |                                    |  |  |  |
| Regional unemployment rate                           | 0,304                 | 0,357                                |                            |                                    |  |  |  |
| Regional share of total investment                   | 0,906                 | 0,910                                | 0,399                      |                                    |  |  |  |
| Regional share of transport investment               | 0,717                 | 0,741                                | 0,634                      | 0,892                              |  |  |  |
| Regional share of investment excluding transport     | 0,905                 | 0,890                                | 0,097                      | 0,903                              | 0,612                                  |  |  |
| Regional share of investment in universities and R&D | 0,583                 | 0,592                                | -0,001                     | 0,618                              | 0,323                                  | 0,775  |  |
| Regional share of expenditure on regional policy     | 0,782                 | 0,818                                | 0,547                      | 0,710                              | 0,573                                  | 0,698  | 0,617  |

1  
2  
3 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005), authors`  
4  
5 calculations.  
6

7  
8 Note: Critical value of correlation coefficient for 95% level of significance is 0,497.  
9

10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47

For Peer Review Only

Table 6b: Correlation of selected indicators for NUTS 4 regions (n=76 - Prague excluded)

|   | Regional share<br>of economic<br>aggregate | Regional<br>unemployment<br>rate | Regional share of<br>investment excluding<br>transport | Regional share of<br>investment in<br>universities and R&D |
|---|--|----------------------------------|--|--|
| Regional unemployment rate                              | 0,111                                      |                                  |  |  |
| Regional share of investment excluding<br>transport     | 0,851                                      | -0,009                           |  |  |
| Regional share of investment in universities<br>and R&D | 0,822                                      | -0,039                           | 0,915  |  |
| Regional share of expenditure on regional<br>policy     | 0,320                                      | 0,404                            | 0,228  | 0,122  |

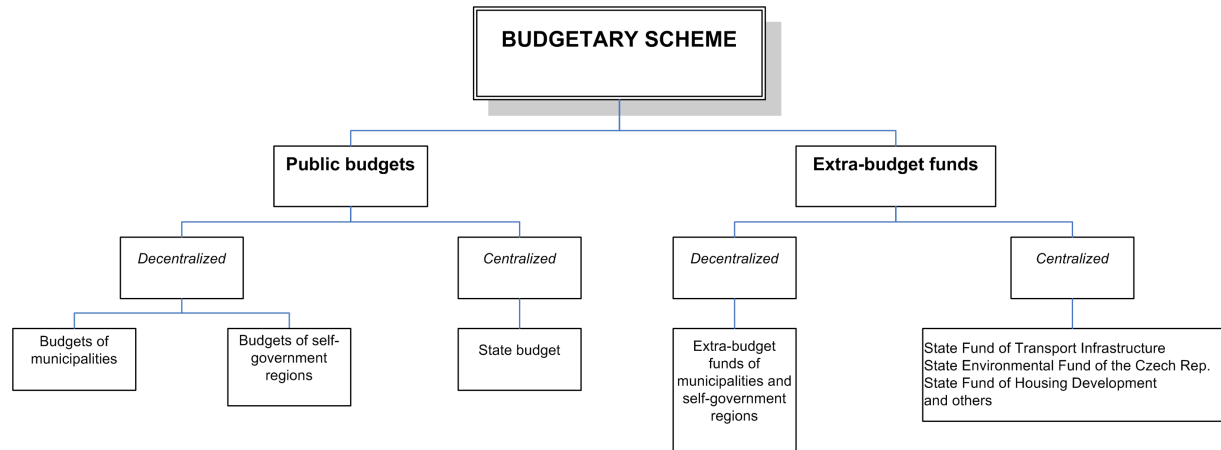
Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005), authors' calculations.

Note: Critical value of correlation coefficient for 95% level of significance is 0,200.



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

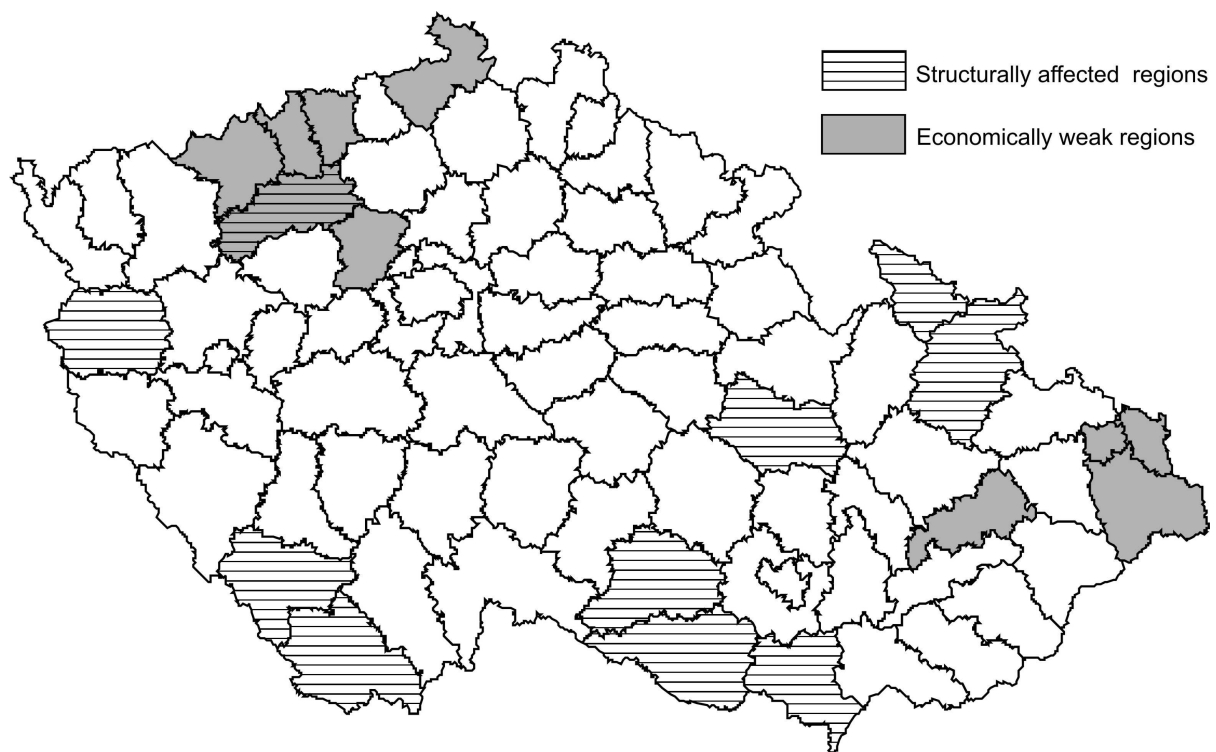
Figure 1: Simplified budgetary scheme of the Czech Republic



Source: modified on the basis of PEKOVÁ (2002), p. 79

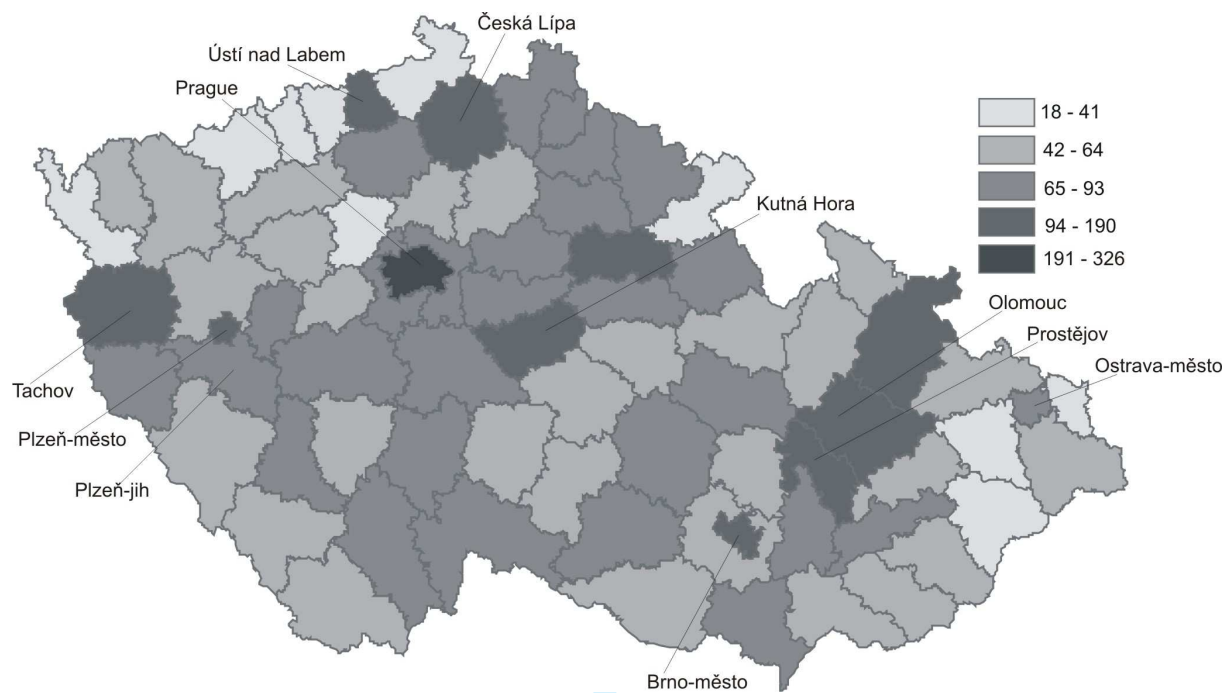
Peer Review Only

Figure 2: Assisted regions supported within Czech explicit regional policy



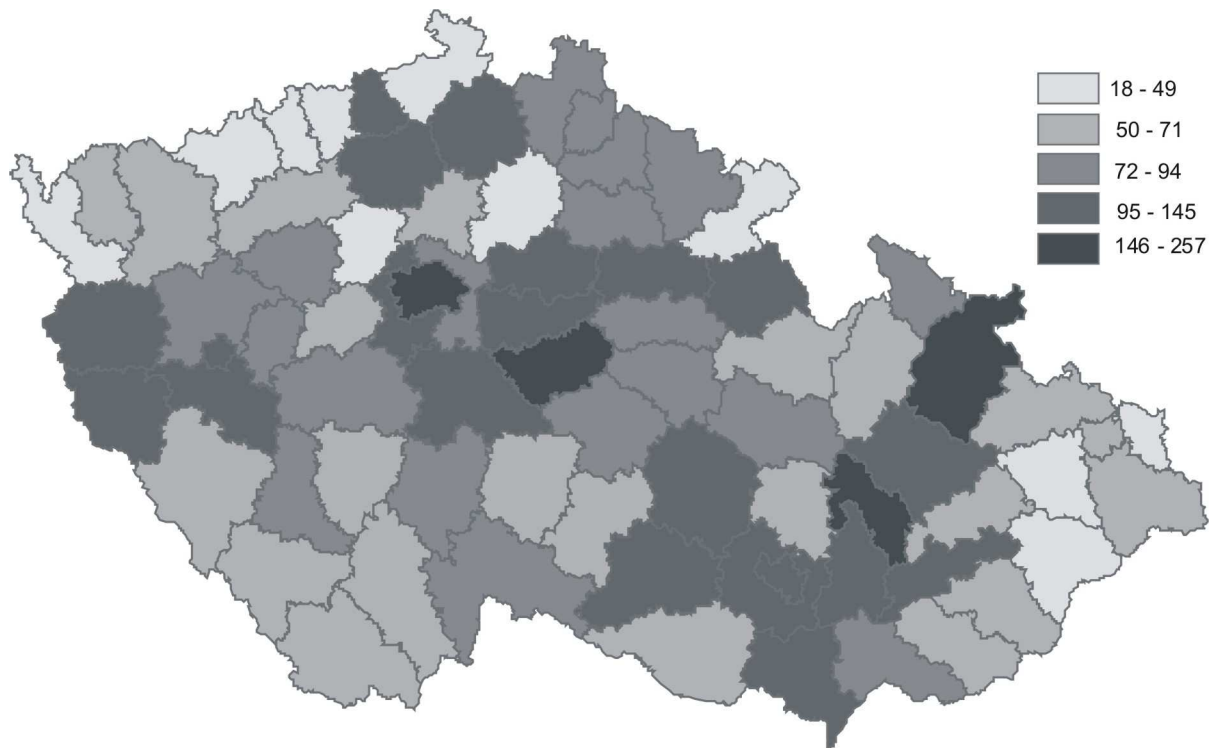
Source: Ministry for Regional Development.

Figure 3: Capital expenditure per capita after exclusion of transport infrastructure in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).



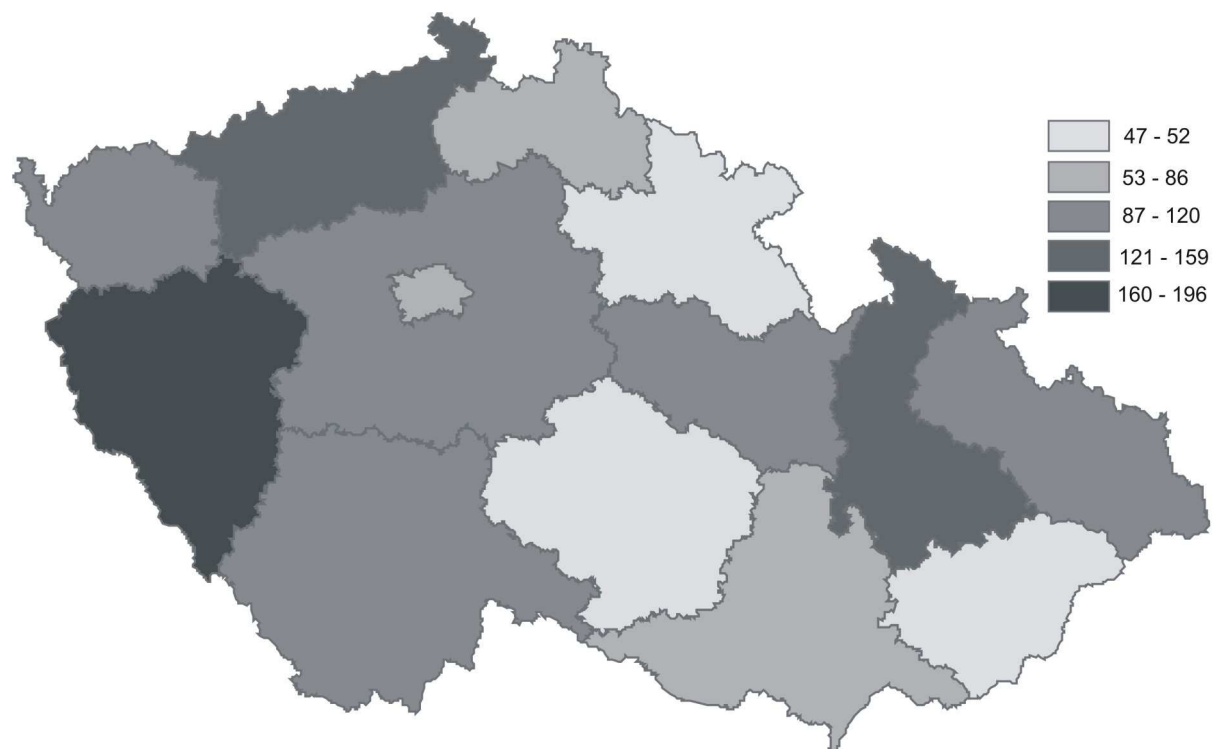
Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

Figure 4: Capital expenditure per economic aggregate after exclusion of transport infrastructure investments in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).



Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005), authors` calculations.

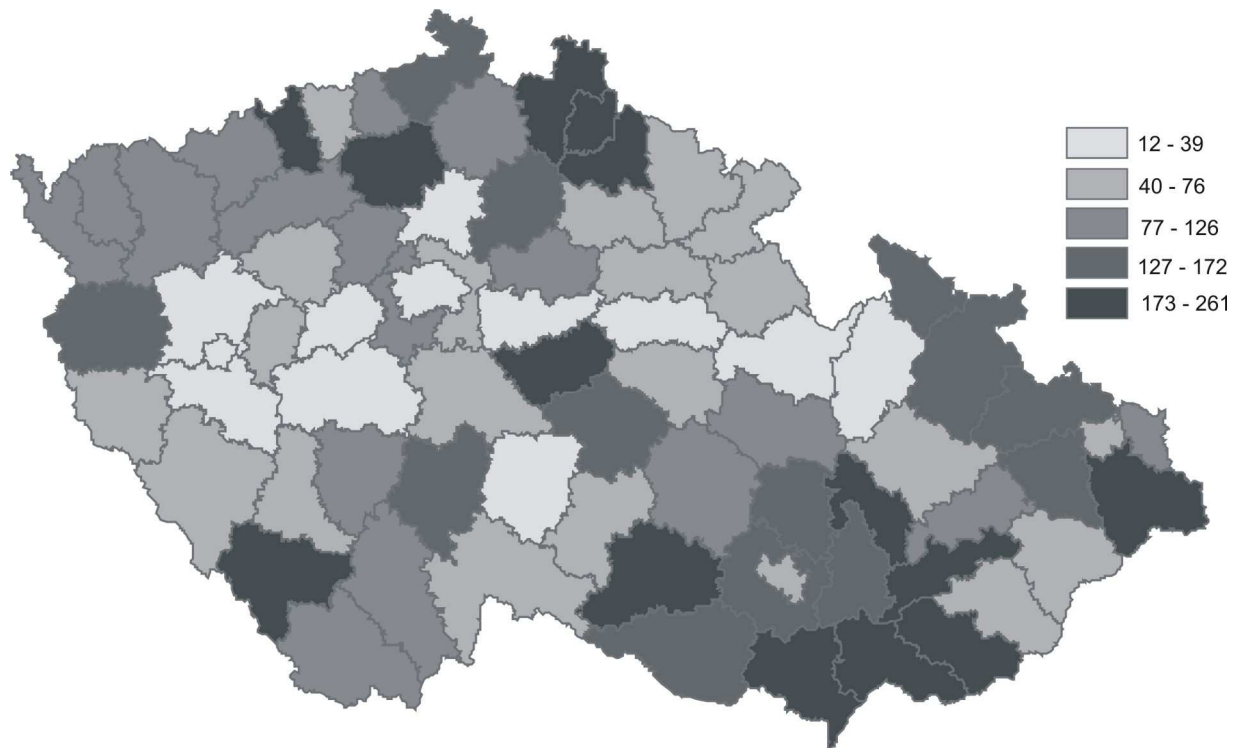
Figure 5: Transport infrastructure investment per capita in NUTS 3 regions, 1995–2005,  
Czech Rep. = 100 % (in %)



Source: ISPROFIN, SFTI, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

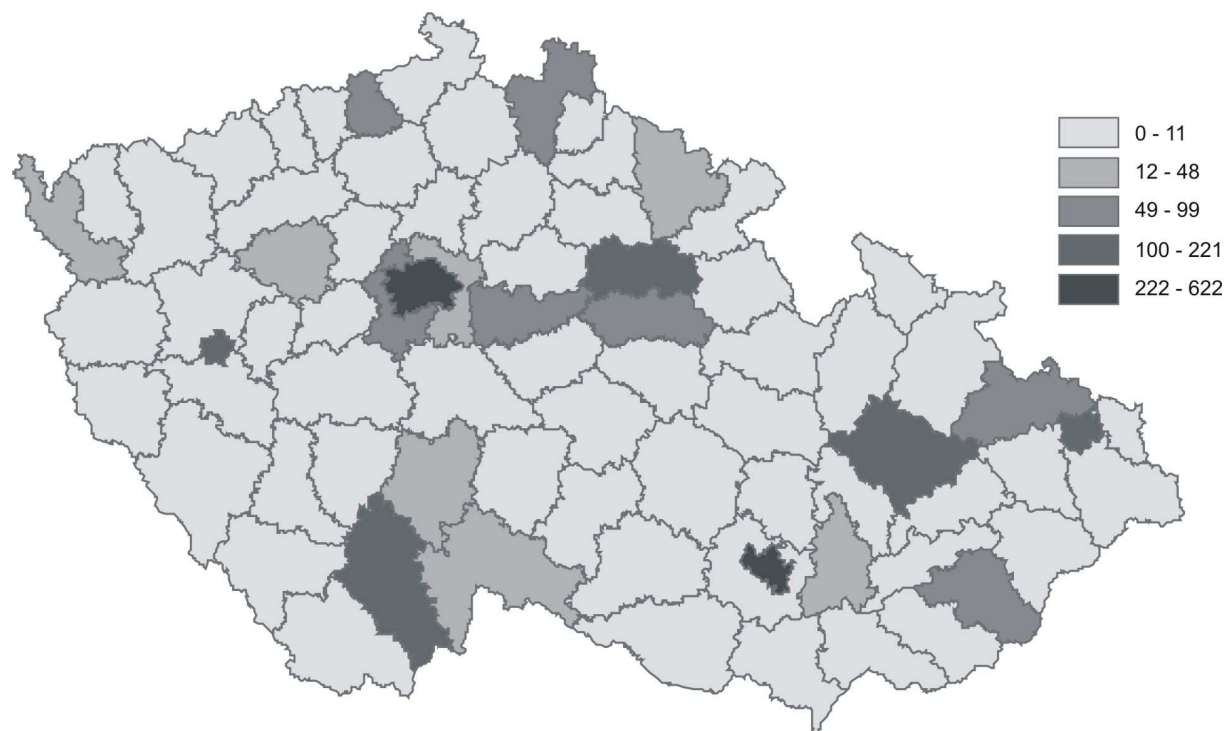
Review Only

Figure 6: Capital expenditure per capita from the state budget devoted to explicit regional policy in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).



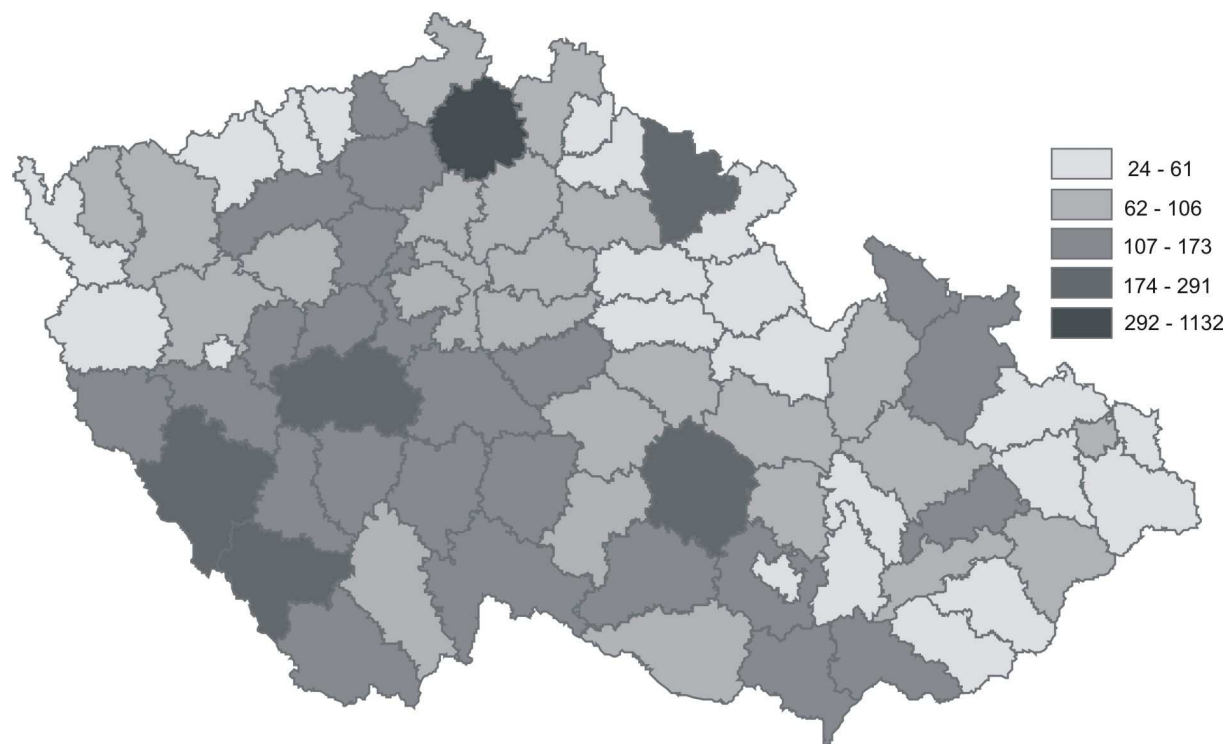
Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

Figure 7: Capital expenditure per capita of the state budget devoted to universities and for R&D institutions in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %)



Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors` calculations.

1  
2  
3 Figure 8: Environmentally related capital expenditure per capita of the state budget in 1995–  
4 2005 and of the State Environmental Fund in 1999–2005 in NUTS 4 regions, Czech Rep.  
5  
6  
7  
8 =100 % (in %)  
9



35 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors`  
36 calculations.  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



1  
2  
3 ARMSTRONG H. and TAYLOR J. (1985) *Regional Economics and Policy*. Philip Allan,  
4  
5 Hertfordshire.  
6  
7

8  
9  
10 AUTERI M. and COSTANTINI M. (2004) Fiscal Policy and Economic Growth: The Case of  
11  
12 the Italian Regions, *The Review of Regional Studies* **34**, 72-94.  
13  
14

15  
16  
17 BENNET R. J. (1980) *The Geography of Public Finance*. Methuen, London.  
18  
19

20  
21  
22 BLAŽEK J. (1995) Le nouveau système de financement des administratios locales en  
23  
24 République tchèque et ses incidences è Í échelle régionale, Cahiers du CEFRES, No.9f,  
25  
26 Prague.  
27  
28

29  
30  
31  
32 BLAŽEK J. (2005a) Financing of Local Government in the Czech Republic: A Never Ending  
33  
34 Reform Process? (Part III), in *New Modes of Governance. The Evolution of Regional*  
35  
36 *Development Regimes in CEE - The Czech Republic* (available at: [http://www.eu-](http://www.eu-newgov.org/database/DELIV/D15D02c_Regional_Development_Regimes_CzechR.pdf)  
37  
38 [newgov.org/database/DELIV/D15D02c\\_Regional\\_Development\\_Regimes\\_CzechR.pdf](http://www.eu-newgov.org/database/DELIV/D15D02c_Regional_Development_Regimes_CzechR.pdf)).  
39  
40

41  
42  
43 BLAŽEK, J. (2005b) Trends to Regional Disparities in the Czech Republic in Pre-Accession  
44  
45 Period in the European Context, *Geographia Polonica* **78.2**, p. 91-106.  
46  
47

48  
49  
50  
51 BLAŽEK J. and CSANK P. (2007) The West-East gradient and regional development: The  
52  
53 case of The Czech Republic, *Acta Universitatis Carolinae - Geographica* **1-2**, 89-108.  
54  
55

56  
57  
58 CAMINAL R. (2004) Personal redistribution and the regional allocation of public  
59  
60 investment, *Regional Science and Urban Economics* **34**, 55-69.

1  
2  
3  
4  
5  
6 CAMAGNI R. (2006) Territorial Impact Assessment – TIA: a methodological proposal,  
7  
8 *Scienze Regionali – Italian Journal of Regional Science* **5**, 135-146.  
9

10  
11  
12  
13 CEC (1996) First Report on Economic and Social Cohesion. Brussels (available at:  
14  
15 [http://ec.europa.eu/regional\\_policy/sources/docoffic/official/reports/repc\\_en.htm](http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/repc_en.htm)).  
16  
17

18  
19  
20 CEC (2004) DG REGIO – The Impact of Member State Policies on Cohesion (Final report)  
21  
22 (available at:  
23  
24 [http://europa.eu.int/comm/regional\\_policy/sources/docgener/studies/pdf/3cr/impact\\_member.](http://europa.eu.int/comm/regional_policy/sources/docgener/studies/pdf/3cr/impact_member.pdf)  
25  
26 pdf).  
27  
28

29  
30  
31 CEC (2006a) Territorial Impact Assessment. In CEC: *European Territorial Research in*  
32  
33 *Progress*, pp. 67-132. Conference Proceedings of the 1st ESPON Scientific Conference,  
34  
35 ESPON Programme, Luxembourg.  
36  
37

38  
39  
40 CEC (2006b) *Applied Territorial Research. Building a Scientific Platform for*  
41  
42 *Competitiveness and Cohesion*. ESPON Scientific Report II, ESPON Programme,  
43  
44 Luxembourg.  
45  
46  
47  
48  
49

50  
51 CUADRADO J.R., DE LA DEHESA G. and PRECEDO, A. (1993) Regional imbalances and  
52  
53 government compensatory financial flows: the case of Spain, in Giovannini A. (Ed.) *Finance*  
54  
55 *and Development: Issues and Experience*, pp. 261-300. Cambridge University Press,  
56  
57 Cambridge.  
58  
59  
60

1  
2  
3 DG RESEARCH (1991) *The Regional Impact of Community Policies*. Research and  
4  
5 Documentation Papers. Regional policy and transport, series 17., Office for Official  
6  
7 Publications of the European Communities, Luxembourg.  
8  
9

10  
11  
12 DRBOHLAV D. and SÝKORA L. (1997) Gateway cities in the process of regional integration  
13  
14 in Central and Eastern Europe: the case of Prague, in Biffi G. *Migration, Free Trade and*  
15  
16 *Regional Integration in Central and Eastern Europe*, pp. 215-237. Verlag Österreich, Wien.  
17  
18  
19

20  
21  
22 EUROPEAN COMMISSION (1998) *Economic and social cohesion in the European Union:*  
23  
24 *The impact of Member States' own policies*. Office for Official Publications of the European  
25  
26 Communities, Luxembourg.  
27  
28

29  
30  
31 EUROPEAN COMMISSION (2004) *A new partnership for cohesion. Convergence,*  
32  
33 *Competitiveness, Cooperation. Third Report on Economic and Social Cohesion*. Office for  
34  
35 Official Publications of the European Communities, Luxembourg.  
36  
37

38  
39  
40 FLUENTE A. de la (2004) Second-best redistribution through public investment: a  
41  
42 characterization, an empirical test and an application to the case of Spain, *Regional Science*  
43  
44 *and Urban Economics* **34**, 489-503.  
45  
46  
47

48  
49  
50 HAMPL M. (2005) *Geografická organizace společnosti v České republice: transformační*  
51  
52 *procesy a jejich obecný kontext*. Faculty of Science, Charles University in Prague, Prague.  
53  
54  
55

56  
57  
58 HEALD D. (1994) Territorial public expenditure in the United Kingdom, *Public*  
59  
60 *Administration* **72**, 147-175.

1  
2  
3 HEALD D. and SHORT J. (2002) The regional dimension of public expenditure in England.  
4  
5  
6 *Regional Studies* **36**, 743-755.  
7

8  
9  
10 HILL E. and LOWE J. (2007) Regional impact assessment: an Australian example, *Impact*  
11  
12 *Assessment and Project Appraisal* **25**, 189-197.  
13

14  
15  
16  
17 GORZELAK G. (1992) Dilemmas of Polish regional policies during transition, in Gorzelak  
18  
19 G. and Kuklinski A. *Dilemmas of regional policies in Eastern and Central Europe*, pp. 18-  
20  
21 38. University of Warsaw, Warsaw.  
22  
23

24  
25  
26  
27 GUIÁN M.C. and CANELO M.T. (1996) Territorial Public Expenditure and Revenue:  
28  
29 Economic Impact in the European Regional Growth, Euro-American Association of  
30  
31 Economic Development, Working Paper no. 8, Series Economic Development, University of  
32  
33 Santiago de Compostela (available at: <http://ideas.uqam.ca/ideas/data/eaecodev.html>).  
34  
35

36  
37  
38  
39 KATAOKA M. (2005) Effect of Public Investment on the Regional Economies in Postwar  
40  
41 Japan, *Review of Urban & Regional Development Studies* **17**, 115-139.  
42  
43

44  
45  
46 KOSHATZKY K. (2001) The regionalisation of Innovation Policy in Germany - Theoretical  
47  
48 Foundations and Recent Experience. Working Papers Firms and Region No. R1/2000,  
49  
50 Institute for Systems and Innovation Research, Fraunhofer.  
51  
52

53  
54  
55 LEFEBER L. (1964) Regional Allocation of resources in India, in Alonso W. and Friedmann  
56  
57 J. *Regional Development and Planning, A Reader*, pp. 642-653. The M.I.T. Press, Cambridge,  
58  
59 Massachusetts.  
60

1  
2  
3 MACEŠKOVÁ M. (2007) Regionální dimenze fiskální politiky na příkladě veřejných  
4 investičních výdajů v Česku (Regional dimension of fiscal policy – an example of public  
5 capital expenditure in the Czech Republic), *Geografie-Sborník ČGS* **112**, 17-32.  
6  
7  
8  
9

10  
11  
12 MARTHUR V.K. and STEIN S. (1980) Regional Impact of Monetary and Fiscal Policy: An  
13 Investigation into the Reduced Form Approach, *Journal of Regional Science* **20**, 343-351.  
14  
15  
16

17  
18  
19 MARTIN R. (1999) *The Regional Dimension in European Public Policy: Convergence or*  
20 *Divergence?*. Palgrave Publisher, New York.  
21  
22  
23

24  
25  
26 MARTIN R. (2005) Venture Capital Programmes in the UK and Germany: In What Sense  
27 Regional Policies?, *Regional Studies* **39**, 255-273.  
28  
29  
30

31  
32  
33 MIDWINTER A. (2004) The Changing Distribution of Territorial Public Expenditure in the  
34 UK, *Regional and Federal Studies* **14**, 499-512.  
35  
36  
37

38  
39  
40 MOLLE W. and CAPPELLIN R. (1988) (Eds) *Regional Impact of Community Policies in*  
41 *Europe*. Aldershot, Avebury.  
42  
43  
44

45  
46  
47 MOLLE W. (2007) *European Cohesion Policy*. Routledge, London.  
48  
49  
50

51  
52  
53 MRD (2006) *Strategie regionálního rozvoje*. Ministry for Regional Development of the  
54 Czech Republic, Prague.  
55  
56  
57  
58  
59  
60

1  
2  
3 MUSGRAVE A.R. and MUSGRAVE B.P. (1973) *Public Finance in Theory and Practice*.  
4  
5 McGraw-Hill Kogakusha, Tokyo.  
6  
7

8  
9  
10 OUŘEDNIČEK M. and NOVÁK J (2007) Kvantitativní analýza stavu a vývoje  
11 segregace/separace obyvatelstva, in Sýkora L. *et al Segregace v*  
12 *České republice (Segregation in the Czech Republic)*, pp 9-28.  
13  
14 Ministry for Regional Development, Prague.  
15  
16  
17  
18

19  
20  
21  
22 PEKOVÁ J. (2002) *Veřejné finance - úvod do problematiky*. ASPI Publishig, Praha.  
23  
24

25  
26  
27 PORTEOUS D.J. (1995) *The Geography of Finance*. Aldershot, Avebury.  
28  
29

30  
31 PRUD'HOMME R. (1993) The Potential role of the EC budget in the reduction of spatial  
32 disparities in a European economic and monetary union, in Commission of the European  
33 Communities *The Economics of Community Public Finance*, pp. 321-351. Reports and  
34 Studies. Directorate-General for Economic and Financial Affairs, European Economy no. 5.  
35  
36  
37  
38  
39  
40  
41 Luxembourg.

42  
43  
44  
45 ROBERT J. *et al* (2001) *Spatial Impacts of Community Policies and Costs of Non-co-*  
46 *ordination*. European Commission, Brussels.  
47  
48  
49

50  
51  
52  
53 SHORT J. (1978) The regional distribution of public expenditure in Great Britain, 1967/70 –  
54  
55 1973/74', *Regional Studies* **12**, 499-510.  
56  
57  
58  
59  
60

1  
2  
3 SHORT J. (1981) *Public Expenditure and Taxation in the UK Regions*. Gower Publishing  
4 Co. Ltd, Hampshire (England).  
5  
6  
7

8  
9  
10 SHOUT J.A. and JORDAN A.J. (2007) From Cohesion to Territorial Policy Integration  
11 (TPI): Exploring the Governance Challenges in the European Union, *European Planning*  
12 *Studies* **15**, 835-851.  
13  
14  
15

16  
17  
18 SCHÄFFER N. (2005) Coordination of European spatial development: Whose  
19 responsibility?, *The Town Planning Review* **76**, 14-57.  
20  
21  
22  
23

24  
25  
26 SCHINDEGGER F. and TATZBERGER G. (2003) TIA minimum requirements – a  
27 Guidance for Policy Impact Projects of ESPON. Austrian Institute for Regional Studies and  
28 Spatial Planning (available at:  
29  
30  
31  
32  
33  
34 [http://www.espon.lu/online/documentation/projects/cross\\_thematic/816/2.ir-3.1.pdf](http://www.espon.lu/online/documentation/projects/cross_thematic/816/2.ir-3.1.pdf)).  
35  
36  
37

38  
39 THE ESPON MONITORING COMMITTEE (2005) ESPON 2.1.2 Territorial Effects of EU  
40 Research and Development Policies (Final report) (available at:  
41  
42  
43  
44 [http://www.espon.eu/mmp/online/website/content/projects/243/266/file\\_399/fr-](http://www.espon.eu/mmp/online/website/content/projects/243/266/file_399/fr-2.1.1_final.pdf)  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

59  
60 UHLÍŘ D. (2004) Regional versus National Development: What sort of Policy for new  
Czech Regions?, in Drbohlav D., Kalvoda J. and Voženílek V. (Eds) *Czech Geography at the  
Dawn of the Millenium*, pp. 269-277. Palacky University in Olomouc, Olomouc.

1  
2  
3 WILSON P.A. and WISE C. (1986) The Regional Implications of Public Investment in Peru,  
4  
5 1968-1983, *Latin American Research Review* **21**, 93-116.  
6  
7  
8  
9

10 WISHLADE F., YUILL D., TAYLOR S., DAVEZIES L., NICOT B.H. and PRUD`HOMME R. (1996):  
11  
12 Economic and Social Cohesion in the European Union: The Impact of Member States`Own  
13  
14 Policies. Final report for the European Commission. European Policies Research Centre,  
15  
16 University of Strathclyde, Glasgow.  
17  
18  
19  
20  
21

22 YAMANO N. and OHKAWARA T. (2000) The Regional Allocation of Public Investment:  
23  
24 Efficiency or Equity, *Journal of Regional Science* **40**, 205-229.  
25  
26  
27  
28  
29  
30  
31

### 32 Other sources

33  
34  
35  
36

37 ISPROFIN – Internal Material of Ministry of Finance of the Czech Republic

38 Internal Material of State Fund for Transport Infrastructure of the Czech Republic

39 Internal Material of State Environmental Fund of the Czech Republic

40  
41  
42 Statistical Yearbooks of the Czech Republic 1997-2006 – Czech Statistical Office

43  
44  
45  
46 Regional accounts – Czech Statistical Office  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



# Regional analysis of public capital expenditure: to which regions is public capital expenditure channelled – to “rich” or to “poor” ones?

## Abstract

The paper aims to contribute to the debate on the regional dimension of sectoral (i.e. non-regional) policies and to empirically demonstrate the huge discrepancy between both the volume and the regional pattern of sectoral public capital expenditure policies on the one hand, and official regional policy on the other. The analyses were based on a unique database of public investment in the Czech Republic covering the years 1995–2005. Their results show significant conflicts in policy objectives and thus represent a clear argument in favour of pursuing territorial impact assessment (TIA) of sectoral policies.

**Key words:** regional impact of non-regional policies, sectoral policies, territorial impact assessment, regional policy, public investments, Czech Republic

**JEL classifications:** H5, E61, R 11, R 58

## Acknowledgements

This paper received financial support from Research Programme No. MSM 0021620831 sponsored by the Czech Ministry of Education, Youth and Sport. The authors would like to thank to two anonymous referees for their helpful comments.

## 1. Introduction

The aim of the paper is to contribute to the debate on the regional dimension and the regional impact of sectoral public capital expenditure policies. This debate started decades ago (e.g. SHORT, 1978; BENNETT, 1980; MARTHUR and STEIN, 1980; MOLLE and CAPPELLIN,

1  
2  
3 1988) but recently received a significant impetus in the form of a discussion on the regional  
4 impact of sectoral policies and the possibilities of their “regionalization” (e.g. DG RESEARCH,  
5 1991; MARTIN, 1999; ROBERT *et al.*, 2001; MOLLE, 2007). The “regionalization” of sectoral  
6 policies can be understood as the fine-tuning of sectoral public expenditure according to the  
7 needs and circumstances of specific regions.<sup>i</sup> One of the important results of this discussion  
8 was the gradual development of the methodology of the territorial impact assessment of large  
9 projects and later, also of programmes and policies – SCHINDEGGER and TATZBERGER, 2003;  
10 CAMAGNI, 2006). The increasing attention being paid to the regional dimension of public  
11 expenditure policies stemmed originally from the effort to learn how to improve or - more  
12 precisely - how to ensure the coordination of the territorial impact of the EU policy of  
13 economic and social cohesion (ESC) and of other European policies (e.g. CEC, 1996; SHOUT  
14 and JORDAN, 2007). Moreover, at the same time, there was a significant research endeavour to  
15 discover to what extent the regional impact of ESC policy has been in compliance with the  
16 spatial effects of numerous national public policies of the EU Member States (CEC, 2004).

17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36 Nevertheless, the number of existing analyses of the regional impact of sectoral  
37 policies is still relatively limited (for exceptions see e.g. HEALD, 1994; AUTERI and  
38 COSTANTINI, 2004; KATAOKA, 2005; MACEŠKOVÁ, 2007), mostly due to the severe data  
39 limitations in most countries. Therefore, the main aim of this article is an attempt to perform  
40 an analysis of the regional dimension of public capital expenditure in one of the new Member  
41 States (the Czech Republic) at the level of the NUTS 3 and 4 regions. This analysis is based  
42 on a unique data set of capital public expenditure covering investment projects supported  
43 during 1995–2005.

44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55 The analyses undertaken here are aimed at answering several research questions.  
56 Firstly, the relation between the level of the socio-economic development of the regions and  
57 the amount of invested public capital expenditure will be investigated. It is assumed that  
58  
59  
60

1  
2  
3 public investments are highly concentrated in the most socio-economically developed regions.  
4  
5 Such a regional allocation of this type of public funds would be in accordance with the  
6  
7 principles of a strategic regional policy (for more on strategic regional policy see e.g.  
8  
9 GORZELAK, 1992). In other words, given the many deficiencies in the sphere of the technical  
10  
11 and other infrastructures inherited from the communist period, it is supposed that public  
12  
13 investment was primarily focused on the enhancement of the infrastructure in major cities and  
14  
15 namely in Prague to strengthen the gateway effect (DRBOHLAV and SÝKORA, 1997) and to  
16  
17 enhance the competitiveness of the national metropolis on the international scene.  
18  
19  
20  
21

22  
23 Moreover, another reason for the anticipated concentration of public investment in  
24  
25 core regions is the assumed the higher efficiency of investment in these regions (e.g.  
26  
27 CAMINAL, 2004; DE LA FLUENTE, 2004). Therefore, a positive correlation between the level of  
28  
29 socio-economic development and the amount of public capital invested (relative per capita) is  
30  
31 expected. However, it should be stressed that such a regional pattern of public investment  
32  
33 contradicts the objectives of the Czech national strategy for regional development and of  
34  
35 regional policy aiming at decreasing regional disparities and being in compliance with the  
36  
37 “insurance” type of regional policy (MRD, 2006; GORZELAK, 1992). As a result, it can be  
38  
39 argued that there is an immense policy conflict between goals of explicit regional policy and  
40  
41 mostly unintended spatial impacts of much more vigorous non-regional governmental  
42  
43 policies. Therefore, our analyses might also serve as empirical support for the importance of  
44  
45 pursuing territorial impact assessment (TIA), both for major public capital projects and for  
46  
47 sectoral policies as a whole.  
48  
49  
50  
51

52  
53 Secondly, a replication of the traditional East-West gradient of socio-economic  
54  
55 development by the regional structure of capital expenditure is also expected (for more on the  
56  
57 East-West gradient, see BLAŽEK and CSANK, 2007).  
58  
59  
60

1  
2  
3 Obviously, given the fact that public capital expenditure is highly “visible”, the  
4 allocation is inevitably subject to challenge in the political arena, and a significant role of  
5 subjective and “soft” factors in the regional allocation of this expenditure is envisaged.  
6  
7 Despite the fact that the available data does not allow for a thorough explanation of the  
8 obtained result, the potentially most important explanatory factors are identified.  
9  
10  
11  
12

13  
14  
15 Finally, it is believed that a detailed scrutiny of the regional structure of public  
16 expenditure significantly helps our understanding of regional development.  
17  
18

19  
20 The paper is structured as follows. Firstly, the theoretical debate and the most  
21 important findings of previous studies are summarized. Next, the data and the methodology  
22 are described. Thirdly, the main findings of the empirical analyses of public capital  
23 expenditure on the NUTS 3 and NUTS 4 levels are provided and discussed. Finally,  
24 conclusions and policy implications are drawn.  
25  
26  
27  
28  
29  
30  
31  
32  
33

## 34 **2. Regional impact of fiscal policy and its sectoral policies**

35  
36 The subject of public finance and fiscal policy is an important and traditional sphere of  
37 research for economists (e.g. MUSGRAVE and MUSGRAVE, 1973; ATKINSON and STIGLITZ,  
38 1980), nevertheless, geographers have also been interested in this sphere for several decades  
39 (for example BENNET, 1980; HEALD, 1994; BLAŽEK, 1995). While economists often build  
40 models of public sector spending and frequently deal with the issue of the efficiency of public  
41 sector spending, geographers tend to derive the implications of public finance for regional  
42 development (for example BLAŽEK, 1995; PORTEOUS, 1995).  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52

53 Obviously, fiscal policy as a whole has a huge regional impact, depending on the  
54 design of both the revenue and expenditure sides of the state budget. However, the regional  
55 patterns of both revenue and expenditure are unknown in most countries. Generally, it can be  
56 expected that a system of progressive taxation reduces revenues in more affluent regions  
57  
58  
59  
60

1  
2  
3 while social benefits tend to flow into the less well off regions, representing an important  
4 mechanism for interregional redistribution (PRUDHOMME, 1993; WISHLADE *et al.*, 1996). The  
5 regional redistribution of financial resources via fiscal policy is one of the important factors  
6 contributing to the economic growth of the respective regions (LEFEBER, 1964; GUIÁN and  
7 CANCELO, 1996) and helps the social stabilization and internal cohesion of the country in  
8 question (DE LA FLUENTE, 2004). Nevertheless, in the case of the regional allocation of capital  
9 expenditure, there is even less certainty about the actual regional pattern of this expenditure  
10 than in the case of current expenditure.  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21

22 Authors focusing on analyses of the impact of fiscal policy on the growth of particular  
23 regions arrive at the conclusion that public investments are having measurable positive effects  
24 on the respective regions (e.g. MARTHUR and STEIN, 1980; FÖLSTER and HENREKSON, 2001;  
25 AUTERI and COSTANTINI, 2004). Other studies are devoted to the investigation of efficiency  
26 issues (for example GUIÁN and CANCELO, 1996; DE LA FLUENTE, 2004). Other authors point  
27 to the problem of the insufficient coordination of different public policies and activities, as  
28 their goals and effects can be overlapping or even contradictory (e.g. WISHLADE *et al.*, 1996;  
29 MARTIN, 2005; SHOUT and JORDAN, 2007). In addition, some other studies have dealt with  
30 issues of social justice or equity within the sphere of public finance (e.g. BOYN and POWELL,  
31 1995).  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44

45 One country where the allocation of public money attracts considerable attention from  
46 both politicians and analysts is the UK. However, the main rationale for these studies is  
47 mainly the issue of the distribution of public expenditure between England, Wales, Scotland  
48 and Northern Ireland in the context of devolution (e.g. SHORT, 1978; HEALD, 1994; HEALD  
49 and SHORT, 2002; MIDWINTER, 2004). In Japan, KATAOKA (2005) assessed the regional  
50 distribution of public investments between 47 prefectures in the post-war period. Kataoka  
51 noticed that periods of high national economic growth are positively correlated with the  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 concentration of public investment into economically strong regions while in periods of low  
4  
5 growth, a more balanced distribution of public capital expenditure has been observed.  
6  
7  
8 WILSON and WISE (1986) studied the regional implications of public investment in a  
9  
10 developing country – Peru – over the period 1968–1983. They showed a high concentration of  
11  
12 public investment into the rich coastal regions during three subsequent time periods, while a  
13  
14 shift in favour of the poorer inland regions was observed in the second half of the period  
15  
16 studied. However, according to these authors, this shift is mainly attributable to the huge  
17  
18 investments in the mining industries in the inland regions.  
19  
20  
21  
22  
23  
24

### 25 **3. Sectoral policies and regional policy**

26  
27 There have already been voices among experts suggesting that the regional impact of  
28  
29 vigorously pursued sectoral policies is much more profound than the regional impact of  
30  
31 regional policy itself (e.g. ROBERT *et al.*, 2001; MARTIN, 2005). Therefore, within this  
32  
33 context, some authors distinguish regional policy in a “narrow” and “broad” sense, while  
34  
35 other authors prefer the terms “explicit” and “implicit” regional policy (e.g. ARMSTRONG and  
36  
37 TAYLOR, 1985; CUADRADO, DE LA DEHESA and PRECEDO, 1993). While it can be agreed that  
38  
39 regional policy in a “narrow” sense is synonym with explicit regional policy, the difference  
40  
41 between implicit regional policy and a regional policy in a “broad” sense should be stressed.  
42  
43 Implicit regional policy encompasses public policies which have been to a certain extent  
44  
45 “regionalized” (i.e. there has been some sort of adjustments of an overall design of sectoral or  
46  
47 non-regional policy in question to meet specific regional conditions and needs). Regional  
48  
49 policy in a “broad” sense, on the other hand, comprises of all public policies or actions  
50  
51 executed by the public sector which have important regional impacts and this importance is to  
52  
53 some extent recognized (e.g. agricultural policy, transport policy, energy policy, competition  
54  
55 policy, science and technology policy). Despite the fact that these policies often lack an  
56  
57  
58  
59  
60

1  
2  
3 explicit definition of regional goals, they are clearly having a specific impact on different  
4 regions (e.g. CUADRADO, DE LA DEHESA and PRECEDO, 1993; EUROPEAN COMMISSION, 1998,  
5  
6 2004; HILL and LOWE, 2007). Examples of public policies that reflect at least some specific  
7 regional characteristics or which react to specific regional conditions are the policy aimed at  
8 attracting large investors to the Czech Republic (UHLÍŘ, 2004) or the R&D policy in Germany  
9 (see KOSCHATZKY, 2001). Considerable attention has been paid to the regional impact of  
10 sectoral policies and analogous policies at EU level in studies undertaken within the ESPON  
11 programme (e.g. THE ESPON MONITORING COMMITTEE 2005).  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21

22 BLAŽEK (2005a) argues that one key component of fiscal policy that has an enormous  
23 regional impact is the way the decentralized public administration bodies (municipalities and  
24 regions) are financed. For example, in 2007, within the state budget of the Czech Republic  
25 only CZK 1.5 bln was allocated to explicit regional policy (which represents only 0,06 % of  
26 Czech GDP), while in the same year the state distributed more than CZK 160 bln to  
27 municipalities and regions via a strictly egalitarian tax-sharing formula (this volume amounts  
28 7,7% of Czech GDP). It is clear that the principles upon which the applied model of financing  
29 local and regional government in particular countries rests are of tremendous importance and  
30 consequently, due to the vast amount of money concerned, the system of local government  
31 financing has a much more profound regional impact than official “explicit” regional policy.  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45

46 Moreover, important regional impacts can be attributable even to non-spending  
47 policies, for example to an anti-monopoly policy. WISHLADE *et al.*, (1996) consider the spatial  
48 impact of non-spending policies as “blind spots” of regional analyses.  
49  
50  
51  
52  
53  
54  
55

#### 56 **4. The budgetary scheme of the Czech Republic**

57  
58  
59  
60



1  
2  
3 The budgetary scheme of the Czech Republic consists of two prime components – public  
4 budgets and extra-budgetary funds created for specific investment purposes such as transport  
5 infrastructure, and expenditure on environmental projects. (see Figure 1).  
6  
7  
8  
9

10  
11  
12 **Figure 1: Simplified budgetary scheme of the Czech Republic**  
13

14  
15 Source: modified on the basis of PEKOVÁ (2002), p. 79

16  
17 (about here).  
18  
19  
20

21 Nevertheless, due to the focus of this paper on the identification of spatial patterns in the  
22 allocation of public capital expenditure, the analysis was limited to a regional analysis (at the  
23 level of the NUTS 3 and NUTS 4 regions) of capital investment allocated from central  
24 sources, i.e. from the state budget and from state extra-budgetary funds. The Czech state  
25 budget operates with the dominant part of public finance assigned to public budgets, but as  
26 Table 1 illustrates, the share of state budget allocated to capital expenditure is rather small.  
27 This fact can be partly explained by the key role of state extra-budgetary funds in the case of  
28 such expenditure (see Table 2), as they are designed to function as a vehicle allowing the  
29 implementation of multi-annual projects, while the state budget in principle provides the  
30 financial framework for one year only. In addition, a noteworthy volume of public capital  
31 expenditure flows through decentralized public budgets, and especially via municipal budgets  
32 (on average in 2000–2005 the capital expenditure of decentralized public budgets accounted  
33 for CZK 74.2 bln per year, which represents 28.5 % of the total decentralized public budgets  
34 on average per year). Nonetheless, in line with our research focus the analysis presented  
35 below concentrates only on the capital expenditure allocated from the central level.  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58

59 **Table 1: Expenditure of the Czech state budget in 1995–2005 (current prices, in billion**  
60 **CZK, in %)**



1  
2  
3 Source: Statistical Yearbook of the Czech Republic 1997, 1999, 2001, 2002, 2004, 2006.  
4

5 Note: In December 2007, the exchange rate was approx. 1 EUR = 27 CZK.  
6

7 (about here)  
8

9  
10 ***Table 2: Expenditure from selected state extra-budgetary funds in 2000–2005 (current***  
11 ***prices, in billion CZK)***  
12

13 Source: Statistical Yearbook of the Czech Republic 2000–2006.  
14

15 (about here)  
16  
17  
18  
19

20 **5. Data and Methodology**  
21

22 The prime source for this regional analysis of the capital expenditure of the state budget of the  
23 Czech Republic is the ISPROFIN (Information System of Programming Funding from the  
24 State Budget) database, which comprises data regarding investment spending from the state  
25 budget, in our case for the years 1995–2005. ISPROFIN is managed by the Ministry of  
26 Finance of the Czech Republic and has been operational since 1995.<sup>ii</sup> The structure of the  
27 entries into ISPROFIN allows a regional break-down of capital expenditure at the level of the  
28 NUTS 3 and 4 regions. However, several methodological problems arose during the analysis  
29 of this data, and consequently a number of projects and programmes (and the corresponding  
30 financial volume of capital expenditure) had to be excluded from the analysis. The following  
31 criteria for omitting particular projects or programmes were applied: i) the regional allocation  
32 of the investment incentives was not given or investment was implemented abroad; ii) the  
33 project or programme was predominately for current expenditure; iii) the project was of an  
34 “extraordinary” nature (i.e. expenditure devoted to the recovery of the territories affected by  
35 the 1997 and 2002 floods or devoted to the restitution to former owners of private property  
36 that was nationalized during the communist period).  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 An overview of the financial amounts included (and excluded) from the regional analysis of  
4 public capital expenditure is given in Table 3. Another methodological challenge was  
5 represented by projects which benefited the whole country, but in ISPROFIN were assigned  
6 to one region only. This was especially the case for the purchase of jet fighter aircraft which  
7 were also excluded from the analysis.  
8  
9

10  
11  
12  
13  
14  
15  
16  
17 This problem relates to the fundamental methodological question of which principle  
18 investment expenditure should be attributed to a certain region. For instance, SHORT (1978)  
19 has explicitly distinguished two types of regional expenditure: “regionally relevant” and “total  
20 expenditure” allocated to the region. According to Short, “regionally relevant” expenditure  
21 benefits only the region in which the particular public money was allocated. Alternatively,  
22 WISHLADE *et al.*, (1996) and also CAMINAL (2004) differentiated between the “flow” and  
23 “benefit” approaches to the analysis of the regional distribution of public expenditure. The  
24 “flow” approach assigns expenditure to regions regardless of whether or not the region in  
25 question is an “end user”, while the “benefit” approach concentrates on the end users of the  
26 public money spent, or more precisely on the final beneficiary regions. Consequently, in our  
27 analysis, the flow approach has been applied as it would be impossible to judge each of the  
28 approximately 40,000 investment projects of ISPROFIN included in the analysis on the basis  
29 of the benefit approach.  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50

51 ***Table 3: Financial resources of ISPROFIN 1995–2005 (in billion CZK, current prices, in***  
52 ***%)***  
53

54  
55 Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic), authors` calculations.  
56

57 (about here)  
58  
59  
60

1  
2  
3 In addition to ISPROFIN, which covers capital expenditure financed from the state budget,  
4  
5 the two most relevant extra-budgetary funds were incorporated into our analysis. These two  
6  
7 funds are: The State Fund for Transport Infrastructure (SFTI) and the State Environmental  
8  
9 Fund (SEF). The data on the individual projects supported by these funds were obtained from  
10  
11 the responsible institutions. In the case of the State Fund for Transport Infrastructure, the  
12  
13 capital expenditure for 2001–2005 has been analysed at the level of NUTS 3 regions.  
14  
15 Investment projects to a total value of CZK 222.3 billion were included in the analysis. The  
16  
17 State Environmental Fund is represented by the data concerning expenditure during the years  
18  
19 1999–2005, which amounted to CZK 13 billion. Therefore, this analysis covers capital  
20  
21 expenditure from the state budget and from two extra-budgetary funds to a total value of CZK  
22  
23 617 bln. The analysis was structured into six parts, covering the most relevant thematic  
24  
25 spheres of public capital expenditure (see Table 4).  
26  
27  
28  
29  
30  
31  
32  
33

34 ***Table 4: Overview of the analyzed data for the period 1995-2005 (in billion CZK, current***  
35 ***prices)***  
36  
37

38 Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic), Internal materials of  
39 the State Fund for Transport Infrastructure (SFTI) and the State Environmental Fund (SEF), authors`  
40  
41 calculations.  
42  
43

44 (about here)  
45  
46  
47  
48

## 49 **6. Results**

50  
51 In this section, the main results of the regional analysis of capital expenditure committed  
52  
53 within the sectoral governmental policies in the Czech Republic will be presented (Table 4  
54  
55 provides an overview of the financial volumes analysed). First, attention is paid to an analysis  
56  
57 of the distribution of all capital expenditure, that is an analysis of investment projects financed  
58  
59 from the state budget and from relevant state extra-budgetary funds. In view of the fact that  
60

1  
2  
3 the overall nature of regional differentiation of investment allocation is considerably  
4 influenced by investments in the transport infrastructure, in the next stage such investments  
5 are excluded from the analysis and analysed separately. Next, the regional allocation of  
6 investments in other relevant sectors is considered, namely the territorial allocation of  
7 investments within explicit regional policy, investments in universities and the R&D sector,  
8 and finally investment assigned to the environmental sector.  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19

### 20 **6.1. Regional analysis of total capital expenditure**

21  
22 The regional analysis of total capital expenditure financed from the central level (i.e. from the  
23 state budget and from both state extra-budgetary funds) in the period 1995–2005, includes  
24 nearly CZK 617 billion after the data has been ‘cleaned’ by the above described procedure.  
25  
26 The nature of the capital expenditure determined that such invested funds were used primarily  
27 for development activities, and allocation of such investments has an undoubted dynamic  
28 effect on the relevant regions (e.g. SHORT, 1981; AUTERI and COSTANTINI, 2004).  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38

39 The overall spatial pattern of the regional distribution of the analysed funds can be considered  
40 as significantly unbalanced. In the period studied, over one quarter of the analysed  
41 investments (which in absolute terms represents approximately CZK 168 billion) were  
42 allocated from the national level into the capital city of Prague, socio-economically the most  
43 advanced region of the Czech Republic (for regional GDP per capita see Figure 2). The  
44 dominance of Prague is also proved by relative indicators, i.e. investments per inhabitant  
45 (approximately CZK 142 thousand per inhabitant, which is 237% of the average for the Czech  
46 Republic - see Table 5). With respect to economic performance indicators, i.e. after putting  
47 capital expenditure in relation to the regional GDP level, it was 116% of the average  
48 allocation of the Czech Republic and in relation to the economic aggregate it was 123% of the  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 national average. The term economic aggregate was defined by HAMPL (2005) as the product  
4  
5 of the number of jobs (the number of jobs is determined as the number of economically active  
6  
7 persons after deducting the unemployed and adding the commuting balance calculated on the  
8  
9 basis of the 2001 Census) and the average wage in the region in question. The Plzeňský and  
10  
11 Olomoucký regions achieved an even higher investment allocation than Prague with respect  
12  
13 to GDP (136%, resp. 137% - see Table 5), and the same order applies when the allocated  
14  
15 investment volume is related to the economic aggregate.  
16  
17  
18  
19  
20  
21

22 ***Table 5: Capital expenditure per capita and per regional GDP (1995–2005, in %)***  
23

24 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001,  
25 authors` calculations.  
26  
27

28 (about here)  
29  
30  
31  
32

33 ***6.2. Regional analysis of total capital expenditure after exclusion of transport investment***  
34

35 Since the extraordinary volume of investment devoted to transport infrastructure (CZK 222  
36  
37 billion from the state budget and from the State Fund for Transport Infrastructure – see Table  
38  
39 4) which undoubtedly influences the overall picture of the regional allocation of investment,  
40  
41 such expenditure was excluded from the analysis in the following stage. The remaining  
42  
43 investment projects thus represent approximately CZK 395 billion for the period of 1995–  
44  
45 2005 again.  
46  
47  
48  
49  
50  
51

52 After the exclusion of projects in the transport infrastructure sector, the position of Prague is  
53  
54 even higher (see Table 5). In absolute terms, its share of public capital expenditure in the  
55  
56 Czech Republic actually increased to 37.5%, while in per capita terms the investment  
57  
58 allocation to Prague was 326% of the average value for the Czech Republic. No other NUTS  
59  
60 3 region received an above-average allocation per inhabitant. Even when the allocated

1  
2  
3 investment projects are related to the regional GDP, the Prague region is still above the  
4 national average (see Table 5). Investments in Prague were directed particularly to the state  
5 administration (approximately CZK 55 billion), state defence (CZK 24 billion), health service  
6 (CZK 18.1 billion), infrastructure development (CZK 18.9 billion) as well as public city  
7 transport (4.8 billion CZK), R&D (CZK 6.9 billion) and education (CZK 8.7 billion).  
8  
9

10  
11  
12  
13  
14  
15  
16  
17 As all data except for that on transport infrastructure projects was territorially identified up to  
18 NUTS 4 level, a detailed analysis of the regional distribution of capital expenditure, after  
19 exclusion of transport expenditure, could be carried out on the NUTS 4 level regions. At this  
20 hierarchical level, Prague dominates absolutely. The district of Kutná Hora achieved the  
21 second highest allocation per inhabitant and the highest allocation per economic aggregate,  
22 but this was thanks to extraordinary investments in the military air force base in Čáslav. The  
23 district of Brno–město (after Prague the second most important economic centre of the Czech  
24 Republic) is in third position with 162% of the average allocation per inhabitant. Brno also  
25 achieved the second highest share of 6%. The districts of Ostrava–město (2.2%), Olomouc  
26 (2.6%) and Plzeň–město (2.2%) also received significant shares. Other districts received only  
27 minor allocations.  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45

46 Where capital expenditure was considered per inhabitant, above-average investments  
47 compared to the average for the Czech Republic were allocated to only 11 out of 77 districts,  
48 and 22 districts did not even achieve 50%. The regions receiving significantly below-average  
49 investment funds per inhabitant include the majority of districts in North-Western Bohemia  
50 and Northern Moravia (which, however, are mostly among the regions supported within  
51 Czech regional policy – see Figure 2), the internal periphery, as well as a large area of  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 Southern, Western, Northern and Eastern Bohemia and the Czech-Slovak borderland (see  
4  
5 Figure 3).  
6  
7  
8  
9

10 ***Figure 2: Assisted regions supported within Czech explicit regional policy***

11  
12 Source: Ministry for Regional Development.

13  
14 (about here)  
15  
16  
17  
18

19 ***Figure 3: Capital expenditure per capita after exclusion of transport infrastructure in***

20  
21 ***NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).***

22  
23 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors` calculations.

24  
25  
26 (about here)  
27

28 Due to the unavailability of GDP data for NUTS 4 regions and the limited reliability of this  
29 indicator on the NUTS 3 regions, GDP was replaced by an economic aggregate. At regional  
30 level, this indicator achieves a very high correlation with regional GDP (0.998). After putting  
31 the allocated investment funds in relation to the economic aggregate (see Figure 4), Prague  
32 achieved 169% of the average for the Czech Republic (the highest allocations went to the  
33 districts of Kutná Hora - 257% and Prostějov - 170%, in both cases thanks to extraordinary  
34 investments in the defence sector). Highly uneven distribution of this expenditure illustrates  
35 well the fact that above-average values were achieved by only 13 districts, among which was  
36 also the second largest city (district Brno-město - 119 %).  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51

52 ***Figure 4: Capital expenditure per economic aggregate after exclusion of transport***

53  
54 ***infrastructure investments in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).***

55  
56 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005), authors` calculations.

57  
58 (about here)  
59  
60

### 6.3. *Capital expenditure in the transport sector*

The extraordinary importance of investment devoted to the transport infrastructure is given by their very high volume (CZK 222 billion), which represents approximately 36% of the volume of the investment observed in this study. In addition, it is obvious that the regional formula of transport constructions, often linear in nature, may significantly differ from the spatial formula of other investment projects. For this reason, the transport sector was chosen for a separate regional analysis (i.e. investment in construction of motorways, expressways, railway corridors, and the underground in Prague). Despite a number of methodological constraints, it was possible to unite the two most important sources of funds for this sector: the state budget (i.e. ISPROFIN) and the State Fund for Transport Infrastructure. The total analysed investment volume of 1995–2005 exceeds CZK 222.3 billion (ISPROFIN – CZK 96.7 billion, the State Fund for Transport Infrastructure – CZK 125.5 billion), and the data are available only for NUTS 3 regions.

Figure 5 illustrates the considerably above-average allocation of investment in transport in Western Bohemia, which corresponds to the hypothesis of allocation of investment along a traditional west-east gradient in the level of socio-economic development. In transport investment, this gradient is raised by the effort to ensure transport connections for the Czech Republic or its capital of Prague with nearby economic centres in Germany (Munich, Frankfurt, Berlin). Although the area of Northern Moravia is a structurally affected region, as is North-Western Bohemia, transport investment has flowed more to Northern Bohemia in recent years, because the transport connection with Poland was of less priority than connections to Germany or Western Europe.



1  
2  
3 **Figure 5: Transport infrastructure investment per capita in NUTS 3 regions, 1995–2005,**  
4  
5 **Czech Rep. = 100 % (in %)**  
6

7  
8 Source: ISPROFIN, SFTI, Statistical Yearbook of the Czech Republic 2001, authors` calculations.  
9

10 (about here)  
11

12  
13  
14  
15 The spatial formula for the allocation of per capita investment in transport is very similar to  
16 the case where transport investment is related to GDP (the correlation coefficient is 0.954). In  
17 both indicators the position of Prague is well below national average (78%, resp. 38% of the  
18 Czech Republic average). On the contrary, Plzeňský, Olomoucký, Ústecký and Karlovarský  
19 regions achieved significantly above-average allocations. However, in evaluating the regional  
20 distribution of transport infrastructure investments (and of general investments as well) it is  
21 necessary to consider the time aspect in the sense that if a significantly higher amount of  
22 funds is granted to a region in a certain time range, it may mean that the necessary  
23 infrastructure had not previously been constructed in the region in question and it is being  
24 built behind schedule or out of needs arising from the different geopolitical orientation of the  
25 Czech Republic after the fall of the Iron Curtain. For example, as early as the communist era,  
26 the D1 motorway was completed between Prague and Brno, leading across the Vysočina  
27 region, so this region records a significantly below-average allocation, while in the districts of  
28 Tachov and Plzeň-jih districts, the D5 connecting Prague and Bavaria was built during the  
29 period considered here.  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50

51  
52 The regional distribution of capital expenditure after the exclusion of transport infrastructure  
53 investments when related to the economic level of the region (GDP) shows that transport  
54 investments are what “aid” economically weaker regions to reach above-average values. If  
55 transport investments are not considered, Prague is quite clearly the region that gains most  
56  
57  
58  
59  
60

1  
2  
3 from redistribution of public investment both in per capita terms and in relation to GDP  
4  
5 (116 %, or 159 % of the Czech Republic average - see Table 5).  
6  
7  
8  
9

#### 10 **6.4. Capital expenditure allocated within explicit regional policy**

11  
12 Since one of the aims of this article is to show a significant discrepancy between the regional  
13 formula for the allocation of public investment funds within non-regional policies and  
14 regional policy, this is presented by Figure 6 which shows investments granted to explicit  
15 regional policy from the state budget. Strikingly, the funds allocated within regional policy  
16 are spread widely across the whole territory of the Czech Republic. This is in sharp contrast  
17 with the very conception of regional policy as a policy which supports only selected regions.  
18 This finding cannot be justified by changes of assisted areas over the investigated period as  
19 there was considerable stability of both the regional pattern of lagging and leading regions  
20 and consequently also of assisted areas delineated for the sake of regional policy (BLAŽEK,  
21 2005b). On the other hand, the pattern of investment within regional policy does confirm that  
22 a certain priority was given to the assisted areas. Namely, the Moravian districts, especially  
23 the southern and, to some extent, northern ones ranked among the largest recipients of such  
24 investments (together with North-Western Bohemia they rank among the regions supported  
25 within Czech explicit regional policy, as does Northern Bohemia to some degree).  
26 Nevertheless, it is necessary to mention a paradox as a statistically highly significant positive  
27 relation of regional policy investment to regional GDP and to the economic aggregate was  
28 demonstrated for NUTS 3 regions (in both cases excluding Prague - see Table 6a). The same  
29 applies also to the level of NUTS 4 regions (see Table 6b) where a statistically significant  
30 positive relation was found between the regional policy capital expenditure and the level of  
31 economic development measured by the economic aggregate as a proxy for regional GDP. At  
32 the same time, a larger part of Moravia ranks, with other regions supported within explicit  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 regional policy, as an area significantly underfinanced with respect to the total investment  
4 from the state budget after the exclusion of transport. In simple terms, districts supported  
5 within the explicit regional policy in the Czech Republic received only a very limited volume  
6 of investment from the national level (after the exclusion of transport constructions) (compare  
7 Figures 2, 3 and 4). On the other hand, support within Czech regional policy was significantly  
8 concentrated into these regions (see Figure 6). However, a huge difference in the financial  
9 sums invested has to be stressed again: CZK 7.2 billion for regional policy versus the total  
10 volume of the analysed funds amounting to CZK 617 billion. Nevertheless, although the  
11 volume of investments for regional policy at the national level is nearly negligible, its  
12 importance is significantly higher for the supported regions.  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

29 ***Figure 6: Capital expenditure per capita from the state budget devoted to explicit regional***  
30 ***policy in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).***  
31  
32

33 Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors` calculations.

34 (about here)  
35  
36  
37  
38  
39  
40

41 ***Table 6a: Correlation of selected indicators for NUTS 3 regions (n=13 – Prague excluded)***  
42

43 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001,  
44 HAMPL (2005), authors` calculations.  
45  
46

47 ***Table 6b: Correlation of selected indicators for NUTS 4 regions (n=76 – Prague excluded)***  
48

49 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001,  
50 HAMPL (2005), authors` calculations.  
51  
52

53 (about here)  
54  
55  
56

### 57 ***6.5. Capital expenditure for higher education, R&D and the environmental sector***

58 Within the regional analysis of capital expenditure from the state budget of the Czech  
59 Republic, sectoral analyses were also carried out. As an example, Figure 7 shows investment  
60

1  
2  
3 from the state budget in the infrastructure of universities and colleges and other R&D  
4  
5 institutions amounting to approximately CZK 25 billion. The expected regional distribution of  
6  
7 such expenditure into economically more developed regions (Prague, Brno) and to regions  
8  
9 where a public college is located, or to regions with headquarters of important research  
10  
11 institutes (the Prague hinterland) was demonstrated (similar regional pattern of public R&D  
12  
13 expenditure was shown by WISHLADE *et al.* 1996 or THE ESPON MONITORING COMMITTEE  
14  
15 2005). Nevertheless, it is necessary to point out that it is not only capital expenditure from the  
16  
17 central level that is devoted to this sector. For example, it was not possible to obtain data on  
18  
19 the regional allocation of financial support for R&D projects allocated by the Grant Agency  
20  
21 of the Czech Republic. In addition, it is necessary to take into account a frequent  
22  
23 methodological problem, when some analysed data are allocated according to the  
24  
25 headquarters of the institution in question, although such funds may then be invested in  
26  
27 branches of the institution in a different region. It is thus probable that in fact investment in  
28  
29 higher education and R&D is less concentrated than the data analysed shows.  
30  
31  
32  
33  
34  
35  
36  
37  
38

39 ***Figure 7: Capital expenditure per capita of the state budget devoted to universities and for***  
40 ***R&D institutions in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %)***

41  
42  
43 Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

44  
45 (about here)  
46  
47  
48  
49

50  
51 Figure 8 shows investment in the environment sector amounting to CZK 25.6 billion  
52  
53 allocated both from the state budget and the State Environmental Fund. Although no clear  
54  
55 relation between the distribution of funds and environmental quality has been shown, we may  
56  
57 confirm to some extent that investment was allocated to regions in which it is necessary to  
58  
59 solve a specific problem with respect to the environment (e.g. support of mining reduction,  
60  
revitalising the river system, pond reconstructions).

1  
2  
3  
4  
5  
6 A surprisingly high allocation of investment to border districts in South-Western Bohemia  
7  
8 relates to investment in the territorially largest national park in the Czech Republic (The  
9  
10 Šumava National Park). Figure 8 provides, however, a surprising finding, that investment  
11  
12 projects in the environment sector are not greatly concentrated in the structurally handicapped  
13  
14 regions in Northern Bohemia and in Northern Moravia where the environment is seriously  
15  
16 damaged. There is one exception with high investment - the Česká Lípa district - where the  
17  
18 running down of the uranium industry and subsequent cultivation of the area are jointly in  
19  
20 progress.  
21  
22  
23  
24  
25  
26

27 ***Figure 8: Environmentally related capital expenditure per capita of the state budget in***  
28  
29 ***1995–2005 and of the State Environmental Fund in 1999–2005 in NUTS 4 regions, Czech***  
30  
31 ***Rep. =100 % (in %)***  
32

33 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

34  
35  
36 (about here)  
37  
38

### 39 ***6.6. Relation of capital expenditures to selected socio-economic variables***

40  
41  
42  
43 On the basis of correlation coefficients for selected indicators for NUTS 3 regions (Table 6a)  
44  
45 we can demonstrate a statistically significant relation between all regional allocations of  
46  
47 investment via all analysed categories of investment (i.e. total investment, total investment  
48  
49 after exclusion of transport investment, transport investment, investment into R&D and  
50  
51 universities and regional policy investment, and their economic performance expressed by the  
52  
53 GDP and the economic aggregate. The same finding counts for correlation coefficients for  
54  
55 NUTS 4 regions (Table 6b), however, due to data limitations only the correlation between 3  
56  
57 investment categories and the economic aggregate could be calculated. It is important to stress  
58  
59 again that with respect to the declared objectives of Czech regional policy, the correlation  
60

1  
2  
3 between the share of investment allocated within explicit regional policy and economic  
4 performance should be negative. However, on both NUTS 3 and NUTS 4 level regions  
5  
6 positive and even statistically significant values were obtained indicating that even allocation  
7  
8 of investment within regional policy is not in line with its own strategic objective.  
9  
10  
11

12  
13 The identification and detailed assessment of factors behind these observed patterns goes  
14 beyond the focus of this paper, however at least a brief discussion should be included. In  
15 countries like the Czech Republic which are lacking instruments for the systematic evaluation  
16 of the effectiveness and efficiency of planned public investment, a relatively important role  
17 can be assumed for subjective factors. The decision making process on public investment  
18 committed from the central level basically proceeds at two levels. Firstly, on the basis of a  
19 proposal of the Ministry of Finance, the Government and Parliament decide about financial  
20 allocations to particular sectors that come under the responsibility of particular ministries.  
21 Secondly, there is a process of selection of priorities by a particular ministry. In this case,  
22 three main factors influencing the decision making process on public investments might be  
23 identified: i) the adopted strategy for a specific sector (inevitably even these strategic  
24 documents can to some extent reflect subjective factors), ii) the interests of (esp. high-  
25 ranking) public servants and iii) the interests of politicians. On the basis of our experience of  
26 more than 10 years of contractual cooperation by one of the authors with one central  
27 administration body we can draw two preliminary conclusions. First, the relevance of these  
28 three types of factors differs widely among different sectoral policies. Second, in some cases  
29 each of the three above mentioned factors can be decisive. This, therefore, makes a clear case  
30 for the introduction of some instruments (including TIA) that would be able to “objectivise”  
31 the need for public investment.  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## 7. Conclusions and policy implications

The article aims to contribute to the debate on the regional dimension of sectoral (non-regional) governmental policies and to empirically demonstrate the huge discrepancy between both the volume and regional pattern of public capital expenditure committed within the national sectoral policies on the one hand and the official regional policy on the other. The performed analyses focused “only” on the public capital expenditures allocated by the Government of the Czech Republic, but it can be claimed that public capital investments have the most important implications for the development of particular regions (SHORT, 1981; YAMANO and OHKAWARA, 2000). Obviously, the financial volume of the total public capital expenditure is incomparably higher than the financial volume allocated to explicit regional policy.

The regional analyses performed were based on the dataset of public capital expenditure in the Czech Republic covering the years 1995–2005 and demonstrated uneven regional distribution of these investments in favour of the most economically developed region of the Czech Republic – the capital city of Prague. Such a regional pattern for the distribution of public investment supports the hypothesis that there exists a contradiction between the regional impact of sectoral policies on the one hand, and the goals of explicit regional policy on the other. The discrepancy between these two is particularly striking as assisted regions delineated for the sake of national regional policy were to a large extent left aside by decisions regarding the allocation of public capital expenditure (with the exception of expenditure on transport infrastructure). Moreover, a surprising pattern was identified even in the case of investment committed within explicit regional policy (Fig. 6) which is not coinciding well with the map of assisted areas (Fig. 2). Clearly, the allocation of regional policy investments is not respecting fully the objectives of regional policy itself.



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Consequently, there is a clear conflict between the goals of explicit regional policy aiming at the support of less well-off regions and mostly unintended regional impacts of much more vigorous non-regional governmental policies generally supporting the most developed regions. These findings are in line with research performed by e.g. WILSON and WISE (1986) but in contrast with results of YAMANO and OHKAWARA (2000).

However, it is necessary to stress that from the point of view of the entire expenditure side of the governmental policies comprising both capital and current expenditure, the region of Prague is very likely the most important net payer into the system of public finance due to its buoyant tax base and to its relatively low share of persons receiving social benefits (see OUŘEDNÍČEK and NOVÁK, 2006). Nevertheless, it is clear that the uneven distribution of public capital expenditure, generally favouring more developed regions, is one of the most important mechanisms of regional differentiation and is, moreover, cumulative in nature.

The expectation of a replication of the traditional East-West gradient in the level of socio-economic development by the regional structure of total capital expenditure has not been experienced. However, the evidence supporting this expectation can be observed in the case of the capital expenditure allocated to transport infrastructure. The greater support of transport infrastructure projects in the Western part of the Czech Republic is a reflection of the priority assigned to connecting the Czech Republic to Western European structures.

Key implications deriving from the conducted regional analysis relate in particular to the necessity of developing a sound methodology for the territorial impact assessment of public policies and programmes. In other words, it is essential to develop a procedure evaluating not only the regional impact of incentives carried out within explicit regional policy (which is



1  
2  
3 already becoming common practice in the most developed countries) but also the impact of  
4  
5 public interventions which do not explicitly incorporate a regional dimension but where  
6  
7 implementation might have a significant regional impact. Such an evaluative instrument is  
8  
9 essential for tackling of regional development issues and problems more effectively by  
10  
11 achieving synergies and eliminating contradictions between different policies (SCHÄFFER,  
12  
13 2005; CEC, 2006a, 2006b). Nevertheless, this approach is a real challenge due to the fact that  
14  
15 public policies in most advanced countries are traditionally being implemented via sectorally  
16  
17 structured public administration at central governmental level while the relevance of sectoral  
18  
19 policies for development of particular regions has been clearly underestimated (ROBERT *et al.*,  
20  
21 2001; MACEŠKOVÁ, 2007).  
22  
23  
24  
25  
26  
27  
28

29 Despite the effort that has been put into developing TIA methodology, no comprehensive and  
30  
31 satisfactory tool for regional impact assessment has yet been developed. Therefore, as also  
32  
33 documented by our empirical results, which showed both an uneven spatial pattern of the  
34  
35 allocation of public capital expenditure and a huge mismatch between the regional pattern of  
36  
37 this expenditure and the assisted regions, the development of a suitable instrument for  
38  
39 territorial/regional impact assessment and its application at least to the most relevant sectoral  
40  
41 policies remains a critical challenge for both researchers and decision-makers.  
42  
43  
44  
45  
46  
47

---

48 <sup>i</sup> Such fine-tuning can take many different forms, for example differentiation of the form and  
49  
50 the rate of public support or the involvement of regional self-government or other regional  
51  
52 bodies in decision-making procedures, although in practice such an approach is rather rarely  
53  
54 applied.  
55  
56

57  
58 <sup>ii</sup> Except for the programmes set by a special act such as state support to the national cultural  
59  
60 heritage or agriculture.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

---

For Peer Review Only

## Regional analysis of public capital expenditure: to which regions is public capital expenditure channelled – to “rich” or to “poor” ones?

### Abstract

The paper aims to contribute to the debate on the regional dimension of sectoral (i.e. non-regional) policies and to empirically demonstrate the huge discrepancy between both the volume and the regional pattern of sectoral public capital expenditure, policies on the one hand, and official regional policy on the other. The analyses were based on a unique database of public investment in the Czech Republic covering the years 1995–2005. Their results show significant conflicts in policy objectives and thus represent a clear argument in favour of pursuing territorial impact assessment (TIA) of sectoral policies.

Deleted: committed within sectoral

Deleted: policies

Deleted: 11

Deleted: period (

Deleted: )

Deleted: and t

Deleted: proved

**Key words:** regional impact of non-regional policies, sectoral policies, territorial impact assessment, regional policy, public investments, Czech Republic

**JEL classifications:** H5, E61, R 11, R 58

### Acknowledgements

This paper received financial support from Research Programme No. MSM 0021620831 sponsored by the Czech Ministry of Education, Youth and Sport. The authors would like to thank to two anonymous referees for their helpful comments.

Deleted: was elaborated with

Deleted: o

Deleted: ¶

### 1. Introduction

The aim of the paper is to contribute to the debate on the regional dimension and the regional impact of sectral public capital expenditure, policies. This debate started decades ago (e.g. SHORT, 1978; BENNETT, 1980; MARTHUR and STEIN, 1980; MOLLE and CAPPELLIN,

Deleted: committed within sectoral

1  
2 1988) but recently received a significant impetus in the form of a discussion on the regional  
3  
4 impact of sectoral policies and the possibilities of their “regionalization” (e.g. DG RESEARCH,  
5  
6 1991; MARTIN, 1999; ROBERT *et al.*, 2001; MOLLE, 2007). The “regionalization” of sectoral  
7  
8 policies can be understood as the fine-tuning of sectoral public expenditure according to the  
9  
10 needs and circumstances of specific regions.<sup>1</sup> One of the important results of this discussion  
11  
12 was the gradual development of the methodology of the territorial impact assessment of large  
13  
14 projects and later, also of programmes and policies – SCHINDEGGER and TATZBERGER, 2003;  
15  
16 CAMAGNI, 2006). The increasing attention being paid to the regional dimension of public  
17  
18 expenditure policies stemmed originally from the effort to learn how to improve or - more  
19  
20 precisely - how to ensure the coordination of the territorial impact of the EU policy of  
21  
22 economic and social cohesion (ESC) and of other European policies (e.g. CEC, 1996; SHOUT  
23  
24 and JORDAN, 2007). Moreover, at the same time, there was a significant research endeavour to  
25  
26 discover to what extent the regional impact of ESC policy has been in compliance with the  
27  
28 spatial effects of numerous national public policies of the EU Member States (CEC, 2004).

29  
30 Nevertheless, the number of existing analyses of the regional impact of sectoral  
31  
32 policies is still relatively limited (for exceptions see e.g. HEALD, 1994; AUTERI and  
33  
34 COSTANTINI, 2004; KATAOKA, 2005; MACEŠKOVÁ, 2007), mostly due to the severe data  
35  
36 limitations in most countries. Therefore, the main aim of this article is an attempt to perform  
37  
38 an analysis of the regional dimension of public capital expenditure in one of the new Member  
39  
40 States (the Czech Republic) at the level of the NUTS 3 and 4 regions. This analysis is based  
41  
42 on a unique data set of capital public expenditure covering investment projects supported  
43  
44 during 1995–2005.

45  
46 The analyses undertaken here are aimed at answering several research questions.  
47  
48 Firstly, the relation between the level of the socio-economic development of the regions and  
49  
50 the amount of invested public capital expenditure will be investigated. It is assumed that  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Deleted: policies

Deleted: in

Deleted: reason for the

Deleted: and

Deleted: on the data available

Deleted: within the 11 year period

1 public investments are highly concentrated in the most socio-economically developed regions.  
 2  
 3  
 4 Such a regional allocation of this type of public funds would be in accordance with the  
 5  
 6 principles of a strategic regional policy (for more on strategic regional policy see e.g.  
 7  
 8 GORZELAK, 1992). In other words, given the many deficiencies in the sphere of the technical  
 9  
 10 and other infrastructures inherited from the communist period, it is supposed that public  
 11  
 12 investment was primarily focused on the enhancement of the infrastructure in major cities and  
 13  
 14 namely in Prague to strengthen the gateway effect (DRBOHLAV and SÝKORA, 1997) and to  
 15  
 16 enhance the competitiveness of the national metropolis on the international scene.

Deleted: o

Deleted: , which is contrary to current public expenditure.

17  
 18 Moreover, another reason for the anticipated concentration of public investment in  
 19  
 20 core regions is the assumed the higher efficiency of investment in these regions (e.g.  
 21  
 22 CAMINAL, 2004; DE LA FLUENTE, 2004). Therefore, a positive correlation between the level of  
 23  
 24 socio-economic development and the amount of public capital invested (relative per capita) is  
 25  
 26 expected. However, it should be stressed that such a regional pattern of public investment  
 27  
 28 contradicts the objectives of the Czech national strategy for regional development and of  
 29  
 30 regional policy aiming at decreasing regional disparities and being in compliance with the  
 31  
 32 "insurance" type of regional policy (MRD, 2006; GORZELAK, 1992). As a result, it can be  
 33  
 34 argued that there is an immense policy conflict between goals of explicit regional policy and  
 35  
 36 mostly unintended spatial impacts of much more vigorous non-regional governmental  
 37  
 38 policies. Therefore, our analyses might also serve as empirical support for the importance of  
 39  
 40 pursuing territorial impact assessment (TIA), both for major public capital projects and for  
 41  
 42 sectoral policies as a whole.

Deleted: to

Deleted: areas

Deleted: rgument of

Deleted: the

Deleted: nature of

Deleted: would be in contradiction to

43  
 44 Secondly, a replication of the traditional East-West gradient of socio-economic  
 45  
 46 development by the regional structure of capital expenditure is also expected (for more on the  
 47  
 48 East-West gradient, see BLAŽEK and CSANK, 2007).

Deleted: ,

Deleted: an

Deleted: ly

Deleted: proved argument

Deleted: essential

Deleted: the

Deleted: on the level of

Deleted: on the level of

Deleted:

Deleted: on the level of

Deleted: foreseen

Obviously, given the fact that public capital expenditure is highly “visible”, the allocation is inevitably subject to challenge in the political arena, and a significant role of subjective and “soft” factors in the regional allocation of this expenditure is envisaged.

Despite the fact that the available data does not allow for a thorough explanation of the obtained result, the potentially most important explanatory factors are identified.

Deleted: data

Deleted: yielded

Deleted: s

Deleted: presented.

Finally, it is believed that a detailed scrutiny of the regional structure of public expenditure significantly helps our understanding of regional development.

The paper is structured as follows. Firstly, the theoretical debate and the most important findings of previous studies are summarized. Next, the data and the methodology are described. Thirdly, the main findings of the empirical analyses of public capital expenditure on the NUTS 3 and NUTS 4 levels are provided and discussed. Finally, conclusions and policy implications are drawn.

Deleted: applied

## 2. Regional impact of fiscal policy and its sectoral policies

The subject of public finance and fiscal policy is an important and traditional sphere of research for economists (e.g. MUSGRAVE and MUSGRAVE, 1973; ATKINSON and STIGLITZ, 1980), nevertheless, geographers have also been interested in this sphere for several decades (for example BENNET, 1980; HEALD, 1994; BLAŽEK, 1995). While economists often build models of public sector spending and frequently deal with the issue of the efficiency of public sector spending, geographers tend to derive the implications of public finance for regional development (for example BLAŽEK, 1995; PORTEOUS, 1995).

Deleted: various

Obviously, fiscal policy as a whole has a huge regional impact, depending on the design of both the revenue and expenditure sides of the state budget. However, the regional patterns of both revenue and expenditure are unknown in most countries. Generally, it can be expected that a system of progressive taxation reduces revenues in more affluent regions

1  
2 while social benefits tend to flow into the less well off regions, representing an important  
3  
4 mechanism for interregional redistribution (PRUDHOMME, 1993; WISHLADE *et al.*, 1996). The  
5  
6 regional redistribution of financial resources via fiscal policy is one of the important factors  
7  
8 contributing to the economic growth of the respective regions (LEFEBER, 1964; GUIÁN and  
9  
10 CANCELO, 1996) and helps the social stabilization and internal cohesion of the country in  
11  
12 question (DE LA FLUENTE, 2004). Nevertheless, in the case of the regional allocation of capital  
13  
14 expenditure, there is even less certainty about the actual regional pattern of this expenditure  
15  
16 than in the case of current expenditure.

17  
18 Authors focusing on analyses of the impact of fiscal policy on the growth of particular  
19  
20 regions arrive at the conclusion that public investments are having measurable positive effects  
21  
22 on the respective regions (e.g. MARTUR and STEIN, 1980; FÖLSTER and HENREKSON, 2001;  
23  
24 AUTERI and COSTANTINI, 2004). Other studies are devoted to the investigation of efficiency  
25  
26 issues (for example GUIÁN and CANCELO, 1996; DE LA FLUENTE, 2004). Other authors point  
27  
28 to the problem of the insufficient coordination of different public policies and activities, as  
29  
30 their goals and effects can be overlapping or even contradictory (e.g. WISHLADE *et al.*, 1996;  
31  
32 MARTIN, 2005; SHOUT and JORDAN, 2007). In addition, some other studies have dealt with  
33  
34 issues of social justice or equity within the sphere of public finance (e.g. BOYN and POWELL,  
35  
36 1995).

37  
38 One country where the allocation of public money attracts considerable attention from  
39  
40 both politicians and analysts is the UK. However, the main rationale for these studies is  
41  
42 mainly the issue of the distribution of public expenditure between England, Wales, Scotland  
43  
44 and Northern Ireland in the context of devolution (e.g. SHORT, 1978; HEALD, 1994; HEALD  
45  
46 and SHORT, 2002; MIDWINTER, 2004). In Japan, KATAOKA (2005) assessed the regional  
47  
48 distribution of public investments between 47 prefectures in the post-war period. Kataoka  
49  
50 noticed that periods of high national economic growth are positively correlated with the  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Deleted: The a

Deleted: ed

Deleted: d

Deleted: experts

1  
2 concentration of public investment into economically strong regions while in periods of low  
3 growth, a more balanced distribution of public capital expenditure has been observed.

Deleted: was

4  
5  
6 WILSON and WISE (1986) studied the regional implications of public investment in a  
7  
8 developing country – Peru – over the period 1968–1983. They showed a high concentration of  
9  
10 public investment into the rich coastal regions during three subsequent time periods, while a  
11  
12 shift in favour of the poorer inland regions was observed in the second half of the period  
13  
14 studied. However, according to these authors, this shift is mainly attributable to the huge  
15  
16 investments in the mining industries in the inland regions.

### 17 18 19 20 3. Sectoral policies and regional policy

21  
22 There have already been voices among experts suggesting that the regional impact of  
23  
24 vigorously pursued sectoral policies is much more profound than the regional impact of  
25  
26 regional policy itself (e.g. ROBERT *et al.*, 2001; MARTIN, 2005). Therefore, within this  
27  
28 context, some authors distinguish regional policy in a “narrow” and “broad” sense, while  
29  
30 other authors prefer the terms “explicit” and “implicit” regional policy (e.g. ARMSTRONG and  
31  
32 TAYLOR, 1985; CUADRADO, DE LA DEHESA and PRECEDO, 1993). While it can be agreed that  
33  
34 regional policy in a “narrow” sense is synonym with explicit regional policy, the difference  
35  
36 between implicit regional policy and a regional policy in a “broad” sense should be stressed.

Deleted: with

Deleted: being

Deleted: for

37  
38 Implicit regional policy encompasses public policies which have been to a certain extent  
39  
40 “regionalized” (i.e. there has been some sort of adjustments of an overall design of sectoral or  
41  
42 non-regional policy in question to meet specific regional conditions and needs). Regional  
43  
44 policy in a “broad” sense, on the other hand, comprises of all public policies or actions

Deleted:

45  
46 executed by the public sector which have important regional impacts and this importance is to  
47  
48 some extent recognized (e.g. agricultural policy, transport policy, energy policy, competition  
49  
50 policy, science and technology policy). Despite the fact that these policies often lack an

Deleted: committed within

Deleted: do

Deleted: at least

Deleted: a certain



1  
2 explicit definition of regional goals, they are clearly having a specific impact on different  
3 regions (e.g. CUADRADO, DE LA DEHESA and PRECEDO, 1993; EUROPEAN COMMISSION, 1998,  
4 2004; HILL and LOWE, 2007). Examples of public policies that reflect at least some specific  
5 regional characteristics or which react to specific regional conditions are the policy aimed at  
6 attracting large investors to the Czech Republic (UHLÍŘ, 2004) or the R&D policy in Germany  
7 (see KOSCHATZKY, 2001). Considerable attention has been paid to the regional impact of  
8 sectoral policies and analogous policies at EU level in studies undertaken within the ESPON  
9 programme (e.g. THE ESPON MONITORING COMMITTEE 2005).

Deleted: the

Deleted: the

Deleted: performed

17  
18 BLAŽEK (2005a) argues that one key component of fiscal policy that has an enormous  
19 regional impact is the way the decentralized public administration bodies (municipalities and  
20 regions) are financed. For example, in 2007, within the state budget of the Czech Republic  
21 only CZK 1.5 bln was allocated to explicit regional policy (which represents only 0,06 % of  
22 Czech GDP), while in the same year the state distributed more than CZK 160 bln to  
23 municipalities and regions via a strictly egalitarian tax-sharing formula (this volume amounts  
24 7,7% of Czech GDP). It is clear that the principles upon which the applied model of financing  
25 local and regional government in particular countries rests are of tremendous importance and  
26 consequently, due to the vast amount of money concerned, the system of local government  
27 financing has a much more profound regional impact than official "explicit" regional policy.

Deleted: approx.

Deleted: the

Deleted: of the Czech Republic

30  
31 Moreover, important regional impacts can be attributable even to non-spending  
32 policies, for example to an anti-monopoly policy. WISHLADE *et al.*, (1996) consider the spatial  
33 impact of non-spending policies as "blind spots" of regional analyses.

Deleted: an

Formatted: Indent: First line: 0 pt

#### 46 4. The budgetary scheme of the Czech Republic

The budgetary scheme of the Czech Republic consists of two prime components – public budgets and extra-budgetary funds created for specific investment purposes such as transport infrastructure, and expenditure on environmental projects, (see Figure 1).

Deleted: environment etc

**Figure 1: Simplified budgetary scheme of the Czech Republic**

Source: modified on the basis of PEKOVÁ (2002), p. 79

(about here).

Nevertheless, due to the focus of this paper on the identification of spatial patterns in the allocation of public capital expenditure, the analysis was limited to a regional analysis (at the level of the NUTS 3 and NUTS 4 regions) of capital investment allocated from central sources, i.e. from the state budget and from state extra-budgetary funds. The Czech state budget operates with the dominant part of public finance assigned to public budgets, but, as Table 1 illustrates, the share of state budget allocated to capital expenditure is rather small.

Deleted: ,

This fact can be partly explained by the key role of state extra-budgetary funds in the case of such expenditure (see Table 2), as they are designed to function as a vehicle allowing the implementation of multi-annual projects, while the state budget in principle provides the financial framework for one year only. In addition, a noteworthy volume of public capital expenditure flows through decentralized public budgets, and especially via municipal budgets (on average in 2000–2005 the capital expenditure of decentralized public budgets accounted for CZK 74.2 bln per year, which represents 28.5 % of the total decentralized public budgets on average per year). Nonetheless, in line with our research focus the analysis presented below concentrates only on the capital expenditure allocated from the central level.

Deleted: a

**Table 1: Expenditure of the Czech state budget in 1995–2005 (current prices, in billion CZK, in %)**

Source: Statistical Yearbook of the Czech Republic 1997, 1999, 2001, 2002, 2004, 2006.

Note: In December 2007, the exchange rate was approx. 1 EUR = 27 CZK.

(about here)

**Table 2: Expenditure from selected state extra-budgetary funds in 2000–2005 (current prices, in billion CZK)**

Source: Statistical Yearbook of the Czech Republic 2000–2006.

(about here)

## 5. Data and Methodology

The prime source for this regional analysis of the capital expenditure of the state budget of the Czech Republic is the ISPROFIN (Information System of Programming Funding from the State Budget) database, which comprises data regarding investment spending from the state budget, in our case for the years 1995–2005. ISPROFIN is managed by the Ministry of Finance of the Czech Republic and has been operational since 1995.<sup>ii</sup> The structure of the entries into ISPROFIN allows a regional break-down of capital expenditure at the level of the NUTS 3 and 4 regions. However, several methodological problems arose during the analysis of this data, and consequently, a number of projects and programmes (and the corresponding financial volume of capital expenditure) had to be excluded from the analysis. The following criteria for omitting particular projects or programmes were applied: i) the regional allocation of the investment incentives was not given or investment was implemented abroad; ii) the project or programme was predominately for current expenditure; iii) the project was of an “extraordinary” nature (i.e. expenditure devoted to the recovery of the territories affected by the 1997 and 2002 floods or devoted to the restitution to former owners of private property that was nationalized during the communist period).

Deleted: elaboration

Deleted: ,

Deleted: o

Deleted: s

Deleted: the

1  
2 An overview of the financial amounts included (and excluded) from the regional analysis of  
3 public capital expenditure is given in Table 3. Another methodological challenge was  
4 represented by projects which benefited the whole country, but in ISPROFIN were assigned  
5  
6 to one region only. This was especially the case for the purchase of jet fighter aircraft, which  
7  
8 were also excluded from the analysis.  
9  
10  
11  
12

Deleted: o

Deleted: s

Deleted: consequently

Formatted: Indent: First line: 0 pt

13  
14 This problem relates to the fundamental methodological question of which principle  
15 investment expenditure should be attributed to a certain region. For instance, SHORT (1978)  
16 has explicitly distinguished two types of regional expenditure: “regionally relevant” and “total  
17 expenditure” allocated to the region. According to Short, “regionally relevant” expenditure  
18 benefits only the region in which the particular public money was allocated. Alternatively,  
19 WISHLADE *et al.*, (1996) and also CAMINAL (2004) differentiated between the “flow” and  
20 “benefit” approaches to the analysis of the regional distribution of public expenditure. The  
21  
22 “flow” approach assigns expenditure to regions regardless of whether or not the region in  
23  
24 question is an “end user”, while the “benefit” approach concentrates on the end users of the  
25  
26 public money spent, or more precisely on the final beneficiary regions. Consequently, in our  
27  
28 analysis, the flow approach has been applied as it would be impossible to judge each of the  
29  
30 approximately 40,000 investment projects of ISPROFIN included in the analysis on the basis  
31  
32 of the benefit approach.  
33  
34  
35  
36  
37  
38  
39  
40

Deleted: the

41 **Table 3: Financial resources of ISPROFIN 1995–2005 (in billion CZK, current prices, in**  
42 **%)**  
43

44 Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic), authors` calculations.  
45

46 (about here)  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2 In addition to ISPROFIN, which covers capital expenditure financed from the state budget,  
3  
4 the two most relevant extra-budgetary funds were incorporated into our analysis. These two  
5  
6 funds are: The State Fund for Transport Infrastructure (SFTI) and the State Environmental  
7  
8 Fund (SEF). The data on the individual projects supported by these funds were obtained from  
9  
10 the responsible institutions. In the case of the State Fund for Transport Infrastructure, the  
11  
12 capital expenditure for 2001–2005 has been analysed at the level of NUTS 3 regions.  
13  
14 Investment projects to a total value of CZK 222.3 billion were included in the analysis. The  
15  
16 State Environmental Fund is represented by the data concerning expenditure during the years  
17  
18 1999–2005, which amounted to CZK 13 billion. Therefore, this analysis covers capital  
19  
20 expenditure from the state budget and from two extra-budgetary funds to a total value of CZK  
21  
22 617 bln. The analysis was structured into six parts, covering the most relevant thematic  
23  
24 spheres of public capital expenditure (see Table 4).  
25  
26  
27

Deleted: ¶

Deleted: of

28 **Table 4: Overview of the analyzed data for the period 1995-2005 (in billion CZK, current**  
29  
30 **prices)**

31 Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic), Internal materials of  
32  
33 the State Fund for Transport Infrastructure (SFTI) and the State Environmental Fund (SEF), authors'  
34  
35 calculations.

36 (about here)  
37  
38  
39

40 **6. Results**

41 In this section, the main results of the regional analysis of capital expenditure committed  
42  
43 within the sectoral governmental policies in the Czech Republic will be presented (Table 4  
44  
45 provides an overview of the financial volumes analysed). First, attention is paid to an analysis  
46  
47 of the distribution of all capital expenditure, that is an analysis of investment projects financed  
48  
49 from the state budget and from relevant state extra-budgetary funds. In view of the fact that  
50  
51

Deleted: analysed

Deleted: i.e.

Deleted: both

1  
2 the overall nature of regional differentiation of investment allocation is considerably  
3  
4 influenced by investments in the transport infrastructure, in the next stage such investments  
5  
6 are excluded from the analysis and analysed separately. Next, the regional allocation of  
7  
8 investments in other relevant sectors is considered, namely the territorial allocation of  
9  
10 investments within explicit regional policy, investments in universities and the R&D sector,  
11  
12 and finally investment assigned to the environmental sector.

Deleted: i.e. besides the already mentioned transport sector,

Deleted: s

Deleted: in

Deleted: are examined as well.

### 16 6.1. Regional analysis of total capital expenditure

17  
18 The regional analysis of total capital expenditure financed from the central level (i.e. from the  
19  
20 state budget and from both state extra-budgetary funds) in the period 1995–2005, includes  
21  
22 nearly CZK 617 billion after the data has been ‘cleaned’ by the above described procedure.  
23  
24 The nature of the capital expenditure determined that such invested funds were used primarily  
25  
26 for development activities, and allocation of such investments has an undoubted dynamic  
27  
28 effect on the relevant regions (e.g. SHORT, 1981; AUTERI and COSTANTINI, 2004).

29  
30  
31 The overall spatial pattern of the regional distribution of the analysed funds can be considered  
32  
33 as significantly unbalanced. In the period studied, over one quarter of the analysed  
34  
35 investments (which in absolute terms represents approximately CZK 168 billion) were  
36  
37 allocated from the national level into the capital city of Prague, socio-economically the most  
38  
39 advanced region of the Czech Republic (for regional GDP per capita see Figure 2). The  
40  
41 dominance of Prague is also proved by relative indicators, i.e. investments per inhabitant  
42  
43 (approximately CZK 142 thousand per inhabitant, which is 237% of the average for the Czech  
44  
45 Republic - see Table 5). With respect to economic performance indicators, i.e. after putting  
46  
47 capital expenditure in relation to the regional GDP level, it was 116% of the average  
48  
49 allocation of the Czech Republic and in relation to the economic aggregate it was 123% of the

Deleted:

Deleted: ) (

Deleted:

Deleted:

national average. The term economic aggregate was defined by HAMPL (2005) as the product of the number of jobs (the number of jobs is determined as the number of economically active persons after deducting the unemployed and adding the commuting balance calculated on the basis of the 2001 Census) and the average wage in the region in question. The Plzeňský and Olomoucký regions achieved an even higher investment allocation than Prague with respect to GDP (136%, resp. 137% - see Table 5), and the same order applies when the allocated investment volume is related to the economic aggregate.

Deleted: E

Deleted: a

Deleted:

Deleted:

Deleted: ) (

**Table 5: Capital expenditure per capita and per regional, GDP (1995–2005, in %)**

Deleted: related to regional

Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001, authors' calculations.  
(about here)

**6.2. Regional analysis of total capital expenditure after exclusion of transport investment**

Deleted: s

Since the extraordinary volume of investment devoted to transport infrastructure (CZK 222 billion from the state budget and from the State Fund for Transport Infrastructure – see Table 4), which undoubtedly influences the overall picture of the regional allocation of investment, such expenditure was excluded from the analysis in the following stage. The remaining investment projects thus represent approximately CZK 395 billion for the period of 1995–2005 again.

Deleted: Due to

Deleted: the

Deleted: ,

Deleted: differentiation of

Deleted: allocation

After the exclusion of projects in the transport infrastructure sector, the position of Prague is even higher (see Table 5). In absolute terms, its share of public capital expenditure in the Czech Republic actually increased to 37.5%, while in per capita terms the investment allocation to Prague was 326% of the average value for the Czech Republic. No other NUTS 3 region received an above-average allocation per inhabitant. Even when the allocated

Deleted: n

Deleted:

Deleted:

1  
2 investment projects are related to the regional GDP, the Prague region is still above the  
3 national average (see Table 5). Investments in Prague were directed particularly to the state  
4  
5 administration (approximately CZK 55 billion), state defence (CZK 24 billion), health service  
6  
7 (CZK 18.1 billion), infrastructure development (CZK 18.9 billion) as well as public city  
8  
9 transport (4.8 billion CZK), R&D (CZK 6.9 billion) and education (CZK 8.7 billion).  
10  
11

Deleted: "subsidized" by the other regions

12  
13  
14 As all data except for that on transport infrastructure projects was territorially identified up to  
15  
16 NUTS 4 level, a detailed analysis of the regional distribution of capital expenditure, after  
17  
18 exclusion of transport expenditure, could be carried out on the NUTS 4 level regions. At this  
19  
20 hierarchical level, Prague dominates absolutely. The district of Kutná Hora achieved the  
21  
22 second highest allocation per inhabitant and the highest allocation per economic aggregate,  
23  
24 but this was thanks to extraordinary investments in the military air force base in Čáslav. The  
25  
26 district of Brno–město (after Prague the second most important economic centre of the Czech  
27  
28 Republic) is in third position with 162% of the average allocation per inhabitant. Brno also  
29  
30 achieved the second highest share of 6%. The districts of Ostrava–město (2.2%), Olomouc  
31  
32 (2.6%) and Plzeň–město (2.2%) also received significant shares. Other districts received only  
33  
34 minor allocations.  
35  
36

Deleted:

Deleted:

Deleted:

Deleted:

Deleted:

37  
38 Where capital expenditure was considered per inhabitant, above-average investments  
39  
40 compared to the average for the Czech Republic were allocated to only 11 out of 77 districts,  
41  
42 and 22 districts did not even achieve 50%. The regions receiving significantly below-average  
43  
44 investment funds per inhabitant include the majority of districts in North-Western Bohemia  
45  
46 and Northern Moravia (which, however, are mostly among the regions supported within  
47  
48 Czech regional policy – see Figure 2), the internal periphery, as well as a large area of  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Deleted:

Deleted: that have

Deleted: ed

Deleted: the



Southern, Western, Northern and Eastern Bohemia and the Czech-Slovak borderland (see Figure 3).

**Figure 2: Assisted regions supported within Czech explicit regional policy**

Source: Ministry for Regional Development.

(about here)

Deleted: the

**Figure 3: Capital expenditure per capita after exclusion of transport infrastructure in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).**

Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors` calculations.

(about here)

Deleted: per capita

Due to the unavailability of GDP data for NUTS 4 regions and the limited reliability of this indicator on the NUTS 3 regions, GDP was replaced by an economic aggregate. At regional level, this indicator achieves a very high correlation with regional GDP (0.998). After putting the allocated investment funds in relation to the economic aggregate (see Figure 4), Prague achieved 169% of the average for the Czech Republic (the highest allocations went to the districts of Kutná Hora - 257% and Prostějov - 170%, in both cases thanks to extraordinary investments in the defence sector). Highly uneven distribution of this expenditure illustrates well the fact that above-average values were achieved by only 13 districts, among which was also the second largest city (district Brno-město - 119 %).

Deleted: on GDP on the

Deleted: level

Deleted: level

Deleted: the

Deleted: On the

Deleted:

Deleted:

Deleted:

**Figure 4: Capital expenditure per economic aggregate after exclusion of transport infrastructure investments in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).**

Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005), authors` calculations.

(about here)

Deleted: per economic aggregate

### 6.3. Capital expenditure in the transport sector

The extraordinary importance of investment devoted to the transport infrastructure is given by their very high volume (CZK 222 billion), which represents approximately 36% of the volume of the investment observed in this study. In addition, it is obvious that the regional formula of transport constructions, often linear in nature, may significantly differ from the spatial formula of other investment projects. For this reason, the transport sector was chosen for a separate regional analysis (i.e. investment in construction of motorways, expressways, railway corridors, and the underground in Prague). Despite a number of methodological constraints, it was possible to unite the two most important sources of funds for this sector: the state budget (i.e. ISPROFIN) and the State Fund for Transport Infrastructure. The total analysed investment volume of 1995–2005 exceeds CZK 222.3 billion (ISPROFIN – CZK 96.7 billion, the State Fund for Transport Infrastructure – CZK 125.5 billion), and the data are available only for NUTS 3 regions.

Deleted: s

Deleted:

Deleted: s

Deleted: to that

Deleted: s

Deleted: at the

Deleted: level

Figure 5 illustrates the considerably above-average allocation of investment in transport in Western Bohemia, which corresponds to the hypothesis of allocation of investment along a traditional west-east gradient in the level of socio-economic development. In transport investment, this gradient is raised by the effort to ensure transport connections for the Czech Republic or its capital of Prague with nearby economic centres in Germany (Munich, Frankfurt, Berlin). Although the area of Northern Moravia is a structurally affected region, as is North-Western Bohemia, transport investment has flowed more to Northern Bohemia in recent years, because the transport connection with Poland was of less priority than connections to Germany or Western Europe.

Deleted: s

Deleted: s

Deleted: s

Deleted: s

Deleted: ve

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

*Figure 5: Transport infrastructure investment per capita in NUTS 3 regions, 1995–2005,*

*Czech Rep. = 100 % (in %)*

Source: ISPROFIN, SFTI, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

(about here)

The spatial formula for the allocation of per capita investment in transport is very similar to the case where transport investment is related to GDP (the correlation coefficient is 0.954). In both indicators the position of Prague is well below national average (78%, resp. 38% of the Czech Republic average). On the contrary, Plzeňský, Olomoucký, Ústecký and Karlovarský regions achieved significantly above-average allocations. However, in evaluating the regional distribution of transport infrastructure investments (and of general investments as well) it is necessary to consider the time aspect in the sense that if a significantly higher amount of funds is granted to a region in a certain time range, it may mean that the necessary infrastructure had not previously been constructed in the region in question and it is being built behind schedule or out of needs arising from the different geopolitical orientation of the Czech Republic after the fall of the Iron Curtain. For example, as early as the communist era, the D1 motorway was completed between Prague and Brno, leading across the Vysočina region, so this region records a significantly below-average allocation, while in the districts of Tachov and Plzeň-jih districts, the D5 connecting Prague and Bavaria was built during the period considered here.

The regional distribution of capital expenditure after the exclusion of transport infrastructure investments when related to the economic level of the region (GDP) shows that transport investments are what "aid" economically weaker regions to reach above-average values. If transport investments are not considered, Prague is quite clearly the region that gains most

Deleted: s

Deleted: s

Deleted: s

Deleted: are

Deleted: ) (see Table 5 and 6a

Formatted: Not Highlight

Deleted: , only with the difference

Formatted: Not Highlight

Deleted: that in both

Formatted: Not Highlight

Deleted:

Formatted: Not Highlight

Deleted: , or

Deleted: in

1  
2 from redistribution of public investment, both in per capita terms and in relation to GDP  
3  
4 (116 %, or 159 % of the Czech Republic average - see Table 5).  
5  
6  
7

Deleted: s

Deleted: ) (

#### 8 **6.4. Capital expenditure allocated within explicit regional policy**

Deleted: the

9  
10 Since one of the aims of this article is to show a significant discrepancy between the regional  
11  
12 formula for the allocation of public investment funds within non-regional policies and  
13  
14 regional policy, this is presented by Figure 6 which shows investments granted to explicit  
15  
16 regional policy from the state budget. Strikingly, the funds allocated within regional policy  
17  
18 are spread widely across the whole territory of the Czech Republic. This is in sharp contrast  
19  
20 with the very conception of regional policy as a policy which supports only selected regions.  
21

Deleted: empirically

Deleted: the

22 This finding cannot be justified by changes of assisted areas over the investigated period as  
23  
24 there was considerable stability of both the regional pattern of lagging and leading regions  
25  
26 and consequently also of assisted areas delineated for the sake of regional policy (BLAŽEK,  
27  
28 2005b). On the other hand, the pattern of investment within regional policy does confirm that  
29  
30 a certain priority was given to the assisted areas. Namely, the Moravian districts, especially  
31  
32 the southern and, to some extent, northern ones ranked among the largest recipients of such  
33  
34 investments (together with North-Western Bohemia they rank among the regions supported  
35  
36 within Czech explicit regional policy, as does Northern Bohemia to some degree).  
37  
38 Nevertheless, it is necessary to mention a paradox as a statistically highly significant positive  
39  
40 relation of regional policy investment to regional GDP and to the economic aggregate was  
41  
42 demonstrated for NUTS 3 regions (in both cases excluding Prague - see Table 6a). The same  
43  
44 applies also to the level of NUTS 4 regions (see Table 6b) where a statistically significant  
45  
46 positive relation was found between the regional policy capital expenditure and the level of  
47  
48 economic development measured by the economic aggregate as a proxy for regional GDP. At  
49  
50 the same time, a larger part of Moravia ranks, with other regions supported within explicit  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Deleted:

Deleted: ) (

Deleted: s

Deleted: the Czech

1 regional policy, as an area significantly underfinanced with respect to the total investment  
 2 from the state budget after the exclusion of transport. In simple terms, districts supported  
 3 within the explicit regional policy in the Czech Republic received only a very limited volume  
 4 of investment from the national level (after the exclusion of transport constructions) (compare  
 5 Figures 2, 3 and 4). On the other hand, support within Czech regional policy was significantly  
 6 concentrated into these regions (see Figure 6). However, a huge difference in the financial  
 7 sums invested has to be stressed again: CZK 7.2 billion for regional policy versus the total  
 8 volume of the analysed funds amounting to CZK 617 billion. Nevertheless, although the  
 9 volume of investments for regional policy at the national level is nearly negligible, its  
 10 importance is significantly higher for the supported regions.

Deleted: s

Deleted: very

Deleted: s

Deleted: cfr.

Deleted: and

Deleted: or

Deleted: the state

21  
 22  
 23  
 24 **Figure 6: Capital expenditure per capita from the state budget devoted to explicit regional  
 25 policy in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %).**

Deleted: devoted

Deleted: per capita

26  
 27 Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

28  
 29 (about here)

30  
 31  
 32  
 33 **Table 6a: Correlation of selected indicators for NUTS 3 regions (n=13 – Prague excluded)**

34  
 35 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001,  
 36 HAMPL (2005), authors' calculations.

37  
 38  
 39 **Table 6b: Correlation of selected indicators for NUTS 4 regions (n=76 – Prague excluded)**

40  
 41 Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001,  
 42 HAMPL (2005), authors' calculations.

43 (about here)

#### 44 45 46 **6.5. Capital expenditure for higher education, R&D and the environmental sector**

47  
 48 Within the regional analysis of capital expenditure from the state budget of the Czech  
 49 Republic, sectoral analyses were also carried out. As an example, Figure 7 shows investment

Deleted: also according to sectoral classification

Deleted: s

1  
2 from the state budget in the infrastructure of universities and colleges and other R&D  
3  
4 institutions amounting to approximately CZK 25 billion. The expected regional distribution of  
5  
6 such expenditure into economically more developed regions (Prague, Brno) and to regions  
7  
8 where a public college is located, or to regions with headquarters of important research  
9  
10 institutes (the Prague hinterland) was demonstrated (similar regional pattern of public R&D  
11  
12 expenditure was shown by WISHLADE *et al.* 1996 or THE ESPON MONITORING COMMITTEE  
13  
14 2005). Nevertheless, it is necessary to point out that it is not only capital expenditure from the  
15  
16 central level that is devoted to this sector. For example, it was not possible to obtain data on  
17  
18 the regional allocation of financial support for R&D projects allocated by the Grant Agency  
19  
20 of the Czech Republic. In addition, it is necessary to take into account a frequent  
21  
22 methodological problem, when some analysed data are allocated according to the  
23  
24 headquarters of the institution in question, although such funds may then be invested in  
25  
26 branches of the institution in a different region. It is thus probable that in fact investment in  
27  
28 higher education and R&D is less concentrated than the data analysed shows.

Deleted: s

Deleted: are quite

31  
32 **Figure 7: Capital expenditure per capita of the state budget devoted to universities and for**  
33  
34 **R&D institutions in NUTS 4 regions, 1995–2005, Czech Rep. = 100 % (in %)**

Deleted: per capita

35 Source: ISPROFIN, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

36  
37 (about here)

38  
39  
40  
41 Figure 8 shows investment in the environment sector amounting to CZK 25.6 billion,  
42  
43 allocated both from the state budget and the State Environmental Fund. Although no clear  
44  
45 relation between the distribution of funds and environmental al quality has been shown, we may  
46  
47 confirm to some extent that investment was allocated to regions in which it is necessary to  
48  
49 solve a specific problem with respect to the environment (e.g. support of mining reduction,  
50  
51 revitalising the river system, pond reconstructions).

Deleted: s

Deleted: al

Deleted: that were

Deleted: was/

1  
2  
3  
4 A surprisingly high allocation of investment to border districts in South-Western Bohemia  
5  
6 relates to investment in the territorially largest national park in the Czech Republic (The  
7  
8 Šumava National Park). Figure 8 provides, however, a surprising finding, that investment  
9  
10 projects in the environment sector are not greatly concentrated in the structurally handicapped  
11  
12 regions in Northern Bohemia and in Northern Moravia where the environment is seriously  
13  
14 damaged. There is one exception with high investment - the Česká Lípa district - where the  
15  
16 running down of the uranium industry and subsequent cultivation of the area are jointly in  
17  
18 progress.

Deleted: s

Deleted: al

Deleted: s

19  
20  
21  
22 **Figure 8: Environmentally related capital expenditure *per capita* of the state budget in**  
23  
24 **1995–2005 and of the State Environmental Fund in 1999–2005 in NUTS 4 regions, Czech**

Deleted: per capita

25  
26 **Rep. =100 % (in %)**

27 Source: ISPROFIN, SEF, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

28  
29 (about here)

### 30 31 32 **6.6. Relation of capital expenditures to selected socio-economic variables**

33  
34  
35 On the basis of correlation coefficients for selected indicators for NUTS 3 regions (Table 6a)

36 we can demonstrate a statistically significant relation between all regional allocations of  
37  
38 investment via all analysed categories of investment (i.e. total investment, total investment  
39  
40 after exclusion of transport investment, transport investment, investment into R&D and  
41  
42 universities and regional policy investment, and their economic performance expressed by the  
43  
44 GDP and the economic aggregate. The same finding counts for correlation coefficients for  
45  
46 NUTS 4 regions (Table 6b), however, due to data limitations only the correlation between 3  
47  
48 investment categories and the economic aggregate could be calculated. It is important to stress  
49  
50 again that with respect to the declared objectives of Czech regional policy, the correlation  
51  
52

Deleted: s'

Deleted: s

Deleted: s

Deleted: s

Deleted: s

Deleted: s

Deleted: (

Deleted: )

Deleted: on

Deleted: values of the

Deleted: coefficients

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

between the share of investment allocated within explicit regional policy and economic performance should be negative. However, on both NUTS 3 and NUTS 4 level regions positive and even statistically significant values were obtained indicating that even allocation of investment within regional policy is not in line with its own strategic objective.

Deleted: s

Deleted: while

Deleted: III

Deleted: IV

Deleted: s

Deleted: representative

Deleted: .

Deleted: There is also the interesting fact that if Prague is considered with the NUTS 3 units, the shares of regions in capital expenditure allocated within the regional policy and regional development support do not correlate closely with indicators of the level of economic development.

The identification and detailed assessment of factors behind these observed patterns goes beyond the focus of this paper, however at least a brief discussion should be included. In countries like the Czech Republic which are lacking instruments for the systematic evaluation of the effectiveness and efficiency of planned public investment, a relatively important role can be assumed for subjective factors. The decision making process on public investment committed from the central level basically proceeds at two levels. Firstly, on the basis of a proposal of the Ministry of Finance, the Government and Parliament decide about financial allocations to particular sectors that come under the responsibility of particular ministries. Secondly, there is a process of selection of priorities by a particular ministry. In this case, three main factors influencing the decision making process on public investments might be identified: i) the adopted strategy for a specific sector (inevitably even these strategic documents can to some extent reflect subjective factors), ii) the interests of (esp. high-ranking) public servants and iii) the interests of politicians. On the basis of our experience of more than 10 years of contractual cooperation by one of the authors with one central administration body we can draw two preliminary conclusions. First, the relevance of these three types of factors differs widely among different sectoral policies. Second, in some cases each of the three above mentioned factors can be decisive. This, therefore, makes a clear case for the introduction of some instruments (including TIA) that would be able to "objectivise" the need for public investment.

Deleted: on

Deleted: the

Deleted: line

Deleted: line

Deleted: o

Deleted: particular

Deleted: , s



## 7. Conclusions and policy implications

The article aims to contribute to the debate on the regional dimension of sectoral (non-regional) governmental policies and to empirically demonstrate the huge discrepancy between both the volume and regional pattern of public capital expenditure committed within the national sectoral policies on the one hand and the official regional policy on the other. The performed analyses focused “only” on the public capital expenditures allocated by the Government of the Czech Republic, but it can be claimed that public capital investments have the most important implications for the development of particular regions (SHORT, 1981; YAMANO and OHKAWARA, 2000). Obviously, the financial volume of the total public capital expenditure is incomparably higher than the financial volume allocated to explicit regional policy.

The regional analyses performed were based on the dataset of public capital expenditure in the Czech Republic covering the years 1995–2005 and demonstrated uneven regional distribution of these investments in favour of the most economically developed region of the Czech Republic – the capital city of Prague. Such a regional pattern for the distribution of public investment supports the hypothesis that there exists a contradiction between the regional impact of sectoral policies on the one hand, and the goals of explicit regional policy on the other. The discrepancy between these two is particularly striking as assisted regions delineated for the sake of national regional policy were to a large extent left aside by decisions regarding the allocation of public capital expenditure (with the exception of expenditure on transport infrastructure). Moreover, a surprising pattern was identified even in the case of investment committed within explicit regional policy (Fig. 6) which is not coinciding well with the map of assisted areas (Fig. 2). Clearly, the allocation of regional policy investments is not respecting fully the objectives of regional policy itself.

Deleted: the extremely

Deleted: socio-

Deleted: of the

Deleted: virtually

Deleted: the

Deleted: s

Deleted: the

Deleted: the

1  
2  
3  
4 Consequently, there is a clear conflict between the goals of explicit regional policy aiming at  
5  
6 the support of less well-off regions and mostly unintended regional impacts of much more  
7  
8 vigorous non-regional governmental policies generally supporting the most developed  
9  
10 regions. These findings are in line with research performed by e.g. WILSON and WISE (1986)  
11  
12 but in contrast with results of YAMANO and OHKAWARA (2000).  
13

14  
15  
16 However, it is necessary to stress that from the point of view of the entire expenditure side of  
17  
18 the governmental policies comprising both capital and current expenditure, the region of  
19  
20 Prague is very likely the most important net payer into the system of public finance due to its  
21  
22 buoyant tax base and to its relatively low share of persons receiving social benefits (see  
23  
24 OUŘEDNÍČEK and NOVÁK, 2006). Nevertheless, it is clear that the uneven distribution of  
25  
26 public capital expenditure, generally favouring more developed regions, is one of the most  
27  
28 important mechanisms of regional differentiation and is, moreover, cumulative in nature.  
29

30  
31 The expectation of a replication of the traditional East-West gradient in the level of socio-  
32  
33 economic development by the regional structure of total capital expenditure has not been  
34  
35 experienced. However, the evidence supporting this expectation can be observed in the case  
36  
37 of the capital expenditure allocated to transport infrastructure. The greater support of transport  
38  
39 infrastructure projects in the Western part of the Czech Republic is a reflection of the priority  
40  
41 assigned to connecting the Czech Republic to Western European structures.  
42

43  
44 Key implications deriving from the conducted regional analysis relate in particular to the  
45  
46 necessity of developing a sound methodology for the territorial impact assessment of public  
47  
48 policies and programmes. In other words, it is essential to develop a procedure evaluating not  
49  
50 only the regional impact of incentives carried out within explicit regional policy (which is  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Deleted: underline

Deleted: hypothesis expecting

Deleted: proven.

Deleted: assumption

1  
2 already becoming common practice in the most developed countries) but also the impact of  
3  
4 public interventions which do not explicitly incorporate a regional dimension but where  
5  
6 implementation might have a significant regional impact. Such an evaluative instrument is  
7  
8 essential for tackling of regional development issues and problems more effectively by  
9  
10 achieving synergies and eliminating contradictions between different policies (SCHÄFFER,  
11  
12 2005; CEC, 2006a, 2006b). Nevertheless, this approach is a real challenge due to the fact that  
13  
14 public policies in most advanced countries are traditionally being implemented via sectorally  
15  
16 structured public administration at central governmental level while the relevance of sectoral  
17  
18 policies for development of particular regions has been clearly underestimated (ROBERT *et al.*,  
19  
20 2001; MACEŠKOVÁ, 2007).

Deleted: a more effective

Deleted: on

21  
22  
23  
24 Despite the effort that has been put into developing TIA methodology, no comprehensive and  
25  
26 satisfactory tool for regional impact assessment has yet been developed. Therefore, as also  
27  
28 documented by our empirical results, which showed both an uneven spatial pattern of the  
29  
30 allocation of public capital expenditure and a huge mismatch between the regional pattern of  
31  
32 this expenditure and the assisted regions, the development of a suitable instrument for  
33  
34 territorial/regional impact assessment and its application at least to the most relevant sectoral  
35  
36 policies remains a critical challenge for both researchers and decision-makers.

Deleted: spatial

Deleted: s

Deleted: highly

Deleted: on

37  
38  
39 \_\_\_\_\_  
40 <sup>i</sup> Such fine-tuning can take many different forms, for example differentiation of the form and  
41  
42 the rate of public support or the involvement of regional self-government or other regional  
43  
44 bodies in decision-making procedures, although in practice such an approach is rather rarely  
45  
46 applied.

47  
48 <sup>ii</sup> Except for the programmes set by a special act such as state support to the national cultural  
49  
50 heritage or agriculture.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

---

For Peer Review Only

1  
2  
3 ARMSTRONG H. and TAYLOR J. (1985) *Regional Economics and Policy*. Philip Allan,  
4  
5 Hertfordshire.  
6  
7

8  
9  
10 AUTERI M. and COSTANTINI M. (2004) Fiscal Policy and Economic Growth: The Case of  
11  
12 the Italian Regions, *The Review of Regional Studies* **34**, 72-94.  
13  
14

15  
16  
17 BENNET R. J. (1980) *The Geography of Public Finance*. Methuen, London.  
18  
19

20  
21  
22 BLAŽEK J. (1995) Le nouveau système de financement des administratios locales en  
23  
24 République tchèque et ses incidences è Í échelle régionale, Cahiers du CEFRES, No.9f,  
25  
26 Prague.  
27  
28

29  
30  
31  
32 BLAŽEK J. (2005a) Financing of Local Government in the Czech Republic: A Never Ending  
33  
34 Reform Process? (Part III), in *New Modes of Governance. The Evolution of Regional*  
35  
36 *Development Regimes in CEE - The Czech Republic* (available at: [http://www.eu-](http://www.eu-newgov.org/database/DELIV/D15D02c_Regional_Development_Regimes_CzechR.pdf)  
37  
38 [newgov.org/database/DELIV/D15D02c\\_Regional\\_Development\\_Regimes\\_CzechR.pdf](http://www.eu-newgov.org/database/DELIV/D15D02c_Regional_Development_Regimes_CzechR.pdf)).  
39  
40

41  
42  
43 BLAŽEK, J. (2005b) Trends to Regional Disparities in the Czech Republic in Pre-Accession  
44  
45 Period in the European Context, *Geographia Polonica* **78.2**, p. 91-106.  
46  
47

48  
49  
50  
51 BLAŽEK J. and CSANK P. (2007) The West-East gradient and regional development: The  
52  
53 case of The Czech Republic, *Acta Universitatis Carolinae - Geographica* **1-2**, 89-108.  
54  
55

56  
57  
58 CAMINAL R. (2004) Personal redistribution and the regional allocation of public  
59  
60 investment, *Regional Science and Urban Economics* **34**, 55-69.

1  
2  
3  
4  
5  
6 CAMAGNI R. (2006) Territorial Impact Assessment – TIA: a methodological proposal,  
7  
8 *Scienze Regionali – Italian Journal of Regional Science* **5**, 135-146.  
9

10  
11  
12 CEC (1996) First Report on Economic and Social Cohesion. Brussels (available at:  
13  
14 [http://ec.europa.eu/regional\\_policy/sources/docoffic/official/reports/repc0\\_en.htm](http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/repc0_en.htm)).  
15  
16

17  
18  
19 CEC (2004) DG REGIO – The Impact of Member State Policies on Cohesion (Final report)  
20  
21 (available at:  
22

23  
24 [http://europa.eu.int/comm/regional\\_policy/sources/docgener/studies/pdf/3cr/impact\\_member.](http://europa.eu.int/comm/regional_policy/sources/docgener/studies/pdf/3cr/impact_member.pdf)  
25  
26 [pdf](http://europa.eu.int/comm/regional_policy/sources/docgener/studies/pdf/3cr/impact_member.pdf)).  
27  
28

29  
30  
31 CEC (2006a) Territorial Impact Assessment. In CEC: *European Territorial Research in*  
32  
33 *Progress*, pp. 67-132. Conference Proceedings of the 1st ESPON Scientific Conference,  
34  
35 ESPON Programme, Luxembourg.  
36  
37

38  
39  
40 CEC (2006b) *Applied Territorial Research. Building a Scientific Platform for*  
41  
42 *Competitiveness and Cohesion*. ESPON Scientific Report II, ESPON Programme,  
43  
44 Luxembourg.  
45  
46  
47

48  
49  
50 CUADRADO J.R., DE LA DEHESA G. and PRECEDO, A. (1993) Regional imbalances and  
51  
52 government compensatory financial flows: the case of Spain, in Giovannini A. (Ed.) *Finance*  
53  
54 *and Development: Issues and Experience*, pp. 261-300. Cambridge University Press,  
55  
56 Cambridge.  
57  
58  
59  
60

1  
2  
3 DG RESEARCH (1991) *The Regional Impact of Community Policies*. Research and  
4  
5 Documentation Papers. Regional policy and transport, series 17., Office for Official  
6  
7 Publications of the European Communities, Luxembourg.  
8  
9

10  
11  
12 DRBOHLAV D. and SÝKORA L. (1997) Gateway cities in the process of regional integration  
13  
14 in Central and Eastern Europe: the case of Prague, in Biffl G. *Migration, Free Trade and*  
15  
16 *Regional Integration in Central and Eastern Europe*, pp. 215-237. Verlag Österreich, Wien.  
17  
18  
19

20  
21  
22 EUROPEAN COMMISSION (1998) *Economic and social cohesion in the European Union:*  
23  
24 *The impact of Member States' own policies*. Office for Official Publications of the European  
25  
26 Communities, Luxembourg.  
27  
28

29  
30  
31 EUROPEAN COMMISSION (2004) *A new partnership for cohesion. Convergence,*  
32  
33 *Competitiveness, Cooperation. Third Report on Economic and Social Cohesion*. Office for  
34  
35 Official Publications of the European Communities, Luxembourg.  
36  
37

38  
39  
40 FLUENTE A. de la (2004) Second-best redistribution through public investment: a  
41  
42 characterization, an empirical test and an application to the case of Spain, *Regional Science*  
43  
44 *and Urban Economics* **34**, 489-503.  
45  
46  
47

48  
49  
50 HAMPL M. (2005) *Geografická organizace společnosti v České republice: transformační*  
51  
52 *procesy a jejich obecný kontext*. Faculty of Science, Charles University in Prague, Prague.  
53  
54  
55

56  
57  
58 HEALD D. (1994) Territorial public expenditure in the United Kingdom, *Public*  
59  
60 *Administration* **72**, 147-175.

1  
2  
3 HEALD D. and SHORT J. (2002) The regional dimension of public expenditure in England.  
4  
5 *Regional Studies* **36**, 743-755.  
6  
7

8  
9  
10 HILL E. and LOWE J. (2007) Regional impact assessment: an Australian example, *Impact*  
11  
12 *Assessment and Project Appraisal* **25**, 189-197.  
13  
14

15  
16  
17 GORZELAK G. (1992) Dilemmas of Polish regional policies during transition, in Gorzelak  
18  
19 G. and Kuklinski A. *Dilemmas of regional policies in Eastern and Central Europe*, pp. 18-  
20  
21 38. University of Warsaw, Warsaw.  
22  
23

24  
25  
26  
27 GUIÁN M.C. and CANELO M.T. (1996) Territorial Public Expenditure and Revenue:  
28  
29 Economic Impact in the European Regional Growth, Euro-American Association of  
30  
31 Economic Development, Working Paper no. 8, Series Economic Development, University of  
32  
33 Santiago de Compostela (available at: <http://ideas.uquam.ca/ideas/data/eaecodev.html>).  
34  
35

36  
37  
38 KATAOKA M. (2005) Effect of Public Investment on the Regional Economies in Postwar  
39  
40 Japan, *Review of Urban & Regional Development Studies* **17**, 115-139.  
41  
42

43  
44  
45  
46 KOSHATZKY K. (2001) The regionalisation of Innovation Policy in Germany - Theoretical  
47  
48 Foundations and Recent Experience. Working Papers Firms and Region No. R1/2000,  
49  
50 Institute for Systems and Innovation Research, Fraunhofer.  
51  
52

53  
54  
55 LEFEBER L. (1964) Regional Allocation of resources in India, in Alonso W. and Friedmann  
56  
57 J. *Regional Development and Planning, A Reader*, pp. 642-653. The M.I.T. Press, Cambridge,  
58  
59 Massachusetts.  
60



1  
2  
3  
4  
5 MACEŠKOVÁ M. (2007) Regionální dimenze fiskální politiky na příkladě veřejných  
6 investičních výdajů v Česku (Regional dimension of fiscal policy – an example of public  
7 capital expenditure in the Czech Republic), *Geografie-Sborník ČGS* **112**, 17-32.  
8  
9

10  
11  
12  
13  
14  
15 MARTHUR V.K. and STEIN S. (1980) Regional Impact of Monetary and Fiscal Policy: An  
16 Investigation into the Reduced Form Approach, *Journal of Regional Science* **20**, 343-351.  
17  
18

19  
20  
21  
22 MARTIN R. (1999) *The Regional Dimension in European Public Policy: Convergence or*  
23 *Divergence?*. Palgrave Publisher, New York.  
24  
25

26  
27  
28  
29 MARTIN R. (2005) Venture Capital Programmes in the UK and Germany: In What Sense  
30 Regional Policies?, *Regional Studies* **39**, 255-273.  
31  
32

33  
34  
35  
36 MIDWINTER A. (2004) The Changing Distribution of Territorial Public Expenditure in the  
37 UK, *Regional and Federal Studies* **14**, 499-512.  
38  
39

40  
41  
42  
43 MOLLE W. and CAPPELLIN R. (1988) (Eds) *Regional Impact of Community Policies in*  
44 *Europe*. Aldershot, Avebury.  
45  
46

47  
48  
49  
50 MOLLE W. (2007) *European Cohesion Policy*. Routledge, London.  
51  
52

53  
54  
55  
56 MRD (2006) *Strategie regionálního rozvoje*. Ministry for Regional Development of the  
57 Czech Republic, Prague.  
58  
59  
60

1  
2  
3 MUSGRAVE A.R. and MUSGRAVE B.P. (1973) *Public Finance in Theory and Practice*.  
4  
5 McGraw-Hill Kogakusha, Tokyo.  
6  
7

8  
9  
10 OUŘEDNIČEK M. and NOVÁK J (2007) Kvantitativní analýza stavu a vývoje  
11 segregace/separace obyvatelstva, in Sýkora L. *et al Segregace v*  
12 *České republice (Segregation in the Czech Republic)*, pp 9-28.  
13  
14 Ministry for Regional Development, Prague.  
15  
16  
17  
18  
19

20  
21  
22 PEKOVÁ J. (2002) *Veřejné finance - úvod do problematiky*. ASPI Publishig, Praha.  
23  
24  
25

26  
27 PORTEOUS D.J. (1995) *The Geography of Finance*. Aldershot, Avebury.  
28  
29  
30

31  
32 PRUD`HOMME R. (1993) The Potential role of the EC budget in the reduction of spatial  
33 disparities in a European economic and monetary union, in Commission of the European  
34 Communities *The Economics of Community Public Finance*, pp. 321-351. Reports and  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
Studies. Directorate-General for Economic and Financial Affairs, European Economy no. 5.  
Luxembourg.

ROBERT J. *et al* (2001) *Spatial Impacts of Community Policies and Costs of Non-co-*  
*ordination*. European Commission, Brussels.

SHORT J. (1978) The regional distribution of public expenditure in Great Britain, 1967/70 –  
1973/74', *Regional Studies* **12**, 499-510.

1  
2  
3 SHORT J. (1981) *Public Expenditure and Taxation in the UK Regions*. Gower Publishing  
4 Co. Ltd, Hampshire (England).  
5  
6  
7

8  
9  
10 SHOUT J.A. and JORDAN A.J. (2007) From Cohesion to Territorial Policy Integration  
11 (TPI): Exploring the Governance Challenges in the European Union, *European Planning*  
12 *Studies* **15**, 835-851.  
13  
14  
15

16  
17  
18 SCHÄFFER N. (2005) Coordination of European spatial development: Whose  
19 responsibility?, *The Town Planning Review* **76**, 14-57.  
20  
21  
22  
23

24  
25  
26 SCHINDEGGER F. and TATZBERGER G. (2003) TIA minimum requirements – a  
27 Guidance for Policy Impact Projects of ESPON. Austrian Institute for Regional Studies and  
28 Spatial Planning (available at:  
29 [http://www.espon.lu/online/documentation/projects/cross\\_thematic/816/2.ir-3.1.pdf](http://www.espon.lu/online/documentation/projects/cross_thematic/816/2.ir-3.1.pdf)).  
30  
31  
32  
33

34  
35  
36 THE ESPON MONITORING COMMITTEE (2005) ESPON 2.1.2 Territorial Effects of EU  
37 Research and Development Policies (Final report) (available at:  
38 [http://www.espon.eu/mmp/online/website/content/projects/243/266/file\\_399/fr-](http://www.espon.eu/mmp/online/website/content/projects/243/266/file_399/fr-2.1.1_final.pdf)  
39 [2.1.1\\_final.pdf](http://www.espon.eu/mmp/online/website/content/projects/243/266/file_399/fr-2.1.1_final.pdf)).  
40  
41  
42  
43  
44  
45  
46  
47

48  
49  
50 UHLÍŘ D. (2004) Regional versus National Development: What sort of Policy for new  
51 Czech Regions?, in Drbohlav D., Kalvoda J. and Voženílek V. (Eds) *Czech Geography at the*  
52 *Dawn of the Millenium*, pp. 269-277. Palacky University in Olomouc, Olomouc.  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 WILSON P.A. and WISE C. (1986) The Regional Implications of Public Investment in Peru,  
4  
5 1968-1983, *Latin American Research Review* **21**, 93-116.  
6  
7  
8  
9

10 WISHLADE F., YUILL D., TAYLOR S., DAVEZIES L., NICOT B.H. and PRUD`HOMME R. (1996):  
11  
12 Economic and Social Cohesion in the European Union: The Impact of Member States`Own  
13  
14 Policies. Final report for the European Commission. European Policies Research Centre,  
15  
16 University of Strathclyde, Glasgow.  
17  
18  
19  
20  
21

22 YAMANO N. and OHKAWARA T. (2000) The Regional Allocation of Public Investment:  
23  
24 Efficiency or Equity, *Journal of Regional Science* **40**, 205-229.  
25  
26  
27  
28  
29  
30  
31

### 32 Other sources

33  
34  
35  
36

37 ISPROFIN – Internal Material of Ministry of Finance of the Czech Republic

38 Internal Material of State Fund for Transport Infrastructure of the Czech Republic

39 Internal Material of State Environmental of the Czech Republic

40 Statistical Yearbooks of the Czech Republic 1997-2006 – Czech Statistical Office

41  
42  
43  
44  
45  
46 Regional accounts – Czech Statistical Office  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

236x87mm (300 x 300 DPI)

158x98mm (500 x 500 DPI)

175x98mm (300 x 300 DPI)

158x97mm (300 x 300 DPI)

159x98mm (300 x 300 DPI)

160x97mm (300 x 300 DPI)

For Peer Review Only

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

163x97mm (300 x 300 DPI)

161x97mm (300 x 300 DPI)

For Peer Review Only

Table 1: Expenditure of the Czech state budget in 1995-2005 (current prices, in billion CZK, in %)

|  | 1995  | 1996  | 1997  | 1998  | 1999  |
|--|-------|-------|-------|-------|-------|
| Total expenditure of the state budget  | 432.7 | 484.4 | 524.7 | 566.7 | 596.9 |
| of which capital expenditures of the state budget                              | 44.1  | 46.4  | 50.6  | 50.5  | 59.0  |
| share of capital expenditures of the total expenditure of the state budget (%) | 10,2  | 9,6   | 9,6   | 8,9   | 9,9   |

Source: Statistical Yearbook of the Czech Republic 1997, 1999, 2001, 2002, 2004, 2006.

Note: In December 2007, the exchange rate was approx. 1 EUR = 27 CZK.

Table 1 continued

|  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  |
|--|-------|-------|-------|-------|-------|-------|
| Total expenditure of the state budget  | 632.3 | 693.9 | 750.8 | 808.7 | 862.9 | 843.8 |
| of which capital expenditures of the state budget                              | 60.9  | 49.6  | 49.7  | 56.9  | 66.7  | 79.0  |
| share of capital expenditures of the total expenditure of the state budget (%) | 9,6   | 7,1   | 6,6   | 7,4   | 7,7   | 9,4   |

Source: Statistical Yearbook of the Czech Republic 1997, 1999, 2001, 2002, 2004, 2006.

Table 2: Expenditure from selected state extra-budgetary funds in 2000-2005 (current prices, in billion CZK)

|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|--|------|------|------|------|------|------|
| Total expenditure of the State Environmental Fund of the Czech Republic                                      | 2.9  | 3.8  | 4.2  | 4.8  | 4.2  | 3.4  |
| of which capital expenditure of the State Environmental Fund of the Czech Republic                           | 2.6  | 3.5  | 3.7  | 4.2  | 3.7  | 3.0  |
| share of capital expenditure of the entire expenditure of the State Environmental Fund of the Czech Republic | 89.7 | 92.1 | 88.1 | 87.5 | 88.1 | 88.2 |
| Total expenditure of the State Fund for Transport Infrastructure   | 8.5  | 30.6 | 40.2 | 41.3 | 52.1 | 48.5 |
| of which the capital expenditure of the State Fund for Transport Infrastructure                              | 5.0  | 13.9 | 24.1 | 25.1 | 34.6 | 37.8 |
| share of capital expenditure of the entire expenditure of the State Fund for Transport Infrastructure        | 58.8 | 45.4 | 60.0 | 60.8 | 66.4 | 77.9 |

Source: Statistical Yearbook of the Czech Republic 2000 - 2006.



Table 3: Financial resources of ISPROFIN 1995-2005 (in billion CZK, current prices in %)

| ISPROFIN   | billion CZK | share of the total sum of ISPROFIN (in %) |
|--|-------------|---|
| Total  | 658.9       | 100.0                                     |
| Included into analysis   | 478.5       | 72.6                                      |
| Totally excluded from the analysis   | 180.3       | 27.4                                      |
| <i>of which</i> regional allocation unknown                                | 81.7        | 12.5                                      |
| allocation abroad  | 6.1         | 0.9                                       |
| current expenditures   | 37.7        | 5.7                                       |
| extraordinary expenditures   | 14.7        | 2.3                                       |
| other specific capital expenditures<br>- e.g. purchase of fighter aircraft | 39.5        | 6.0                                       |

Source: ISPROFIN, authors' calculations.

Table 4: Overview of the analyzed data for the period 1995-2005 (in billion CZK, current prices)

| Thematic sphere of capital expenditure                             | Financial volume | Source                             | Level            |
|--|------------------|------------------------------------|------------------|
| Total capital expenditure  | 617.2            | State budget (ISPROFIN), SFTI, SEF | NUTS 3           |
| Capital expenditure excluding transport infrastructure investments | 394.9            | State budget (ISPROFIN), SEF       | NUTS 3<br>NUTS 4 |
| Transport infrastructure investments                               | 222.3            | SFTI, State budget (ISPROFIN)      | NUTS 3           |
| Explicit regional policy and regional development                  | 7.2              | State budget (ISPROFIN)            | NUTS 4           |
| Environmental capital expenditure                                  | 25.6             | SEF, State budget (ISPROFIN)       | NUTS 4           |
| Capital expenditure devoted to universities and R&D                | 25.4             | State budget (ISPROFIN)            | NUTS 4           |

Source: ISPROFIN (Internal material of the Ministry of Finance of the Czech Republic), Internal materials of the State Fund for Transport Infrastructure (SFTI) and the State Environmental Fund (SEF), authors' calculation.

Table 5: Capital expenditure per capita and related to regional GDP (1995-2005, in %)

| Region                 | Total investments in bln CZK | Total investments per capita Czech Rep. = 100 % | Total investments excluded of transport infrastructure investments per capita, Czech Rep. = 100 % | GDP per capita, Czech Rep. = 100 % | Total investments per GDP, Czech Rep. = 100 % | Total investments excluded of transport infrastructure investments per GDP, Czech Rep. = 100 % | Transport infrastructure investments per GDP, Czech Rep. = 100 % |
|------------------------|------------------------------|---|---|------------------------------------|---|--|--|
| Prague                 | 168.3                        | 237   | 326   | 206                                | 116   | 159  | 38   |
| Central Bohemia region | 55.9                         | 84  | 76  | 95                                 | 86  | 78   | 100  |
| South Bohemia region   | 29.2                         | 78  | 66  | 89                                 | 87  | 74   | 109  |
| Plzeňský region        | 42.3                         | 128   | 89  | 94                                 | 136   | 95   | 209  |
| Karlovarský region     | 13.1                         | 71  | 44  | 80                                 | 89  | 55   | 150  |
| Ústecký region         | 45.3                         | 91  | 53  | 82                                 | 111   | 64   | 194  |
| Liberecký region       | 21.9                         | 85  | 85  | 83                                 | 102   | 103  | 102  |
| Královeský region      | 22.6                         | 68  | 78  | 90                                 | 76  | 86   | 57   |
| Pardubický region      | 23.6                         | 77  | 66  | 84                                 | 92  | 78   | 116  |
| Vysočina region        | 18.8                         | 60  | 67  | 87                                 | 69  | 78   | 54   |
| South Moravia region   | 61.6                         | 90  | 93  | 93                                 | 98  | 101  | 93   |
| Olomoucký region       | 40.9                         | 106   | 87  | 77                                 | 137   | 113  | 181  |
| Zlínský region         | 19.9                         | 55  | 57  | 82                                 | 68  | 71   | 64   |
| Moravskoslezský region | 53.9                         | 70  | 51  | 80                                 | 89  | 65   | 131  |
| Czech Republic         | 617.2                        | 100   | 100   | 100                                | 100   | 100  | 100  |

Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001, authors' calculations.

Table 6a: Correlation of selected indicators for NUTS 3 regions (n=13 - Prague excluded)

|  | Regional share of GDP | Regional share of economic aggregate | Regional unemployment rate | Regional share of total investment | Regional share of transport investment | Regional share of investment excluding transport | Regional share of investment in universities and R&D |
|--|-----------------------|--------------------------------------|----------------------------|------------------------------------|--|--|--|
| Regional share of economic aggregate                 | 0,993                 |                                      |                            |                                    |  |  |  |
| Regional unemployment rate                           | 0,304                 | 0,357                                |                            |                                    |  |  |  |
| Regional share of total investment                   | 0,906                 | 0,910                                | 0,399                      |                                    |  |  |  |
| Regional share of transport investment               | 0,717                 | 0,741                                | 0,634                      | 0,892                              |  |  |  |
| Regional share of investment excluding transport     | 0,905                 | 0,890                                | 0,097                      | 0,903                              | 0,612                                  |  |  |
| Regional share of investment in universities and R&D | 0,583                 | 0,592                                | -0,001                     | 0,618                              | 0,323                                  | 0,775  |  |
| Regional share of expenditure on regional policy     | 0,782                 | 0,818                                | 0,547                      | 0,710                              | 0,573                                  | 0,698  | 0,617  |

Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005), authors' calculations.

Note: Critical value of correlation coefficient for 95% level of significance is 0,497.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47

Table 6b: Correlation of selected indicators for NUTS 4 regions (n=76 - Prague excluded)

|  | Regional share of economic aggregate | Regional unemployment rate | Regional share of investment excluding transport | Regional share of investment in universities and R&D |
|--|--------------------------------------|----------------------------|--|--|
| Regional unemployment rate                           | 0,111                                |                            |  |  |
| Regional share of investment excluding transport     | 0,851                                | -0,009                     |  |  |
| Regional share of investment in universities and R&D | 0,822                                | -0,039                     | 0,915  |  |
| Regional share of expenditure on regional policy     | 0,320                                | 0,404                      | 0,228  | 0,122  |

Source: ISPROFIN, SFTI, SEF, Czech Statistical Office, Statistical Yearbook of the Czech Republic 2001, HAMPL (2005), authors` calculations.

Note: Critical value of correlation coefficient for 95% level of significance is 0,200.