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Local Government Debt and EU Funds in the Eastern Member States:

The Cases of Hungary and Poland

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No. 33 | November 2016

WORKING PAPER SERIES

MAXCAP Working Paper Series

Edited by the MAXCAP Project "*Maximizing the integration capacity of the European Union: Lessons of and prospects for enlargement and beyond*" (MAXCAP)

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Editorial assistance and production: Darya Kulinka, Jan Westerbarkei

Medve-Bálint, Gergő/Bohle, Dorothee: Local Government Debt and EU Funds in the Eastern Member States: The Cases of Hungary and Poland, No. 33, November 2016, "Maximizing the integration capacity of the European Union: Lessons of and prospects for enlargement and beyond" (MAXCAP).

ISSN 2198-7653

This publication has been funded by the European Union under the 7th Framework Programme.

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This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 320115.

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Gergő Medve-Bálint and Dorothee Bohle

Abstract

This paper investigates whether local debt in East Central Europe is associated with the local government's participation in European Union (EU)-funded projects. Drawing on data from Hungary and Poland, we find that in both countries the level of local government indebtedness is positively related to the local government's performance in securing EU funds. In other words, being successful at attaining EU-funded projects leads to higher levels of local debt, other things being equal. This may undermine local finances and increase the financial vulnerability and dependence of local governments. The empirical evidence put forward in this paper is therefore in stark contrast with one of the main ambitions of the EU's Cohesion Policy, which is to empower the local level relative to the central state.

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1. Introduction

Municipal debt rarely makes it into the headlines, even though the indebtedness of local governments may substantially contribute to fiscal imbalances of the state. In fact, not only the media coverage of the issue of municipal debt has been low during the recent European sovereign debt crisis, but even scholarly interest towards local government finances has been rather modest. However, the crisis has seriously affected the subnational level in that the economic downturn has resulted in falling revenues combined with expenditure rigidity because of the continuing responsibility of the local governments for financing basic and social services. The increased fiscal needs have thus led to the deterioration of subnational fiscal balance across Europe (Canuto/Liu 2010; Freire 2013).

The above phenomenon applies to the Eastern European context as well, even though municipal debt there, on average, has not yet reached Western European levels. This is because regulatory restrictions on local government borrowing, the infant domestic financial sectors, and a general mistrust towards debt finance have, until recently, prevented local governments from turning to capital markets (Dafflon/Beer-Tóth 2009). Nevertheless, there is a generally growing trend in the figures of local public debt expressed as a percentage of GDP (Table 1), which suggests that Eastern European local governments increasingly rely on external sources of finance. This phenomenon is a consequence of the region's financial integration into the European and global capital markets, which has allowed local governments to take on debt to finance their various expenses that exceed their revenues (Bohle 2015).

Table 1: Local government debt in percentage (%) of GDP

	2005	2011	2014
Bulgaria	n.a.	1.2	1.2
Czech Republic	2.8	2.6	2.7
Estonia	3.3	3.2	3.8
Croatia	n.a.	1.3	1.7
Latvia	n.a.	6.2	6.0
Lithuania	0.8	1.8	2.1
Hungary	1.9	4.3	0.1*
Poland	2.1	4.2	4.3
Romania	1.2	2.5	2.5
Slovenia	0.7	1.9	2.1
Slovakia	2.3	2.4	2.2
EU-28	n.a.	5.9	6.1

* The remarkably low Hungarian figure for 2014 is the consequence of the central state taking over the entire debt of local governments between 2012 and 2014.
(n.a.) Data unavailable.

Source: Eurostat and Dafflon/Beer-Tóth (2009: 307).

Local governments turn to external sources of finance for various reasons. They may need additional funds to meet their day-to-day service obligations or may raise funds for investment projects such as the improvement of local physical infrastructure. A particular motivation may as well be to participate in development projects funded by the Cohesion Policy of the European Union (EU) which, currently, "is one of, if not the, largest integrated development policy in the Western world, and one of the largest of such programmes anywhere in the world" (McCann/Varga 2015: 1255). This aspect is even more relevant in the case of the Eastern member states because they are currently the greatest beneficiaries of EU funds. This paper thus seeks to explore whether there is a relationship between municipal debt and the amount of EU grants secured by local governments in Eastern Europe. To put it differently, we investigate whether the Cohesion Policy contributes to the deterioration of local finances in the Eastern member states.

But why do we suspect that EU funds are related to local government debt? First, local governments (municipalities) have traditionally been a key target group of EU grants. After the 1988 reform of the Cohesion Policy, the European Commission introduced the so-called partnership principle which provided the opportunity for subnational governments to actively participate in the design and implementation of the policy (Thielemann 2002). In this vein, the 1988 reforms were also "bound to affect territorial relations in the member states by empowering subnational authorities" (Hooghe 1996: 6). Thus – at least in principle – the funds may strengthen local capacities and empower local administrations as well.

However, another principle, the co-financing requirement, may represent a considerable fiscal burden for local governments. As a rule-of-thumb, every EU-funded project has to be co-financed: thus, in the case of municipalities, they need to possess sufficient own resources to cover part of the project expenses. Co-financing rates are set by the Commission for each operational program. Generally, in Eastern Europe the EU co-financing rate varied between 50 and to 85 percent of the total project costs in both the current (2014-20) and the previous (2007-13) programming cycle.[1] In practice, this means that those local governments that secure EU funding and become beneficiaries of the Cohesion Policy have to cover at least 15 percent of the total project costs from their own resources.

Well before EU funds began to pour into the Eastern members, the co-financing requirements caused a concern for scholars specializing in local government finances. As Kopańska and Levitas (2004) argued,

> *"the absorption of EU funds will require from local governments not only significant organizational effort, but significant financial engagement as well. In short, many local governments will not have the funds necessary to meet the co-financing requirements of EU aid monies, or even to begin investments whose costs are to be reimbursed by EU grants"* (Kopańska/Levitas 2004: 64).

1 See General provisions ERDF - ESF - Cohesion Fund (2007-2013) (available at http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=URISERV:g24231&from=EN, accessed 26 July 2016) and Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 (available at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R1303&from=EN, accessed 26 July 2016).

Turning to credit markets or issuing municipal bonds would therefore represent an additional, external source of funding beyond the local government revenues that could be dedicated to the co-financing of EU projects.

In this respect, benefiting from EU funds may pose a fiscal challenge for local governments and could easily undermine their financial stability if they begin to rely excessively on external resources to co-finance the projects. Although this potential effect of the Cohesion Policy has emerged in scholarly discussions, it has not yet been empirically tested. In the following pages, we perform two quantitative case studies on local public finances and EU grants: the first one is on Poland, while the second one is on Hungary. In terms of their territorial-administrative systems, the two countries substantially differ from each other; yet in both states we find a significant positive relationship between local government debt and EU funds. Before discussing the empirical analysis and the results in detail, we briefly introduce the two country cases.

2. Local governance in Hungary and Poland – similarities and differences

After the regime change, local government reforms and territorial administrative reforms featured high on the political agenda both in Hungary and Poland. Establishing local democracy was not only a symbolic break away from communism, but also a key step towards replacing the former local elite. While the territorial reforms involved the creation of self-governing municipalities, the middle tier of administration, which was regarded as the executive arm of the previous regime, fell victim to the changes and had to be downgraded (O'Dwyer 2006). Initially, two-tier systems of state administration were introduced, in which the central state preserved its dominant role. At the same time, municipalities assumed an extensive range of responsibilities without receiving the necessary funds to finance them. From the beginning, local governments were highly dependent on financial transfers from the state budget (Dunn/Wetzel 2000), which coded deep tensions into the system. This phenomenon applies to each Eastern European country, albeit to a varying extent.

Although Poland and Hungary engaged in similar territorial reforms in the early 1990s, later their paths diverged. While local democracy in Hungary flourished until recently, the territorial reforms introduced after 2010 created a highly centralized system where the local level lost many of its previous responsibilities and powers. In contrast, Poland has become the most decentralized, yet still unitary country in Eastern Europe, with strong local governments and a regional level of administration with certain limited powers. Next, we discuss the Polish trajectory and then we continue with summarizing the Hungarian developments.

Territorial reforms in Poland were introduced in two steps. First, the Solidarity government led by Tadeusz Mazowiecki adopted the Local Government Act in 1990, which established the self-governing authorities of *gmina* (municipality) at the lowest tier of state administration. Already in May 1990, local elections were held, contributing to the creation of a new local elite. After a successful start, the development of local democracy suffered from setbacks because especially in 1994-97, when the Left Democratic Alliance (Sojusz Lewicy Demokratycznej, SLD) and the Polish Peasant Party (Polskie Stronnictwo Ludowe, PSL) were in power,

confrontation between the *gmina* and the central administration arose: in these years, the local level gained more functions without receiving the corresponding funds (Regulski 2003). Finally, in 1998, the center-right coalition government of the Solidarity Electoral Action (Akcja Wyborcza Solidarność, AWS) and the Freedom Union (Unia Wolności, UW) concluded the territorial restructuring by adopting a new, three-tier system, which entered into force on January 1, 1999 (Czernielewska/Paraskevopoulos/Szlachta 2004).

The reformed territorial administrative system is composed of 16 NUTS (Nomenclature of Territorial Units for Statistics) level 2 units, called the *voivodships*, which in turn are subdivided into restored historical *powiats* representing county-level local governments. *Gmina* leaders considered the *powiats* as potential future partners in disputes with the central government – thus, they were supportive of their establishment (Regulski 2003: 90). Currently, there are 379 *powiats* and 2,478 municipalities (*gmina*) in Poland. In spite of the reshuffling of state administration, the *gmina* have remained the most important level of subnational government because they control nearly two-thirds of all subnational expenditure, deliver most of the local services, and receive financial transfers directly from the state budget (Levitas 2015: 4).

In 1998, the Polish parliament also adopted the Law on Public Finance (modified in 2003), which specified the revenue sources of the municipalities. The fundamental principles of local government finance were introduced already in 1990, thus the 1998 law codified the practice. According to these regulations, the *gmina* have four basic sources of revenues: local taxes and own revenues, shared national taxes (personal income tax and corporate income tax), state subventions, and earmarked grants (Regulski 2003). By far the most important of these are the transfers from the state budget because only large cities which also hold *powiat* status are able to derive more than one third of their revenue from own resources (Levitas 2015). It is important to note that local governments are not allowed to create new taxes because this is the exclusive authority of the parliament. Instead, they may set the rate up to the maximum level specified by the law of those local taxes (like the local property tax) that had previously been endorsed by the parliament. In this respect, the revenue autonomy of the *gmina* is limited and their power to determine the structure of their resources is constrained (Uryszek 2013).

Even though the local government revenue equalization system which centrally redistributes financial resources from rich municipalities to poor ones has performed reasonably well, local government revenues, on average, do not match their expenditures. Thus, most Polish municipalities are in a permanent state of accumulating budget deficit (Uryszek 2013). In this context, it is not surprising that the municipal bond market has been thriving in Poland (Kopańska/Levitas 2004), although much of the local debt has been generated in bank credits and loans (Uryszek 2013). Consequently, subnational debt has tripled since the mid-1990s (Levitas 2015) and currently, the Polish local debt to GDP ratio is among the highest in East Central Europe (see Table 1).

In spite of the fiscal imbalances experienced by the *gmina*, only few of them are in a dire financial situation. On the one hand, this is because the Law on Public Finance does not allow municipalities to accumulate debt in excess of 60 percent of their revenues. On the other hand, the Regional Accounting Chambers, which are independent bodies of financial oversight with the responsibility of overseeing local finances,

have grown particularly strict in enforcing fiscal discipline (Levitas 2015). However, many local governments are near the maximum level of debt allowed (Uryszek 2013), which makes an inquiry into the potential relationship between EU funds and local debt particularly appealing.

Similar to Poland, Hungary was among the first post-communist countries to establish local self-governments. In fact, the Act on Local Government adopted in 1990 was the first major product of the freely elected parliament. This piece of legislation defined settlements as the basis for local governments and in this vein, each local community was empowered to create its own municipality without taking into account their population size (Pálné Kovács 2011: 9). As a result, the Hungarian system of territorial administration became highly fragmented. Currently, there are 3,174 local governments in Hungary[2] and their average number of inhabitants is slightly above 3,200. However, more than half of them (1,708 municipalities) have less than 1,000 inhabitants, whereas there are only 114 local governments with a population exceeding 15,000.[3]

In spite of the great variety in the size and in the administrative capacity of Hungarian local governments, they have been assigned a broad range of responsibilities, such as pre-school and primary education, social care for the elderly, primary health care, sewage disposal and treatment, provision of drinking water, environment and public health care, local public transport and road maintenance, and municipal planning and development (Vigvári 2008: 7). However, they have not received adequate resources to match these needs. In other words, the central government overburdened municipalities with tasks, but the conditions for their fulfillment were not provided (Pálné Kovács 2011: 23). Under these circumstances, it is hardly surprising why some scholars considered Hungarian municipalities as 'conflict containers' (Vigvári 2010).

Local governments in Hungary may draw on the following sources of revenue: local taxes, shared taxes (personal income tax), central government grants and loans, and credits and municipal bonds. Unlike in Poland, Hungarian municipalities are allowed to levy local taxes, but the share of revenue from this source varies greatly. The most important local tax is the local business tax, which is responsible for about 85 percent of all local tax revenues (Vigvári 2008). However, income from local business tax is highly uneven across the municipalities because economic activity is also unevenly spread in the country. This further contributes to the strong inequality in the financial capabilities and administrative capacities of the local governments.

This is the reason why the key element of local government finances has been the so-called financial equalization system, which is a central redistributive mechanism involving supplemental state support to those municipalities that face severe financial shortages in the fulfilling of their compulsory tasks (Hegedüs/ Péteri 2015). The major problem with this system is that it is mostly based on *ad hoc* support and is "not designed to provide a solution in particular cases, but to regularly make up for permanent shortages" (Pálné Kovács 2011: 25). After the regime change, Hungarian local government finances have therefore remained largely unpredictable and heavily dependent on the state budget.

2 Including the 23 districts of Budapest, which are themselves local governments, but excluding the capital city of Budapest, which is also a local government in its own right.

3 In contrast, the average size of Polish *gmina* is 15,700 inhabitants and among the 2,479 municipalities only one has fewer than 1,500 inhabitants (Krynica Morska, Pomorskie *voivodship*). Source: Central Statistical Office of Hungary, Central Statistical Office of Poland.

In these circumstances, it is small wonder that municipalities began to rely on external funding and turned to capital markets. This was further encouraged by the regulations that did not limit the deficit – it was possible to take out loans virtually without limit, even though the Act on Local Government stipulated that the annual debt burden of municipalities cannot exceed 70 percent of their own revenues (Vigvári 2008). Nevertheless, these statutory restrictions proved ineffective without real enforcement.

After 2006, local government debt was steeply rising: within just five years, the local debt to GDP ratio more than doubled and exceeded four percent of the GDP. In the beginning, municipalities were taking out loans and credits, which the rather irresponsible lending practices of fiercely competing commercial banks facilitated (Homolya/Szigel 2008). Most of these loans were denominated in foreign currency, which, through exchange rate risks, posed a systemic threat to public finances. Later, local governments began to issue municipal bonds, which seemed to provide easier access to external finance than the credit market (Kornai 2014). The vast majority of these transactions concentrated in a rather small circle of municipalities: 93 percent of the balance-sheet liabilities were owned by five hundred local governments that raised the largest proprietary income (Homolya/Szigel 2008: 22).

But why did Hungarian local governments engage in such an extensive borrowing from the capital market? As Bohle (2015) argues, the country's integration into global financial markets and the subsequent penetration of foreign banks into the domestic financial system was the primary enabling factor for the rise in local debt. Given that Hungary's public finances were already in a bad shape and that the EU pressurized the central government to bring down the budget deficit, local governments expected dramatic cuts in their financial transfers from the state. Thus, one of the main motivations for borrowing was to accumulate reserves for the anticipated lean times (Hegedüs/Péteri 2015; Homolya/Szigel 2008). A further potential element was much more political: in the 2006 local government elections, Fidesz, the center-right party at the time in parliamentary opposition, won in nearly every municipality of notable political value. Allegedly, the party leaders encouraged the mayors to drive up local debt to counteract the efforts of the governing socialists to consolidate public finances (Bohle 2015). Although this has not yet been confirmed, data on local government indebtedness suggests that Fidesz-led municipalities indeed became somewhat more indebted than those ran by socialists (Kornai 2014).

A third possible factor for the rise in local debt is related to EU grants, which is the primary concern for the current analysis. The co-financing requirement of EU funds represented a burden to local government finances (Bohle 2015), especially given that most municipalities faced day-to-day problems with funding their operation. The central budget did not provide sufficient additional transfers for the local governments to cover the own expenditures required for EU projects, thus they began to rely on the capital markets (Lentner 2014). Hegedüs and Péteri (2015) put forward another argument: they claim that municipalities engaged in borrowing and issued municipal bonds to generate enough own resources in anticipation of future EU-funded projects. In both arguments, EU funds play a central role in increasing the debt of local governments. However, the proposed relationship has not been empirically tested so far.

The case of Hungary also highlights the political salience of subnational debt. After Fidesz had won constitutional majority in the 2010 parliamentary elections, the new government initiated a large-scale transformation of the domestic political and institutional system, which involved the restructuring of territorial administration as well. According to the government, the rise in local debt posed a serious threat to public finances, which required immediate consolidation. At the same time, problems with municipal debt also supplied a political argument for the further centralization of the whole system.

In the fall of 2012, Prime Minister Viktor Orbán announced that the government would partially take over municipal debt. The consolidation took place in three consecutive steps and in the end, just a few months before the 2014 parliamentary elections, the government decided to take over all the remaining debt of the local governments. In the end, the total consolidated local debt reached 1,344.4 billion HUF (Hungarian forints), about 4.26 billion EUR (Lentner 2014). The central government thus bailed out every single municipality that had accumulated debt. According to Kornai (2014), debt consolidation is a typical example of soft budget constraints and a sign of political clientelism.

Although the bail-out has eased the pressure on local budgets, it is local democracy that has fallen victim to the debt consolidation. This is because the Hungarian government also took over many of the former responsibilities of the municipalities such as education, health care, and public utilities. As a consequence, local government expenditures fell from 12 percent of the GDP to 7.6 percent (Hegedüs/Péteri 2015: 104) and, simultaneously, Hungarian local self-government was downgraded to an empty shell.

In the next section, we perform a quantitative analysis of local government debt in Poland and Hungary, with the objective of determining whether EU grants secured by municipalities are indeed associated with the level of local indebtedness. We first discuss the Polish case and then move on to the Hungarian one.

3. Municipal debt and EU funds in Poland

In terms of the total amount of EU funds, in both the last and the current programming period Poland has been the greatest beneficiary among the Eastern European members. In 2007-13, the country received more than 67 billion EUR, while the total national allocation for the 2014-20 budgetary period exceeded 77 billion EUR.[4] Local governments have also benefited from these funds to a great extent. The following analysis considers all of the expenditures of the 2007-2013 programming cycle that were concluded until 30 June 2015.

In the period from 2007 until June 2015, the total number of EU-funded projects in Poland reached 150,571.[5] *Gmina* were the beneficiaries of 20,398 projects (13.55 percent of the total projects). These are

4 For 2007-13, the source of data is the National Strategic Reference Frameworks (2008: 8), available at http://ec.europa.eu/regional_policy/archive/atlas2007/fiche/nsrf.pdf, accessed 25 August 2016. Data for 2014-20 is available at http://ec.europa.eu/regional_policy/en/funding/available-budget/, accessed 25 August 2016.

5 All the data concerning the EU-funded projects in Poland has been downloaded from the official European Funds Portal (Portal Funduszy Europejskich), available at http://www.funduszeeuropejskie.2007-2013.gov.pl/NaborWnioskow/Strony/Naborwnioskow.aspx?zakladka=4#, accessed 15 January 2016.

the projects where the beneficiary indicated in the official Polish EU-funds database is the local government organization or another entity that is under direct financial control of a *gmina*. In this vein, the following categories of beneficiaries were considered for the analysis: local self-government organizational units (*gminna samorządowa jednostka organizacyjna*); local government legal person (*samorządowa osoba prawna*); school or educational institution (*szkoła lub placówka oświatowa*); and community self-government (*wspólnota samorządowa*).

The dataset posed particular difficulties for the proper identification of the beneficiaries especially regarding the latter two categories, schools and community self-governments. This is because we wanted to exclude all projects of which the beneficiary was not a single local government but either a higher level territorial unit or an association of local governments. Also, the exact territorial identification of a great number of projects posed considerable challenges because in Poland, there are 162 town *gminas* which are surrounded by an independent rural *gmina* with an identical name. In those cases, the beneficiary of a specific project could either be the town or the rural *gmina*. Because the dataset did not clearly distinguish among municipalities with identical names, we had to manually check each unidentifiable project and determine the beneficiary accordingly.

Out of the 2,478 *gmina*, only nine remained without any EU-funded projects,[6] while the rest secured at least one in this period. The most successful local government in terms of the number of projects was the city of Toruń (Kujawsko-Pomorskie region) with 164 projects, followed by Białystok (Podlaskie) with 105 and the capital city of Warsaw with 103 projects. With respect to the total amount of EU funding, Warsaw local government jumps on top with more than 4 billion PLN (Polish złoty) (about 923 million EUR) of EU support, followed by Gdańsk (2 billion PLN, or 454 million EUR) and Szczecin (703 million PLN, or 160 million EUR). Considering per capita EU grants, the picture is substantially different. While the average EU funding per *gmina* – calculated without those that did not carry out any EU projects – reached 579 PLN (132 EUR), the best performing *gmina* in this respect is the town of Żywiec (Śląskie voivodship) with nearly 20,500 PLN (4,650 EUR) of secured EU funding per inhabitant. The runner-up on this list is the town of Krynica Morska (Pomorskie) with 14,630 PLN per capita (3,330 EUR), while the rural *gmina* of Ożarowice (Śląskie) takes the third place with 13,730 PLN (3,125 EUR).

In order to determine the relationship between EU grants and local debt, we collected data on the total expenditure and total public debt servicing of the local governments in the same period until the latest available year. The database of the Central Statistical Office of Poland offers data on both indicators for 2007-14. We aggregated the corresponding figures to create a variable that captures the total *gmina* expenditures and the total amount of debt payments. Finally, we calculated the total per capita expenditures and the total per capita debt servicing and determined the share of debt payments from the total expenditures.

The key dependent variable of the analysis is the total debt service per capita, while the key independent variable is the balance of total project costs and total funding per capita. The latter indicator is a proxy

6 Four rural *gminas* of Budzyń, Kłecko, Kaczory, and Bojanowo in the Wielkopolski region, Krasiczyn in Podkarpackie, Lutocin in Mazowieckie, Kamieńsk in Łódzkie, Łabiszyn in Kujawsko-pomorskie, and Kamieniec Ząbkowicki in Dolnosłaskie region.

that captures the need for own *gmina* resources to fund EU projects relative to the population size. In other words, the higher the per capita difference between the received funding and the total costs of the projects, the greater own resources the municipality has to possess to be able to carry out the projects.

To test the proposed hypothesis about the positive relationship between EU funds and local debt, we ran multilevel linear models on the dataset. The choice was motivated by the fact that *gmina* are nested in higher territorial units, the *voivodships*, and the data may also reflect this hierarchical structure. To put it differently, variation in total debt per capita may be smaller across *gminas* within the same *voivodship* than across *gminas* in different *voivodships*. Multilevel models take into account the nested structure of the data and produce unbiased coefficients unlike simple linear models applied to the same type of data (Hox 2010).

As for the control variables at the municipality level, we included *gmina* population size, total own revenues per capita, and a dummy variable indicating that both in the 2006 and the 2010 local elections a mayor nominated by Civic Platform (Platforma Obywatelska, PO), the major governing party, was elected. A similar dummy was introduced for those local governments where a mayor supported by the Polish People's Party (Polskie Stronnictwo Ludowe, PSL), the junior coalition partner, was leading the municipality during the entire period. These dummies serve to test whether municipalities tend to become more or, the contrary, less indebted if the local government leadership has the same political color as the central government. Lastly, at the *voivodship* level, we included GDP per capita and unemployment rates and we also considered a dummy indicating that the *gmina* is located in one of the most backward Eastern *voivodships* which were eligible for funds from a special, multi-regional operational program[7].

Table 2 reports the results of the models. The null model (not reported in the table) confirmed our choice for using hierarchical linear models for the estimation because it revealed that 5.75 percent of the variation in the dependent variable (total debt service per capita) is generated at the voivodship level, which is sufficient for applying multilevel regression analysis. The models confirmed the expectations: in each specification, the key independent variable shows a positive association with total debt per capita.[8]

More specifically, Model 1 reveals that a one percent increase in the per capita balance of total project costs and total funding is, on average, associated with a 0.078 percent increase in total debt service per capita, all else being the same. The size of local population also shows a positive relationship with the dependent variable, as *ceteris paribus* a one percent increase in the population yields a 0.11 percent rise in per capita debt service. The wealth of the local government indicated by the total own revenues per capita does not show a statistically significant relationship with debt. Interestingly enough, the dummy for PO local leaders also shows a positive and significant sign: compared to municipalities with leaders that

7 The *voivodships* benefiting from the Development of Eastern Poland Operational Porgramme were Warmińsko-Mazurskie, Podlaskie, Lubelskie, Podkarpackie, and Świętokrzyskie, available at http://ec.europa.eu/regional_policy/en/atlas/programmes/2007-2013/poland/operational-programme-development-of-eastern-poland, accessed 25 August 2016.

8 It is important to note that in order to normalize the distribution of the continuous variables, each of them, including the dependent variable and the independent variables (total debt service per capita; population size; balance of total project costs and total funding per capita; total tax revenue and total own revenue per capita; total EU grants per capita; and GDP per capita) were logarithmically transformed.

had other affiliations, the presence of Civic Platform mayors in the entire funding period is, on average, associated with a 25.3 percent increase in total debt service per capita.[9] The dummy for PSL mayors does not show a significant relationship with the dependent variable.

In Model 2, we replaced total own revenues with total own tax revenues per capita and also replaced the *voivodship* GDP with a dummy indicating that the *gmina* is located in one of the poor *voivodships* that were eligible for additional funds from a special multi-regional program. In spite of these changes, the already established relationships between gmina-level explanatory variables and the dependent variable remained unaffected. In Model 3, we replaced the indicator showing the per capita balance of total project costs and total funding with total per capita EU grants secured by the local governments. While all the previously observed associations between the independent variables and per capita debt service stayed the same, Model 3 also revealed that, on average, a one percent increase in total per capita EU grants is related to a 0.14 percent rise in the dependent variable. Finally, in Model 4, we introduced an alternative dependent variable, which is the total debt service expressed as a percentage of the total local expenditures in 2007-14, and included the same explanatory factors as in Model 1. The estimation produced similar results: all the *gmina*-level indicators show the same association with this alternative dependent variable as in the previous models, which contributes to the robustness of the results.

All things considered, our empirical analysis has confirmed that local government indebtedness in Poland is indeed associated with the amount of EU funds secured by the municipalities. More precisely, the higher the gap between total project costs and total funding, the greater the level of municipality debt.[10] Now we turn to the analysis of the Hungarian case.

9 In the case of logarithmic dependent variables, the dummy variable's impact on the outcome (if the value of the dummy switches from 0 to 1) is interpreted in the following way: 100 * [exp(coefficient) - 1] percent. Entering the coefficient value to the equation produces 100 * [exp(0.226) - 1] = 25.36 percent. For more on this, consult Giles (1982) or van Garderen and Shah (2002). This paper considers the percentage impact of a dummy variable regressor on the level of the dependent variable in a semilogarithmic regression equation with normal disturbances. We derive an exact unbiased estimator, its variance, and an exact unbiased estimator of the variance. The main practical contribution lies in a convenient approximation for the unbiased estimator of the variance, which can be reported together with Kennedy's approximate unbiased estimator of the percentage change. The two approximations are very simple, yet highly reliable. The results are applied to teacher earnings and further illustrated by examples from the literature.

10 In terms of explanatory power, our models perform reasonably well: Model 1 explains 26.3 percent of the variation of the dependent variable at the regional level and 5.1 percent of the variation at the local level.

Table 2: Results of the multilevel linear models for Poland

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	DV: total debt service per capita				DV: total debt service as percentage of total expenditure			
	B	SE	B	SE	B	SE	B	SE
Constant	2.203***	.616	2.391***	.609	1.498**	.518	-.250	.177
Local-level effects								
Balance of costs & grants per capita	.078***	.013	.081***	.013			.020***	.004
Total EU grants per capita					.140***	.030		
PO mayor	.226**	.088	.240**	.088	.228**	.087	.077*	.038
PSL mayor	-.021	.061	-.028	.059	-.020	.064	-.010	.014
Total own revenue per capita	.189	.116			.199	.115	.018	.031
Total tax revenue per capita			.130	.104				
Population	.110**	.046	.138***	.042	.129**	.046	.061***	.013
Regional-level effects								
GDP per capita	.403	.322			.370	.343	.134	.120
Unemployment rate	.066	.034	.081*	.034	.062	.035	.023*	.011
Eastern Poland			-.292*	.120				
Random effects								
Local-level variance	.858***	.046	.860***	.045	.853***	.045	.081***	.003
Regional-level variance	.041***	.012	.038***	.013	.044***	.013	.006***	.002
N	2478		2478		2478		2478	
Wald Chi-square	357.31***		567.64***		351.84***		255.72***	

Unstandardized coefficients, robust standard errors

*** p < .001; ** p < .01; *p < .05

Source: Authors.

4. EU funds and municipal debt in Hungary

Similar to Poland, Hungary has been among the central beneficiaries of the Cohesion Policy both in the previous and in the current funding period. The national allocation for the country in 2007-13 was 25.3 billion EUR, while this figure reaches 21.9 billion EUR in 2014-20. The following analysis takes into account the EU funds paid both in the 2004-06 and in the 2007-13 programming period. Thus, it builds on a comprehensive dataset that includes every project that has been contracted since Hungary's accession to the EU until 31 July 2015.[11]

According to the records of the Department of Monitoring and Evaluation at the Prime Minister's Office, 2,182 local government offices have benefited from EU-funded projects since Hungary's EU accession in 2004 up until July 2015. This means that out of the 3,175 local governments, 2,182 offices at least once successfully applied for EU projects. To put this into a broader perspective, during the above-mentioned period, a total of 84,022 projects were contracted in Hungary. From these, 12,694 were awarded to local government offices. This represents a 15 percent share and equals a total EU funding of 1,982.1 billion HUF (about 6.27 billion EUR).

Similar to the procedure we followed in the Polish case, we included only those projects into the final database the beneficiary of which was a local government or an organization that is under direct control of a local government. We excluded higher level territorial units and those associations of local governments that involve higher level territorial units. In addition, we also excluded the city government of Budapest from the calculations and considered only the 23 districts of the city. However, unlike in the case of Poland, we kept those projects whose beneficiaries were local government associations, typically established in micro-regions. The reason for this is that several small Hungarian municipalities participate in projects as members of local government associations. In these instances, the location of the beneficiary is the seat of the association, usually a greater village or small town which provides the bulk of own resources for the projects. Keeping these projects might bias the funding figures towards these sub-regional centers, but the funds distributed for these projects represent only 1.2 percent of the total grants, thus the bias may not be substantial.

In terms of the number of projects, the local government of the city Debrecen won the most of them (105 projects) followed by the city of Miskolc (101 projects) and the city of Pécs (86 projects). As for the total amount of secured EU funding, Miskolc takes the first place with 64.1 billion HUF (about 203 million EUR), then follows Pécs (61.5 billion HUF, or approximately 195 million EUR) and the city of Békéscsaba (58.8 billion HUF, or 186 million EUR). With respect to per capita funds, three small settlements in the county Borsod-Abaúj-Zemplén appear on top of the list: Regéc (5.4 million HUF per inhabitant, or 17,000 EUR), Hernádkércs (3.9 million HUF per inhabitant, or 12,300 EUR), and Bodrogkeresztúr (3.7 million HUF, or 11,800 EUR). The average per capita funding per local government – without those that did not secure any EU grants – equaled 0.21 million HUF (about 663 EUR).

11 Project-level data for the 2004-06 funding period was unavailable for Poland.

A particular challenge for the analysis of the Hungarian data is that a large number of municipalities did not carry out a single EU-funded project. Moreover, not every local government accumulated debt – thus, not all of them were consolidated by the central government. Based on the data received from the Ministry for National Economy, the government took over the debt of 2,036 municipalities. The amount of debt accumulated by these local governments (excluding the capital city of Budapest, the counties, and associations of local governments) reached 959.6 billion HUF (about 3 billion EUR). Based on the presence or absence of debt consolidation and the presence or absence of EU projects, Hungarian local governments can be classified into four categories as shown below in Table 3.

Table 3: The number of Hungarian local governments based on the presence of EU projects and debt consolidation

	EU project beneficiary	**Lack of EU projects**
Consolidated debt	1,570	466
No debt consolidation	612	526

Source: Authors.

This simple two-by-two table reveals that the majority of those local government offices that were EU project beneficiaries also accumulated debt (1,570), while the majority of those which did not receive EU funds at all did not have debt either (526). At the same time, several local governments that did not participate in EU projects became indebted (466) and there were a considerable number of local governments that did not produce debt but managed to obtain some EU funds (612).

It is important to note that 99.25 percent of the total consolidated debt and 92.53 percent of the EU grants secured by local government offices fall in the top left cell of the table. Thus, almost the entire amount of EU grants and virtually all the debt was generated by those 1,570 local governments that were EU project beneficiaries. This is not too surprising though because all the bigger settlements of Hungary, which are the most likely to apply for EU funding, belong to this category. The average population size of these 1,570 settlements is 4,571 inhabitants, while this figure is 1,498 for those 612 localities that received funds but did not produce debt. The average population of those settlements whose debt was consolidated but whose local government offices did not accomplish a single EU-funded project is 547 inhabitants, while the same figure for the last group (no debt and no EU projects) is 443 inhabitants.

Considering the above circumstances, we selected two dependent variables for the analysis. The first one is a dummy indicating whether the municipality received debt consolidation, while the second one is the total amount of consolidated debt per capita. The advantage of using the dummy indicator is that in that case, all the local governments can be included into the models, unlike in the case of the continuous variable. Similar to the Polish estimations, we applied multilevel regression techniques because of the nested structure of the data. In this case, the counties and the capital city of Budapest constituted the grouping variable.

As for the explanatory factors, we also had to follow a mixed approach. On the one hand, we created a dummy that indicates whether the local government was a beneficiary of EU funds or not. On the other hand, we also calculated the total per capita EU grants per municipality and, similar to the Polish analysis, the balance of total project costs and total funding per capita. In addition, we also wanted to test the hypothesis about those municipalities being more indebted which elected Fidesz mayors in 2006 - thus, we created a respective binary indicator.

Regarding the control variables, at the municipality level we included population size, total own revenue per capita, and a dummy indicating whether the local government was engaged in credit repayment in 2005-11. At the county level, we added GDP per capita, unemployment rate, and a dummy for Central Hungary. The reason for the inclusion of this binary variable is that in 2007-13, Central Hungary, which consists of Budapest and county Pest, fell into the funding category of competitiveness and employment, which, in principle, would have involved lower total EU support than in the case of the other counties. Consequently, municipalities located in Central Hungary may have, on average, received less per capita EU funds and would therefore potentially demonstrate lower indebtedness.[12]

Table 4 summarizes the results of the statistical models. Model 5 and 6 are multilevel logistic regressions with a binary dependent variable, while Models 7 through 10 are multilevel linear models where total consolidated debt per capita represents the dependent variable. Model 5 and 6 differ from each other only in the regional-level variables: unemployment rate was replaced with GDP per capita in Model 6. The change did not affect the coefficients of the local-level explanatory factors. In both cases, the presence of an EU project is positively associated with debt consolidation. More precisely, all else being the same, the odds for a local government receiving debt consolidation are about 36 percent higher[13] if it had received EU funds than the odds for those municipalities that had not carried out any EU projects at all.

In addition, credit repayment is also strongly and positively associated with debt consolidation, although this is a hardly surprising result because the fact that a local government engages in credit repayment shows that the municipality has debt. More interesting is the positive and significant sign for the Fidesz-mayor dummy: the odds for a municipality receiving debt consolidation are, *ceteris paribus*, 78 percent higher if it elected a Fidesz-nominated mayor in 2006 than the odds for those municipalities where the political color of the mayor was different. Given that the models control for population size, the affluence of the local government, and the presence of EU projects as well, this positive association between Fidesz mayors and the likelihood of debt consolidation seems to capture the political effect.

12 Similar to the Polish case, we logarithmically transformed all the continuous variables (total consolidated debt per capita; total EU grants per capita; balance of total project costs and grants per capita; total own revenue per capita; population size; GDP per capita) to normalize their distribution.

13 The table does not display the odds ratios.

Table 4: Summary of the results of the Hungarian regression models

	Model 5		Model 6		Model 7		Model 8		Model 9		Model 10	
	Multilevel logistic regression DV: Consolidated debt				Multilevel linear regression DV: Total consolidated debt per capita							
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	8.184**	3.512	-2.395***	.590	6.389***	1.519	5.502***	.425	4.506*	1.765	6.046***	1.592
Local-level effects												
EU project	.307***	.107	.303**	.107	-.055	0.62	-.055	.062				
Credit payment	1.566***	.090	1.564***	.090	.343***	.089	.343***	.089	.318***	.074	.327***	.077
Total EU grants per capita									.128***	.021		
Balance of costs & grants per capita											.078***	.016
Fidesz mayor (2006)	.535*	.211	.538*	.211	.561***	.078	.561***	.078	.505***	.090	.525***	.088
Total own revenue per capita	-.130*	.052	-.128*	.052	.325***	.038	.325***	.038	.362***	.043	.366***	.043
Population	.344***		.349***	.051	.133***	.035	.133***	.035	.147***	.034	.143***	.034
Regional-level effects												
GDP per capita	-1.306***	.467			-.112	.173			-.124	.194	-.231	.175
Unemployment rate			.093***	.032			.006	.014				
Central Hungary	15.818	898.783	15.342	954.407	-.447	.291	-.537***	.202	-.385	.301	-.389	.283
Random effects												
Local-level variance					1.052***	.053	1.052***	.053	.996***	.047	1.000***	.047
Regional-level variance	.404***	.086	.396***	.086	.023***	.010	.023***	.010	.027***	.012	.027***	.011
N	3174		3174		2036		2036		1570		1570	
Wald Chi-square	454.72***		454.78***		635.67***		784.17***		586.51***		592.75***	

Unstandardized coefficients, robust standard errors. *** p < .001; ** p < .01; *p < .05

However, an alternative interpretation is also possible. Settlements with Fidesz-led mayors after the 2006 elections were, on average, much bigger in size than the ones that elected independent mayors or leaders with alternative party affiliations.[14] It follows that larger municipalities meet greater demand and thus need more financial resources to fulfill their service obligations. In the times of austerity, this proves especially difficult and a potential solution to the fiscal problems could be the reliance on loans, credits, or municipal bonds. In short, it is also possible that Fidesz-led local governments became more indebted than the rest not because the local leaders wanted to undermine the fiscal policy of the central government, but precisely because the decline in the centrally distributed financial support threatened the fulfillment of their legally prescribed duties. Although this is also plausible and further research needs to clarify the causal relationship, the models, which control for population size, seem to suggest that indebtedness may have indeed involved a far from innocent political game.

Models 7 and 8 include only those 2,036 local governments which the central government bailed out. Almost a quarter of them (466 municipalities) did not receive any EU funds at all. The dependent variable in these models refers to the total per capita consolidated debt. Here, the dummy for EU projects loses significance. In other words, among those municipalities whose debt was taken over by the government, the presence of EU-funded projects is not related to the amount of per capita debt. Thus, as Model 5 and 6 revealed, debt consolidation is positively related to the presence of EU projects, but the degree of indebtedness does not depend on whether the municipality has been a beneficiary of EU grants or not. At the same time, in both Model 7 and 8, the Fidesz dummy remained positive and significant.

For our purposes, Model 9 and 10 are the most interesting ones. They include those 1,570 local governments which have been fund beneficiaries and also received debt consolidation. These two models estimated whether the degree of indebtedness (the per capita amount of total consolidated debt) is associated with the total secured EU grants per capita (Model 9) or with the per capita difference between total project costs and funding (Model 10). In both cases, the models reveal a strongly positive relationship. If all else is equal, a one percent increase in per capita EU funds is associated with a 0.128 percent increase in per capita debt; whereas a one percent increase in the per capita balance of total costs and funding yields a 0.078 rise in the dependent variable. These coefficients are strikingly similar to those obtained in the Polish models for the same explanatory factors while employing a similar dependent variable.

Even in Model 9 and 10, the Fidesz dummy preserves its positive sign and significance. Thus, in each specification we found that those municipalities that elected a Fidesz mayor in 2006 were more likely to take on debt and, on average, accumulated more per capita debt than other local governments. As we already indicated above, further research is required to explore the exact causal mechanism, but these results suggest that local debt in Hungary has probably been influenced by political factors as well.

14 The average population size of Fidesz-led settlements in 2006 was 13,524, while the same figure is 23,66 for those municipalities where the elected mayor was independent or had other party affiliation. Source: Authors' own calculations based on data from the Central Statistical Office and the National Election Office.

All things considered, the Hungarian models provided some further evidence that local government indebtedness is positively related to becoming a beneficiary of EU funds.[15] In addition, among those local governments that were both EU beneficiaries and a target of debt consolidation, the per capita amount of accumulated debt was positively related to the total per capita own resources required for co-financing EU projects. This finding suggests that success in project applications is indeed related to the level of local government indebtedness.

5. Conclusion

In this paper, we have demonstrated that the deterioration of local government finances in Eastern Europe can be partially attributed to EU funds: the co-financing requirements place a huge financial burden on local governments which are already striving to find sufficient resources for the provision of local services. In order to generate additional financial assets for development projects, they turn to capital markets and become indebted.

We have found a positive relationship between local debt and EU funds in two very different territorial-administrative settings, in Hungary and Poland. Becoming a beneficiary of EU funds seems to be associated with municipalities' debt in both cases. In addition, greater success at securing grants is likely to be related to higher levels of indebtedness. Given that Eastern European local governments are financially strongly dependent on central state transfers, this finding challenges the view that the Cohesion Policy empowers the local level. Instead, it may undermine its fiscal capacity and thus indirectly raise local dependence on the central administration.

What is more, the rise in local government debt has served as a pretext for the Hungarian government to take over much of the former responsibilities of the municipalities, thereby reducing their role in local affairs to a minimum. This is a potentially dangerous model that may find followers if right-wing parties with similar ambitions come into power in other Eastern European countries. The recent radical right turn in Polish politics is an alarming sign in this respect.

15 In terms of explanatory power, the hierarchical linear models perform well: Model 5 explains 53.8 percent of the total variation in per capita debt that is at the county (regional) level and 22.3 percent of the variation at the municipality level.

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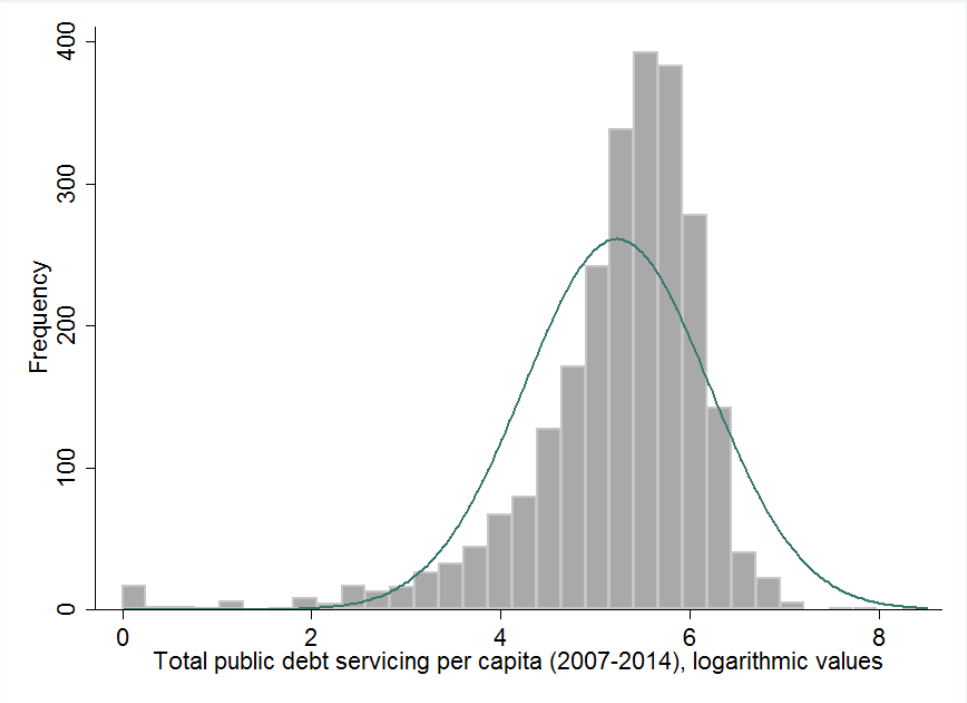
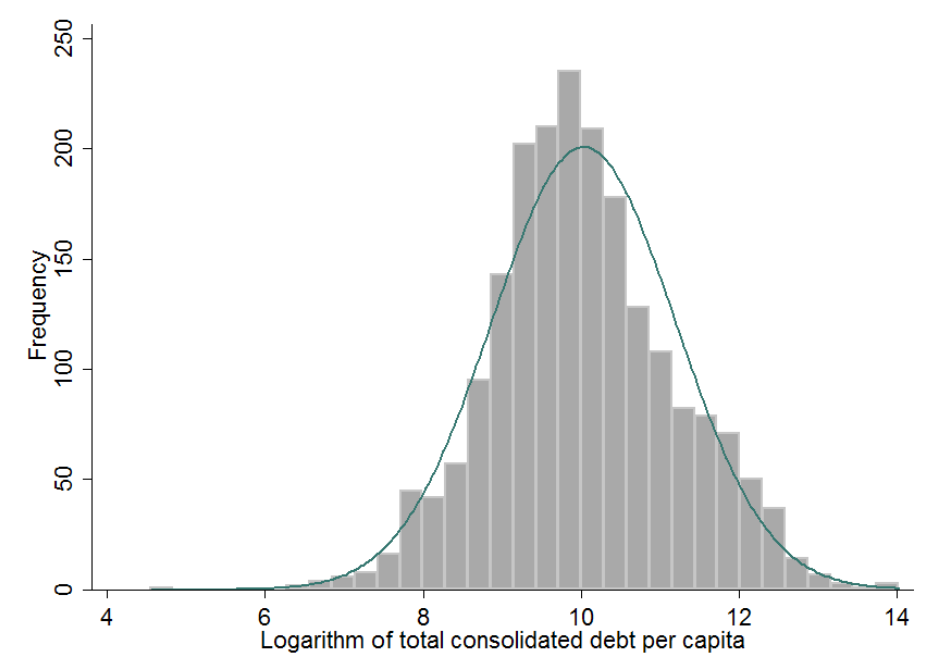
7. Appendix

Figure 1: Histogram of the Polish dependent variable – total per capita public debt servicing



Source: Authors.

Figure 2: Histogram of the Hungarian continuous dependent variable – total consolidated debt per capita



Source: Authors.

Table 5: List of continuous variables included in the Polish models – original scales

	MIN	MAX	Mean	SD
Balance of total project costs and total funding per capita in PLN (2007-15)	0	12,102	262.97	594.15
Total EU grants per capita in PLN (2007-15)	0	20,441	576.76	873.09
Total own revenue per capita in PLN(2007)	239.37	33,298	932.387	909.23
Total tax revenue per capita in PLN (2007)	72.13	18,446	384.78	445.62
Population (2007)	1,370	1,706,624	15,370	50,702
GDP per capita (2007)	20,895	49,350	29,936	8,407
Unemployment rate (2007)	5.1	10.7	7.36	1.72
Total per capita public debt servicing (2007-14) in PLN	0	4,982	255.79	204.07
Total public debt servicing as a percentage of total expenditure (2007-14)	0	4.70	1.02	.61

Source: Authors.

Table 6: Correlation coefficients of the gmina-level independent variables in the Polish models

	Balance of total EU project costs and funding per capita	Total EU grants per capita	Total own revenues per capita (2007)	Total tax revenues per capita (2007)	Population (2007)	PO mayor elected in 2006 and 2010	PSL mayor elected in 2006 and 2010
Balance of total EU project costs and funding per capita	1						
Total EU grants per capita	.87***	1					
Total own revenues per capita (2007)	.07***	-.01	1				
Total tax revenues per capita (2007)	.02	-.03	.86***	1			
Population (2007)	.21***	.08***	.43***	.21***	1		
PO mayor elected in 2006 and 2010	.09***	.06*	.11***	.05	.14***	1	
PSL mayor elected in 2006 and 2010	-.06*	-.03	-.15***	-.11***	-.13***	-.06*	1
*** p < .001; ** p < .01; *p < .05							

Table 7: List of continuous variables included in the Hungarian models – original scales

	MIN	MAX	Mean	SD
Total EU grants per capita in HUF (2004-2015)	0	5,390,930	208,933	352,565
Balance of total project costs and total funding per capita (2004-2015)	0	924,848	23,415	45,347
Total own revenue per capita in HUF (2007)	27	863,583	29,412	41,451
Population (2007)	16	206,073	3206	11,315
GDP per capita in millions of HUF (2007)	1.143	5.355	1,883	.503
Unemployment rate (2007)	2.12	13.42	8.122	3.446
Total consolidated debt per capita in HUF	0	1,233,294	46,116	78,642

Source: Authors.

Table 8: Correlation coefficients of the local-level independent variables in the Hungarian models

	EU project	Balance of total EU project costs and funding per capita	Total EU grants per capita	Credit repayment	Total credit repayment per capita (2005-2011)	Total own revenues per capita (2007)	Population (2007)	Fidesz mayor elected in 2006
EU project	1							
Balance of total EU project costs and funding per capita	n.a	1						
Total EU grants per capita	n.a	.67***	1					
Credit repayment	.22***	.06	.08***	1				
Total credit repayment per capita (2005-2011)	.04	.17***	.18***	n.a	1			
Total own revenues per capita (2007)	.28***	.18***	.14***	.22***	.12***	1		
Population (2007)	.51***	.21***	.16***	31***	-.02	.47***	1	
Fidesz mayor elected in 2006	.12***	.11	.12***	.11***	.07*	.15***	.31***	1

*** p < .001; ** p < .01; *p < .05

Source: Authors.

"Maximizing the integration capacity of the European Union: Lessons of and prospects for enlargement and beyond"

The 'big bang enlargement' of the European Union (EU) has nurtured vivid debates among both academics and practitioners about the consequences of 'an ever larger Union' for the EU's integration capacity. The research project MAXCAP will start with a critical analysis of the effects of the 2004-2007 enlargement on stability, democracy and prosperity of candidate countries, on the one hand, and the EU's institutions, on the other. We will then investigate how the EU can maximize its integration capacity for current and future enlargements. Featuring a nine-partner consortium of academic, policy, dissemination and management excellence, MAXCAP will create new and strengthen existing links within and between the academic and the policy world on matters relating to the current and future enlargement of the EU.