

Hidden Depths. The Case of Hungary

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6. Hidden Depths. The Case of Hungary¹

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This report investigates corruption risk of EU funds spending in Hungary within the framework of the Public Procurement Law. Its finding is that in spite of what is a tight regulatory framework EU funds are likely to fuel the abuse of public spending. Even though public procurement using EU funds faces considerably more stringent regulation, their use poses much greater corruption risks when compared with funds procured domestically and corruption risks are particularly pronounced for large projects. The report also argues that large-scale institutionalized corruption in Hungary may be widespread and driven primarily by political cycles. Such corruption, often labelled “legal corruption”, typically involves neither bribery nor collusion between lower level bureaucrats and private individuals; rather, it operates through contractual relationships which benefit the highest echelons of the political and business elite. There are a small number of new anti-corruption initiatives of the new government which entered office in 2010, but while they might indicate a positive step towards higher public sector integrity, their results are yet to be seen.

Introduction

Hungary scores as one of Central and Eastern Europe’s most corrupt countries according to the widely used but hotly contested Worldwide Governance Indicators² (see chapter 3 of this book) as well as when measured in the Quality of Government EU Regional Data survey (see chapter 8 of this book). Research looking at Hungarian corruption in more detail using qualitative methods or media content analysis reveals a great deal of additional evidence relating to the phenomenon’s structure and its evolution over time.

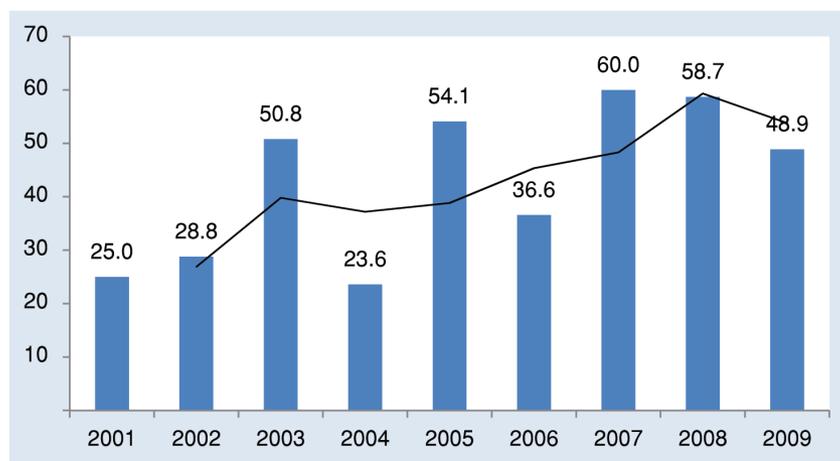
Taking the available information together, Hungary appears to be a borderline case between limited and open access orders with considerable movements or swings between these ideal types (Mungiu-Pippidi et al. 2011). There are islands of excellence in the state which exercise a great deal of autonomy from potential societal captor agents; however, those institutions are regularly contested as for example in the recurrent attacks on the Hungarian National Bank in the last decade or so.

¹ The research was made possible by support from two EU funded projects at the Corvinus University of Budapest (TAMOP 4.2.2.B and ANTICORRP: Grant agreement no: 290529) and the authors’ voluntary contributions.

² For a more detailed discussion of criticism see: Kaufmann, Kraay, & Mastruzzi, 2007; Kurtz & Schrank, 2007a, 2007b

Even though the exact path of evolution is yet to be fully documented, there is considerable evidence pointing to the increased institutionalisation of corruption in Hungary (Figure 1). Networks of private and public actors appear to have evolved for pursuing particularistic goals using public resources (Jancsics & Jávör, 2012; Szántó, Tóth, & Varga, 2012; Szántó & Tóth, 2008). A clear sign of increased institutionalisation is the emergence of the role of the ‘broker’ who sells an understanding of corrupt transactions and knowledge of actors in a wide range of sectors and institutional contexts.

Figure 1. Ratio of occurrence of multiplayer, chain-like corruption cases in the Hungarian media, 2001-2009, % (548 cases of suspected corruption).



Source: Szántó et al., 2012 p. 148.

Based on court proceedings and interview evidence, it seems that corrupt networks have reached the highest echelons of the political and business elite, and they have contributed to political election campaigns as well as benefiting individual members. Corruption has become a top priority and a frequently quoted objective in election campaigns, and corruption scandals which hit the previous government most probably contributed to the landslide victory of Fidesz in 2010.

EU funds have become the single most important source of public investment in Hungary and by now they play a major role in overall public spending. Their disbursement is certainly affected by the competing principles of particularism and universalism so strikingly present in the functioning of the Hungarian state. In order to explore further the dynamics and evolution of the governance regime of Hungary this chapter delivers preliminary **evidence on large-scale institutionalized corruption³ in EU funds spending in Hungarian public procurement based on data from 2009-2012**. We looked only at EU funding which is spent by Hungarian public and semi-public organisations (i.e. mixed public-private owned) through public procurement regulated by the Public Procurement Law. Hence, our study almost entirely covers the Cohesion Fund and much of the Structural Funds spending, but not the Common Agricultural Policy funds.

³ For a detailed discussion of large-scale or legal corruption see: Kaufmann & Vicente, 2011

Our findings come from the analysis of interviews with key individuals who have witnessed corrupt transactions and from a large database recording every public procurement procedure in Hungary which was conducted under national or EU public procurement law between 1st of January 2009 and 31st of December 2012. This database contains over 56,000 contract awards, allowing for an unprecedentedly detailed view of public spending and high-level corruption.

This analysis of a borderline governance regime occurs at the onset of a new anticorruption campaign. The Fidesz government has launched a range of policies aimed at curbing corruption in the public sector, integrated into the Corruption Prevention Program of the Public Administration launched in early 2012 (for full list of recent initiatives check the online version of this Article on www.againstcorruption.eu). While these initiatives may represent a positive step towards greater public sector integrity, results are yet to be seen. Our analysis can explore only the baseline before any of the policies could actually take serious effect, but future research employing similar methodology will be able to look into changes potentially attributable to the new initiatives.

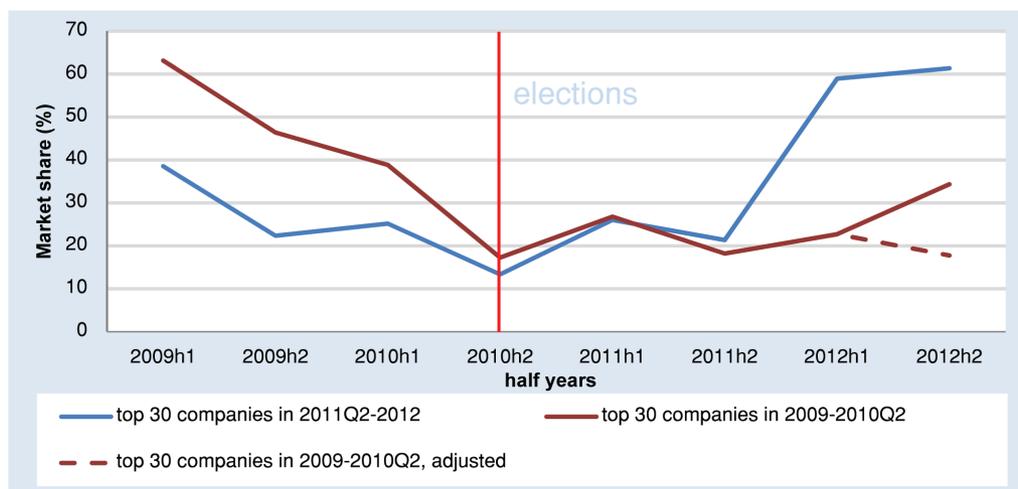
Hungary is one of the top beneficiaries of EU cohesion policies with allocated per capita spending close to 3,000 EUR for 2007-2013. However, EU funds absorption has been an issue with contracted ratio of 64% by the end of 2011 falling slightly below the Central and Eastern Europe (CEE) average of 67% (KPMG, 2012).

1. Government favouritism evidence

Change of government and the corresponding turnover of political leadership seems to drastically alter the winning chances of companies in the public procurement market, both EU- and non-EU funded. In interviews, top managers of large construction, IT, and health care companies supplying public organisations all supported the view that the swings in market shares of companies reflect the changing preferences of the political leadership for particular well-connected companies. According to this interpretation, success in the public procurement market depends much more on political connections than on the competitiveness of companies, implying a predominantly particularistic allocation of public resources. Such corruption, often described as “legal corruption”, typically does not involve bribery nor collusion between lower level bureaucrats and private individuals; rather, it operates through contractual relationships benefiting the highest echelons of the political and business elite (Kaufmann & Vicente, 2005).

Such claims are demonstrated by tracking the changes in market shares of the largest companies before and after the new government entered office (**Figure 2**), but they are also underpinned by regression analysis looking at the whole public procurement market financed from EU funds (Annex 1). **Figure 2** amply demonstrates that the companies with the largest market share throughout the one and a half years leading up to the elections in the first half of 2010 lost about 25-30% of their combined market share. This change was accompanied by a comparable increase in the total market share of companies dominating the post-election market between the second half of 2011 and 2012 (the one year period between 2010H2 and 2011H1 was excluded as it was a transitory period between the two governments).

Figure 2. Changes in market shares of the top 30 firms of 2009-2010H1 and of 2010H2-2012, EU funded construction projects, 2009-2012 (%)⁴



Source: MaKAB

Note: market share of company *i* in time *t* = total value of contracts won by company *i* in EU funded construction in time *t* / total value of contracts won in EU funded construction in time *t*

One of our previous reports found similar patterns throughout the public procurement market, albeit the magnitude of seemingly politically driven spending is comparatively greater for EU-funded contracts (Fazekas & Tóth, 2013). Regression analysis in Annex 1 supports the same conclusions while looking at the entire EU-funded public procurement market and taking into account the effects of companies' main market size, company size, amount of prior capital investment, location of headquarters, and profit margin.

Thus, based on the available evidence, it is likely that at least 25-30% of EU-funded construction spending is driven directly by politics in Hungary, but it is conceivable that the proportion is as high as 80-90%, for several interviewees suggested that contracts going to the opposite political camp's companies function as "payment" for future contracts for companies whose political connections currently hold the power, but might lose it in the future. Evidence to date indicates that large-scale institutionalized corruption is widespread in Hungary.

2. EU funds spending compared to national public procurement

When comparing public procurement contracts financed from EU funds to those without any EU sources on some elementary corruption risk indicators⁵, EU funds perform considerably worse than national funds. This underpins the claim that EU funds fuel the abuse of public spending in spite of a tight regulatory framework.

⁴ It is possible to adjust the combined market share of the top 30 companies of 2009-2010H1 in 2012H2 because the figure is highly upwards-distorted by a single highway construction contract. In addition, interview evidence points to strong political involvement in the management of that contract award procedure.

⁵ For a full discussion of these and further indicators see: Fazekas, Tóth, & King, 2012

33.8% of contracts awarded for projects financed by EU funds throughout 2009-2012 received only one bid as opposed to 29% of contracts financed from purely national funds (**Table 1**). This implies that in spite of strong support for effective competition, a third of EU funds spending by Hungarian authorities through public procurement is conducted with no competition whatsoever. Modifying contracts after contract award is also much more frequent with EU-funded projects than nationally funded ones (17.7% and 6.5% respectively), a surprising difference as contract modifications are allowed only in a few unforeseen situations such as extremely bad weather or unusually high exchange rate fluctuations. As contract modifications allow for pushing the prices up and quality down after the competitive contract award process ends, we may suspect that EU funds are much more prone to corrupt rent extraction. Interview evidence supports this interpretation, pointing out the lack of incentives for contracting parties (i.e. issuers of tenders and contract winners) to reveal corruption as it would imply that funding is returned to the national EU funding disbursement agency, i.e. loss of external funding for both parties.

Regression results underline that such differences between contracts awarded for projects with and without EU funding cannot be attributed to some obvious alternative explanation such as contract size, market of spending, or type of issuer (Results of regressions on the differences between EU funded and nationally financed public procurement contracts are available in the online version of this Article on www.againstcorruption.eu).

Table 1. Selected corruption risk indicators of public procurement contract awards with and without EU funds (2009-2012)

Period	2009		2010		2011		2012		Total 2009-2012	
	Public procurement contracts using EU funds?		Public procurement contracts using EU funds?		Public procurement contracts using EU funds?		Public procurement contracts using EU funds?		Public procurement contracts using EU funds?	
	NO	YES								
single bidder	30.9%	40.2%	30.6%	43.4%	25.7%	28.0%	28.1%	24.9%	29.0%	33.8%
non-open procedure	43.5%	39.7%	32.9%	32.2%	36.9%	36.6%	45.4%	56.9%	39.2%	40.9%
no call for tenders in Official Journal	48.7%	38.9%	25.4%	23.8%	56.2%	66.5%	55.2%	73.5%	44.7%	50.9%
accelerated submission deadline (<21 days)	17.7%	20.8%	26.5%	28.4%	24.0%	40.7%	19.9%	26.4%	23.2%	29.2%
extremely short submission deadline (<12 days)	2.7%	3.1%	2.3%	1.9%	2.3%	3.5%	2.6%	3.4%	2.4%	2.6%
contract modification	4.6%	16.2%	9.8%	25.4%	8.0%	22.0%	2.5%	4.6%	6.5%	17.7%
assessment criteria contains non-price elements	47.2%	52.0%	48.4%	64.3%	35.8%	40.4%	34.0%	34.1%	41.8%	48.0%
Total N	7,711	3,144	11,019	6,467	8,148	5,904	8,514	5,340	35,392	20,855

Source: MaKAB

Note: differences deemed substantive are highlighted in grey.

The most striking characteristic of these corruption risk indicators, called ‘irregularities’ by the European Court of Auditors (European Court of Auditors, 2012), is that they are not irregular nor are they random. They are particularly high for those companies whose market share appears to be driven by the political cycle as identified in the previous section and in Annex 1. This can be interpreted as meaning that those companies which win public procurement contracts funded by the EU with the help of their political connections tend to win under conditions prone to corruption. The point is well demonstrated in the differences among companies which perform according to what a standard economic logic would predict and those which considerably under- or over-perform compared to a pure economic model⁶ (Table 2).

For example, companies under- or over-performing are 2 to 3 times more likely to experience contract modification after their contract has been approved than those which perform according to a standard economic logic. But differences are similarly striking in the frequency of accelerated and extremely short submission deadlines.

Table 2. Selected corruption risk indicators according to company groups, EU funded public procurement, 2011

	single bidder	non-open procedure	no call for tenders in Official Journal	accelerated submission deadline (<21 days)	extremely short submission deadline (<12 days)	contract modification	assessment criteria contains non-price elements
under-performers	24.6%	37.1%	58.5%	42.0%	6.4%	33.5%	49.3%
in line with econ. predictions	22.9%	28.2%	45.0%	36.2%	0.4%	11.4%	39.2%
over-performers	27.3%	34.3%	52.2%	41.1%	2.7%	23.7%	48.0%

Source: MaKAB
Note: N=266

All this evidence underpins the hypothesis that EU funds represent much higher corruption risks than spending of Hungarian funds in spite of considerably more stringent regulation. As corruption risks are particularly pronounced for large projects and for companies dependent on their political connections for winning contracts, EU funds-related corruption is most probably driven by national politics. Our findings are confirmed by data from the previous and the current governments; that is the whole period of 2009-2012, pointing to the potentially systemic nature of corruption in post-communist Hungary.

⁶ Under-performance is defined as large negative error in the regression of Annex 1 taking into account standard economic variables determining market performance, while over-performance is large positive error in the same regressions. Those companies which have regression error close to zero are deemed as performing according to what is expected.

Recommendations

In order for the EU and Hungary to combat corruption in EU funds spending and to avoid waste of public resources they might consider the following:

- *Ensure effective transparency and active access to information on public procurement*

Timely information provision in a format readily comprehensible and at a location easily accessible is the only way to fight corruption; in other words through transparency. Information which is outdated, barely comprehensible to non-experts, and accessible only after a large investment of time and effort helps fighting corruption little more than no transparency at all.

- *Close loopholes in public procurement regulation.*

Exceptions, emergency regulations, and minimum thresholds are abused far too often. By closing those routes and ensuring a minimum level of transparency for the currently loosely regulated purchases would make hiding corruption much more difficult.

- *Review the quality of outcomes and prices of inputs rather than the procedures of spending.*

The current administrative framework focuses largely on procedural and financial compliance, which makes the administration of EU funded projects costly while achieving little in preventing corruption. Refocusing audits or reviews on the quality of outcomes and the price of inputs might work better in revealing and so curbing corruption.

References

- European Court of Auditors. (2012). *Annual Report on the Implementation of the Budget concerning financial year 2011*. Brussels.
- Fazekas, M., & Tóth, I. J. (2013). *Political Influence in the Public Procurement Market? Analysis of market share 2009-2011 – preliminary results*. Corruption Research Centre, Budapest.
- Fazekas, M., Tóth, I. J., & King, L. P. (2012). When government serves the interests of the few: Corruption and state capacity in Hungarian public organisations. *Hungarian Economic Association: Annual Conference 2012*. Budapest: Hungarian Economic Association.
- Jancsics, D., & Jávör, I. (2012). Corrupt Governmental Networks. *International Public Management Journal*, 15(1), 62–99. doi:10.1080/10967494.2012.684019
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2007). Growth and Governance: A Reply. *The Journal of Politics*, 69(2), 555–562.
- Kaufmann, D., & Vicente, P. C. (2005). *Legal Corruption*.
- Kaufmann, D., & Vicente, P. D. (2011). Legal Corruption. *Economics & Politics*, 23(2), 195–219. doi:10.1111/j.1468-0343.2010.00377.x
- KPMG. (2012). *EU Funds in Central and Eastern Europe. 2011*. Warsaw, Poland: KPMG.
- Kurtz, M. J., & Schrank, A. (2007a). Growth and Governance: Models, Measures, and Mechanisms. *The Journal of Politics*, 69(2), 538–554.
- Kurtz, M. J., & Schrank, A. (2007b). Growth and Governance: A Defense. *Journal of Politics*, 69(2), 563–569.

- Mungiu-Pippidi, A. et al. (2011). *Contextual Choices in Fighting Corruption: Lessons Learned*. Oslo: Norwegian Agency for Development Cooperation.
- Szántó, Z., & Tóth, I. J. (2008). Business corruption in Hungary: From various angles Research summary. Trento.
- Szántó, Z., Tóth, I. J., & Varga, S. (2012). The social and institutional structure of corruption: some typical network configurations of corruption transactions in Hungary. In B. Vedres & M. Scotti (Eds.), *Networks in Social Policy Problems*. Cambridge, UK: Cambridge University Press.

Annex A: Anti-Corruption Initiatives of Hungarian Government

Briefing (in Hungarian):

<http://www.kormany.hu/hu/gyik/osszefoglalo-a-kormany-korrupcioellenes-intezkedeseirol>

September 2010.

Hungary joined the International Anti Corruption Academy (IACA).

The government has strengthened the Department of Public Prosecution. The government has founded the anti-corruption working group into Department of Public Prosecution and added more than 3 billion HUF (10 million EUR) to his budget in 2011.

December 9 2010.

Anti-Corruption Measures of Hungarian Government in 2010

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/government-measures-to-combat-corruption-summary-for-world-anti-corruption-day-9-december>

November 18 2011.

Deputy Prime Minister Tibor Navracsics signs anti-corruption cooperation agreement with President of the State Audit Office of Hungary, the President of the Supreme Court of Hungary and the Chief Prosecutor

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/deputy-prime-minister-tibor-navracsics-signs-anti-corruption-cooperation-agreement-with-president-of-the-state-audit-office-of-hungary-the-president-of-the-supreme-court-of-hungary-and-the-chief-prosecutor>

January 2012.

The government has published by internet the first draft of his anti-corruption plan (in Hungarian):

http://www.kormany.hu/download/e/da/70000/korrupcio_megelozes_program_v1_01.pdf

March 28 2012.

The government has adopted its “Two-year programme on preventing corruption in central government institutions”

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/govt-launches-2-year-anti-graft-programme>

April 6 2012.

Government decision on anti-corruption measures and programme for preventing corruption in central government institutions (Official Journal of Hungary, in Hungarian), Government Decision 1104/2012 (IV. 6.)

<http://kozlony.magyarorszag.hu/pdf/12506>

April 16 2012.

Hungary is joining the international Open Government Declaration

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/open-government-declaration-a-major-step-in-the-fight-against-corruption>

June 28 2012.

Parliament has passed the New Penal Code (law no. C/2012 [VI. 25]). More stringent rules to sanction crimes of corruption

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/parliament-has-passed-the-new-penal-code>

July 5 2012.

Hungary declares its intention to join the Open Government Partnership

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/another-anti-corruption-measure-hungary-declares-its-intention-to-join-the-open-government-partnership>

October 8 2012.

On-the-job training programmes for public service workers in the Public Administration Development Programme. The future training courses will contain knowledge on ethical norms specific to the profession and a methodology for recognising phenomena or evidence of corruption.

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/on-the-job-training-of-public-service-workers-also-forms-part-of-public-administration-reform>

December 17 2012.

Civil society organisations are also participating in the anti-corruption working group

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/civil-society-organisations-are-also-participating-in-the-anti-corruption-working-group>

January 22 2013.

The Ministry of Public Administration and Justice prepared a Green Book laying down ethical guidelines for state agencies. The document serves as an occupational code of ethics under the auspices of the Government's fight against corruption.

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/social-consultation-to-begin-on-ethical-guidelines-in-the-public-sector>

January 24 2013.

The Ministry of Public Administration and Justice prepared an Action Plan that contains the undertakings in conjunction with accession to the Open Government Partnership (OGP).

Press release:

<http://www.kormany.hu/en/ministry-of-public-administration-and-justice/news/action-plan-in-the-making-regarding-undertakings-of-accession-to-open-government-partnership>

February 25 2013.

Government Decree (50/2013. [II.25]) on the Integrity Structure in Public Administration and the Regulation of Meetings with Lobbyists

See:

<http://www.magyarokzlony.hu/pdf/16226>

Annex B: Regression results

B1. Results of regressions on change in total contract value

Multilevel modelling results for individual companies' change in total contract value before and after the change of government are reported. Our analytical approach is similar to Goldman, Eitan, Jörg Rocholl, and Jongil So. 2013¹ looking at US data. We estimated the coefficients using the following system of equations:

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{ij} + r_{ij} \quad (1)$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01} Z_{0j} + u_{0j} \quad (2)$$

where Y_{ij} is the logarithm of the difference of total contract value won in 2009 and 2011 by the i th company which operates on j th public procurement market², β_{0j} is the constant characterising the j th market, X_{ij} is the characteristics matrix of the i th company operating on the j th market encompassing characteristics such as county of company headquarters, log employment (2009), log turnover (2009), log capital expenditure (2009), and profit margin (2009), r_{ij} stands for the regression error of the company level regressions (first level regressions), γ_{00} is the constant of the market level regressions (second level regressions), Z_{0j} represents the vector characterising the j th market that is market concentration (Hirschman-Herfindahl Index (2009)), and u_{0j} is the error term of the market level regressions.

¹ See Goldman, Eitan, Jörg Rocholl, and Jongil So. 2013. "Politically Connected Boards of Directors and The Allocation of Procurement Contracts." Review of Finance, January.

² We carried out the logarithmic transformation of the change in contract value according to Goldman et al.: when the difference was positive, we took its logarithm; if it was negative (in 2009 the contracted amount was higher than in 2011) we calculated its absolute value, then took its logarithm, and the resulting value was multiplied by minus one. There were no differences in contract values falling between -1 and +1.

Table 3. Multilevel regression results

<i>Mixed-effects ML regression</i>		<i>Number of obs</i>	=	1847
<i>Group variable: fő piac</i>		<i>Number of groups</i>	=	23
		<i>Obs per group:</i>		
		<i>min</i>	=	6
		<i>avg</i>	=	80.3
		<i>max</i>	=	823
$R^2 =$	0.0886	<i>Wald chi2(22)</i>	=	221.95
<i>Log likelihood =</i>	-7149.62	<i>Prob > chi2</i>	=	0.000
Dependent var.: log(D. total contr. v. Coef.	Std. Err.	z	P> z 	95% Conf. Interval
county of company headquarters				
Borsod-Abaúj-Zemplén megye	0.37	1.85	0.20	0.84 -3.25 4.00
Budapest	-0.16	1.59	-0.10	0.92 -3.28 2.96
Bács-Kiskun megye	-0.64	1.94	-0.33	0.74 -4.44 3.16
Békés megye	-2.33	2.12	-1.10	0.27 -6.49 1.83
Csongrád megye	-1.58	1.95	-0.81	0.42 -5.40 2.24
Fejér megye	-2.69	2.27	-1.18	0.24 -7.14 1.76
Győr-Sopron-Moson megye	0.25	2.03	0.12	0.90 -3.74 4.23
Hajdú-Bihar megye	1.99	1.87	1.06	0.29 -1.68 5.66
Heves megye	-4.93	2.49	-1.98	0.05 -9.81 -0.05
Jász-Nagykun-Szolnok megye	1.27	2.28	0.56	0.58 -3.20 5.75
Komárom-Esztergom megye	0.75	2.39	0.32	0.75 -3.92 5.43
Nógrád megye	-1.14	3.34	-0.34	0.73 -7.70 5.41
Pest megye	1.16	1.77	0.66	0.51 -2.30 4.63
Somogy megye	1.63	2.48	0.66	0.51 -3.24 6.49
Szabolcs-Szatmár-Bereg megye	-1.31	1.90	-0.69	0.49 -5.04 2.42
Tolna megye	1.30	2.69	0.48	0.63 -3.97 6.56
Vas megye	3.53	2.27	1.55	0.12 -0.92 7.98
Veszprém megye	-0.89	2.14	-0.42	0.68 -5.09 3.31
Zala megye	-1.11	2.12	-0.52	0.60 -5.26 3.04
log employment (2009)	-0.23	0.35	-0.67	0.50 -0.91 0.45
log turnover (2009)	-2.20	0.30	-7.27	0.00 -2.80 -1.61
log capital expenditure (2009)	0.21	0.16	1.25	0.21 -0.12 0.53
profitmargin (2009)	0.01	0.02	0.30	0.76 -0.04 0.06
main market HHI	8.81	4.62	1.91	0.06 -0.25 17.87
constant	37.82	3.30	11.46	0.00 31.35 44.28
Random-effect parameters	Estimate	Std. Err.		95% Conf. Interval
var(main market constant)	5.93	2.74		2.40 14.66
var(Residual)	133.16	4.40		124.81 142.08
LR test vs. linear regression: $\text{chibar2}(01) =$	40.08			Prob >= $\text{chibar2} = 0.00$

Source: MaKAB

B2. Results of regressions on the differences between EU funded and nationally financed public procurement contracts

Binary logistic regression results explaining whether a contract is financed by EU funds or not are reported below. We estimated the following equations:

$$\Pr(\text{EU funded contract}_i = 1) = \quad (3)$$

$$Z_i = \beta_0 + \beta_{1j} X_{ij} + \beta_{2k} Y_{ik} + \varepsilon_i \quad (4)$$

where EU funded contract_i equals 1 if the *i*th contract awarded was partially or fully financed by EU funds and 0 if not; Z_i represents the logit of a contract being financed from EU funds; β_0 is the constant of the regression; X_{ij} is the matrix of *j* corruption risk indicators for the *i*th contract such as single bidder, non-open procedure, assessment criteria containing non-price elements, contract modification, and submission period category; Y_{ik} stands for the matrix of *k* control variables for the *i*th contract such as year, type of issuer, market of the contract, and size of the contract; ε_i is the error term; and β_{1j} and β_{2k} represent the vectors of coefficients for explanatory and control variables.

Table 4. Binary logistic regression results

N=27,165 % correct=74.6	dep.var:EU funded/non-EU funded contract				
	B	Exp(B)	S.E.	Wald	Sig.
single bidder	0.378	1.46	0.033	130.979	0.000
non-open procedure	0.126	1.134	0.037	11.452	0.001
assessment criteria contains non-price elements	0.204	1.226	0.031	41.825	0.000
contract modified	0.763	2.146	0.04	361.178	0.000
<i>standard submission period (>21 days)</i>				7.703	0.021
accelerated submission deadline (<21 days)	0.081	1.084	0.035	5.227	0.022
extremely short submission deadline (<12 days)	-0.127	0.881	0.096	1.722	0.189
<i>year=2009</i>				21.977	0.000
=2010	0.152	1.165	0.042	13.341	0.000
=2011	0.181	1.199	0.05	13.271	0.000
=2012	0.225	1.253	0.053	17.925	0.000
<i>type of issuer=national</i>				988.649	0.000
=utility	-2.445	0.087	0.138	314.383	0.000
=regional/local	0.222	1.248	0.04	30.563	0.000
=supported agency	1.704	5.495	0.123	190.543	0.000
=body est. by public law	-0.806	0.447	0.058	190.463	0.000
other	-0.306	0.737	0.061	25.109	0.000
missing	-0.78	0.458	0.096	66.341	0.000
<i>market of contract=agriculture&mining</i>				2136.46	0.000
=oil	-4.444	0.012	0.342	169.154	0.000
=food	-2.099	0.123	0.073	832.418	0.000
=clothing	-2.274	0.103	0.314	52.322	0.000
=office&electrical machinery&telecoms	-0.279	0.757	0.066	17.881	0.000
=medical&laboratory	-1.169	0.311	0.065	322.967	0.000
=transport	-1.686	0.185	0.132	162.747	0.000
=defence&security	0.018	1.018	0.223	0.007	0.935
=construction	-0.567	0.567	0.054	108.409	0.000
=IT	-0.428	0.652	0.109	15.454	0.000
=maintenance	-4.191	0.015	0.362	134.002	0.000
=other services	0.975	2.651	0.094	107.865	0.000
=real estate, finance	-2.198	0.111	0.152	208.44	0.000
=recreation, sports	-0.406	0.666	0.117	11.983	0.001
=utilities&cleaning	-3.687	0.025	0.234	247.474	0.000
=other	-1.158	0.314	0.118	95.481	0.000
log(contract value)	0.246	1.279	0.009	804.627	0.000
constant	-4.327	0.013	0.149	839.494	0.000

Source: MaKAB