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UNIVERSITY OF
CAMBRIDGE
Department of Sociology

Three indicators of institutionalised grand corruption using administrative data

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Blueprint for measuring institutionalised grand corruption in PP

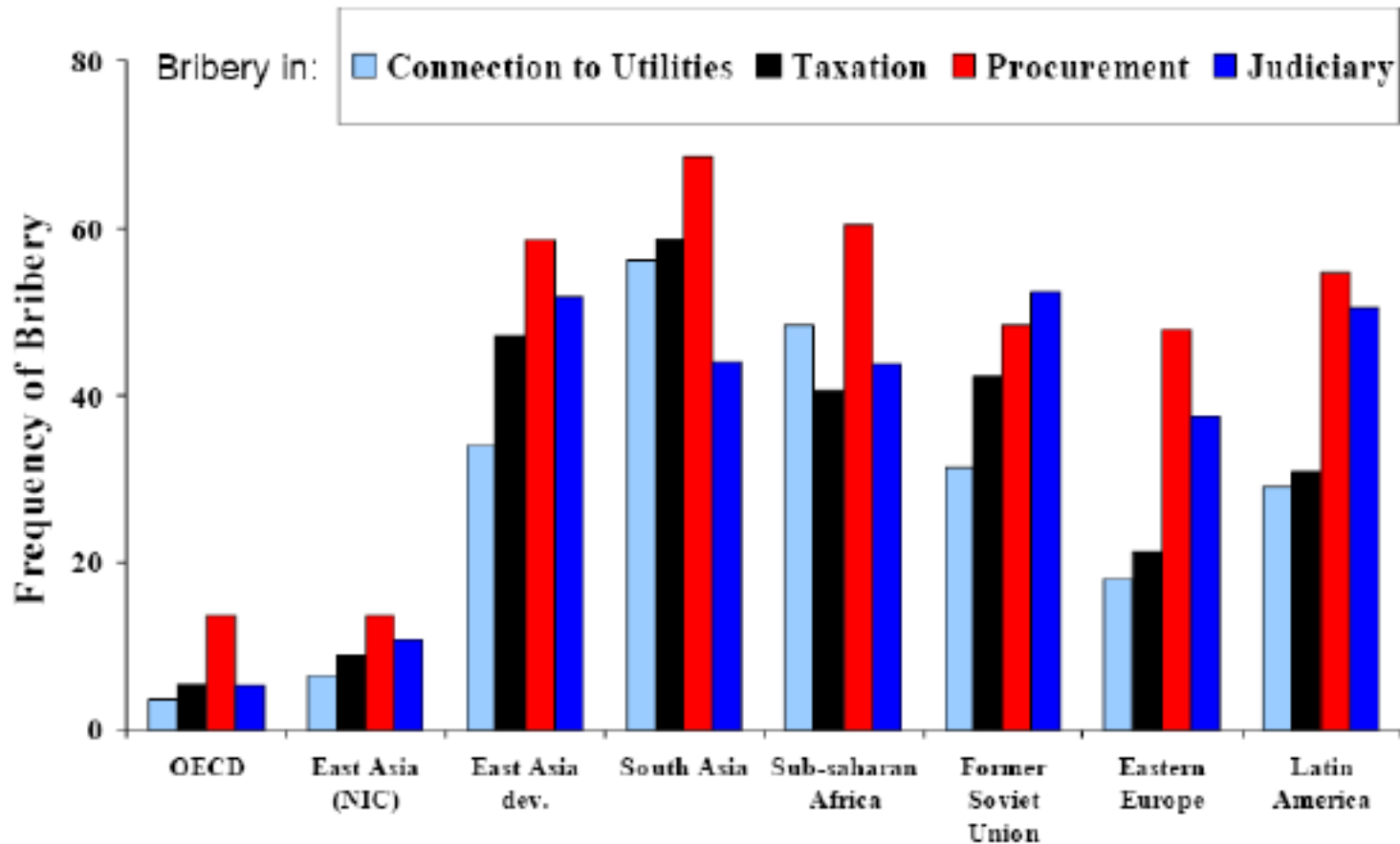
1. Corruption Risk Index (CRI): generation and allocation of rents
2. Political Influence Indicator (PII): political influence on companies' market success
3. Political Control Indicator (PCI): direct political control of contractors

Why public procurement?

1. A lot of money involved
2. Crucial role in development (e.g. capital accumulation)
3. Indicates the broader quality of institutions

Why public procurement?

4. Very corrupt



What is measured?

- Institutionalised grand corruption in public procurement
 - Institutionalised=recurrent, stable
 - Grand=high-level politics and business
 - Corruption=particularism and restricted access

A unique measurement approach

- Need for new indicators harnessing BIG DATA
- Indicator characteristics:
 - Real-time
 - ‘Objective’/hard
 - Micro-level
 - Comparative
 - Thorough understanding of context

The data template

- Public procurement data
- Company financial and registry data
- Political officeholder data
- Company ownership and management data

Feasibility across the globe

- Transition economies: HU, CZ,SK
 - Already done
- Developed/emerging economies
 - EU, US,
 - Russia, Chile, Brazil
- Developing countries
 - Development agencies' procurement announcements: e.g. <http://www.devbusiness.com/Default.aspx>
 - National portals: Georgia: <http://tendermonitor.ge/en>

Corruption Risk Index (CRI)

- Probability of institutionalised grand corruption to occur

$$0 \leq CRI^t \leq 1$$

where 0=minimal corruption risk; 1=maximal observed corruption risk

- Composite indicator of 13 elementary risk (CI) indicators

$$CRI^t = \sum_j w_j * CI_j^t$$

CRI construction

1. Wide set of potential components: 30 CIs
2. Narrowing down the list to the relevant components: 13 CIs
 - Set of regressions on single bidder and winner contract share
3. CRI calculation: determining weights
 - Stronger predictor → higher weight
 - Norming to 0-1 band

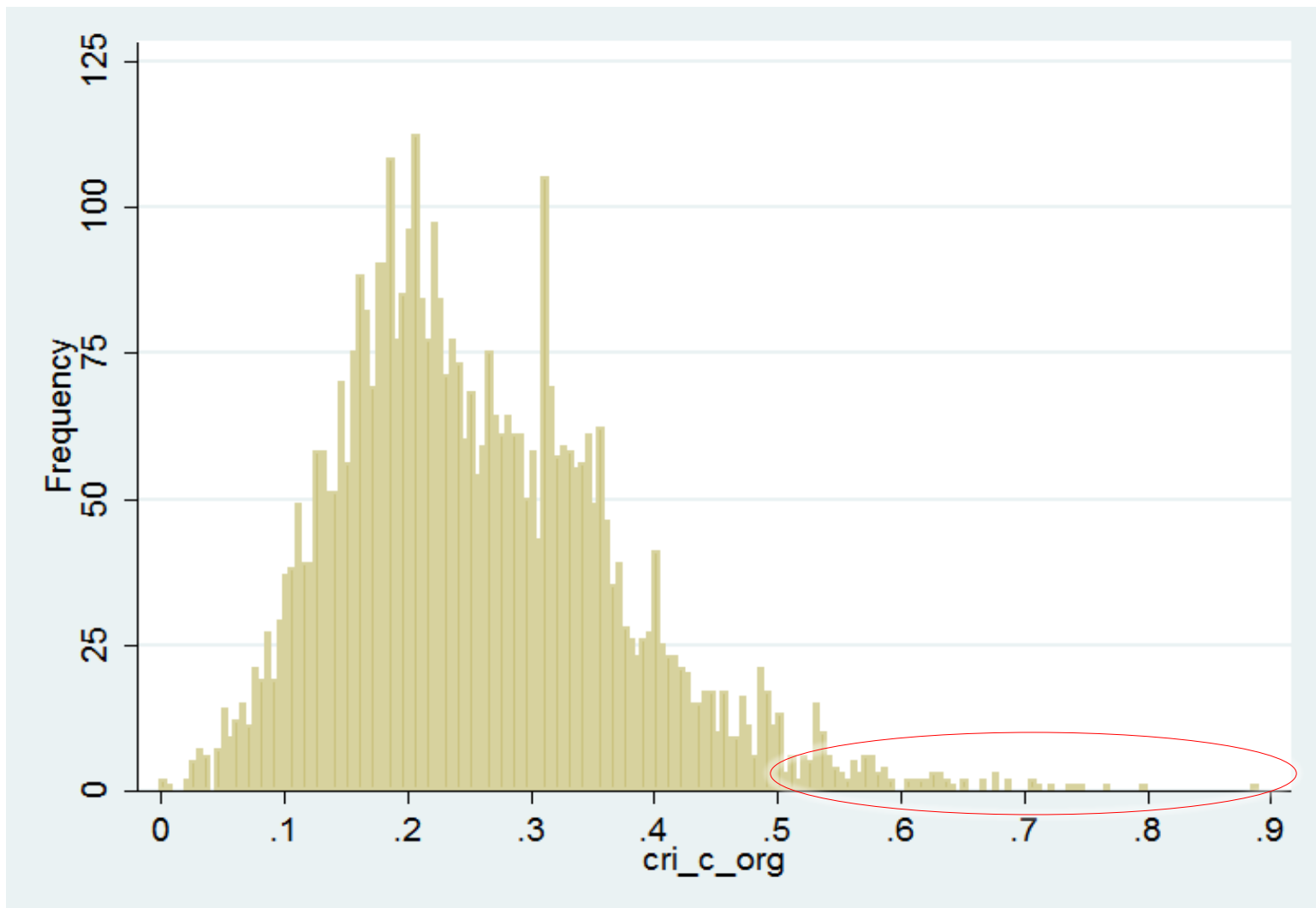
What kind of CRI distributions arise?

average
CRI

Per
winning
bidder

2009-
2012

Hungary



Political Influence Indicator (PII)

- Whether a company's market success depends on the political group in power

$$\text{PII} = \begin{cases} 1, & \text{if company is dependent on gov't} \\ 0, & \text{if company is NOT dependent on gov't} \end{cases}$$

PII construction

1. Baseline regressions

- Explaining contract volume: BEFORE-AFTER gov't change

2. Benchmark regressions

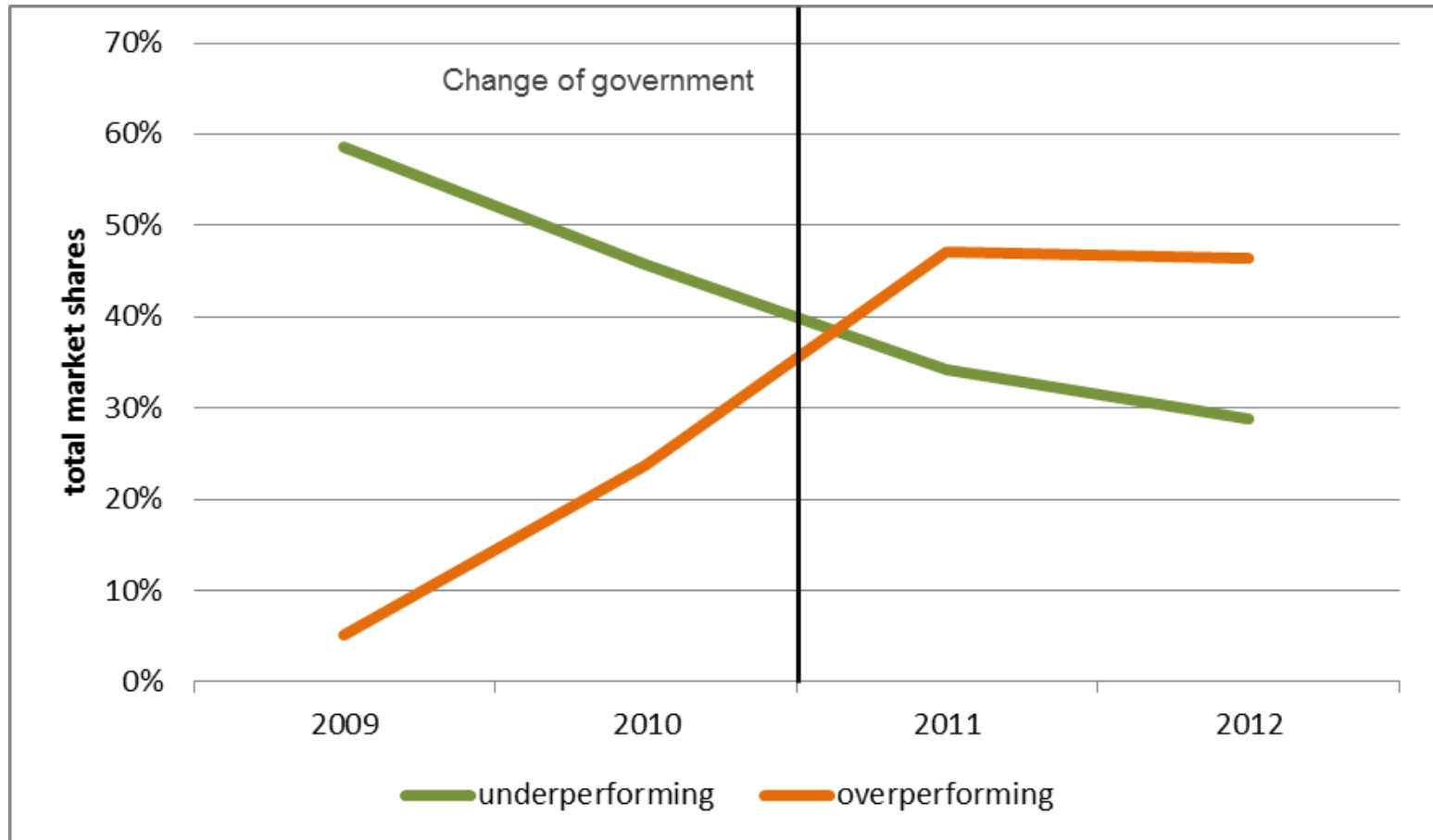
- Same regressions as in 1), but for periods WITHOUT gov't change

3. Marking companies

- Significant and substantial differences between 1) and 2)

How does this look in practice?

Hungary, total public procurement market, 2009-2012



Political Control Indicator (PCI)

- Whether a company has direct political connections

$$\text{PCI} = \begin{cases} 1, & \text{if company has pol. connections} \\ 0, & \text{if company does NOT have pol. conn.} \end{cases}$$

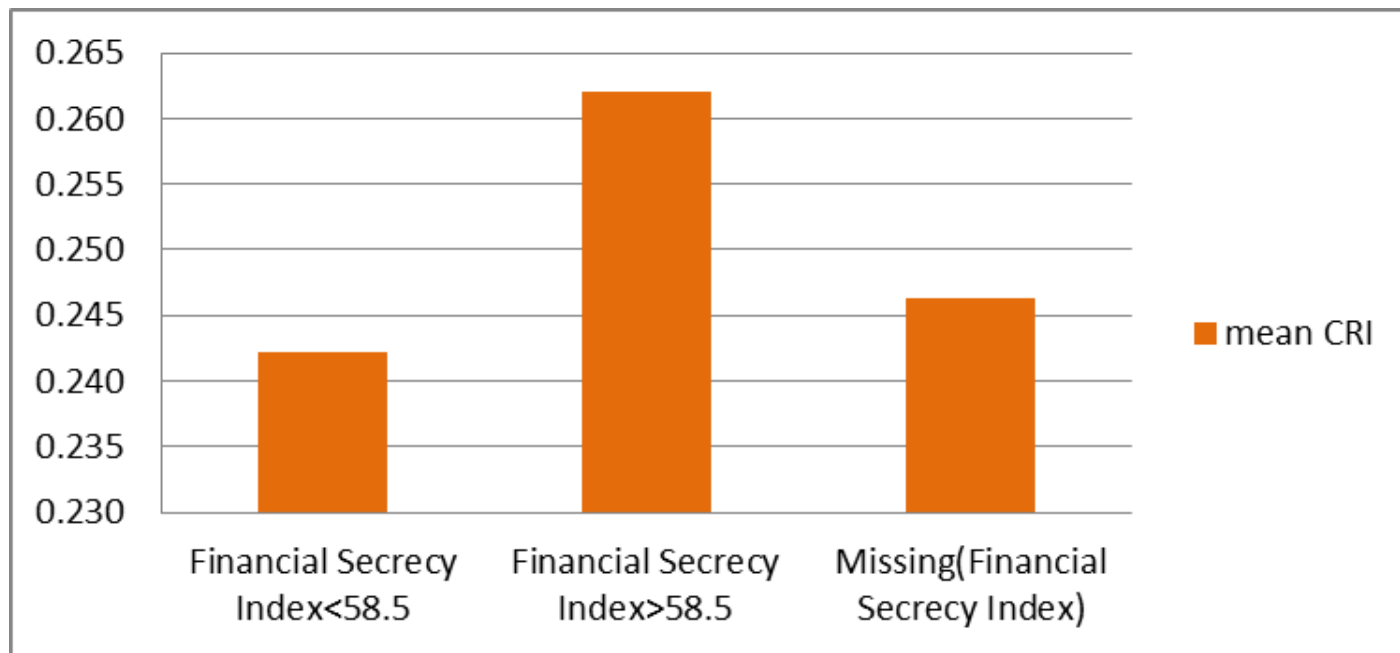
Indicator validity 1.

- Our corruption indicators co-vary
- For example: CRI + PCI

Group	N	Mean CRI	Std. Err.	Std. Dev.	95% Conf.Interval	
PCI=0 (no political connection)	2687	0.254	0.002	0.113	0.250	0.258
PCI=1 (politically connected)	1318	0.264	0.003	0.112	0.258	0.270
combined	4005	0.257	0.002	0.113	0.254	0.261
difference [CRI(PCI=1)-CRI(PCI=0)]		0.010***	0.004		0.017	0.003

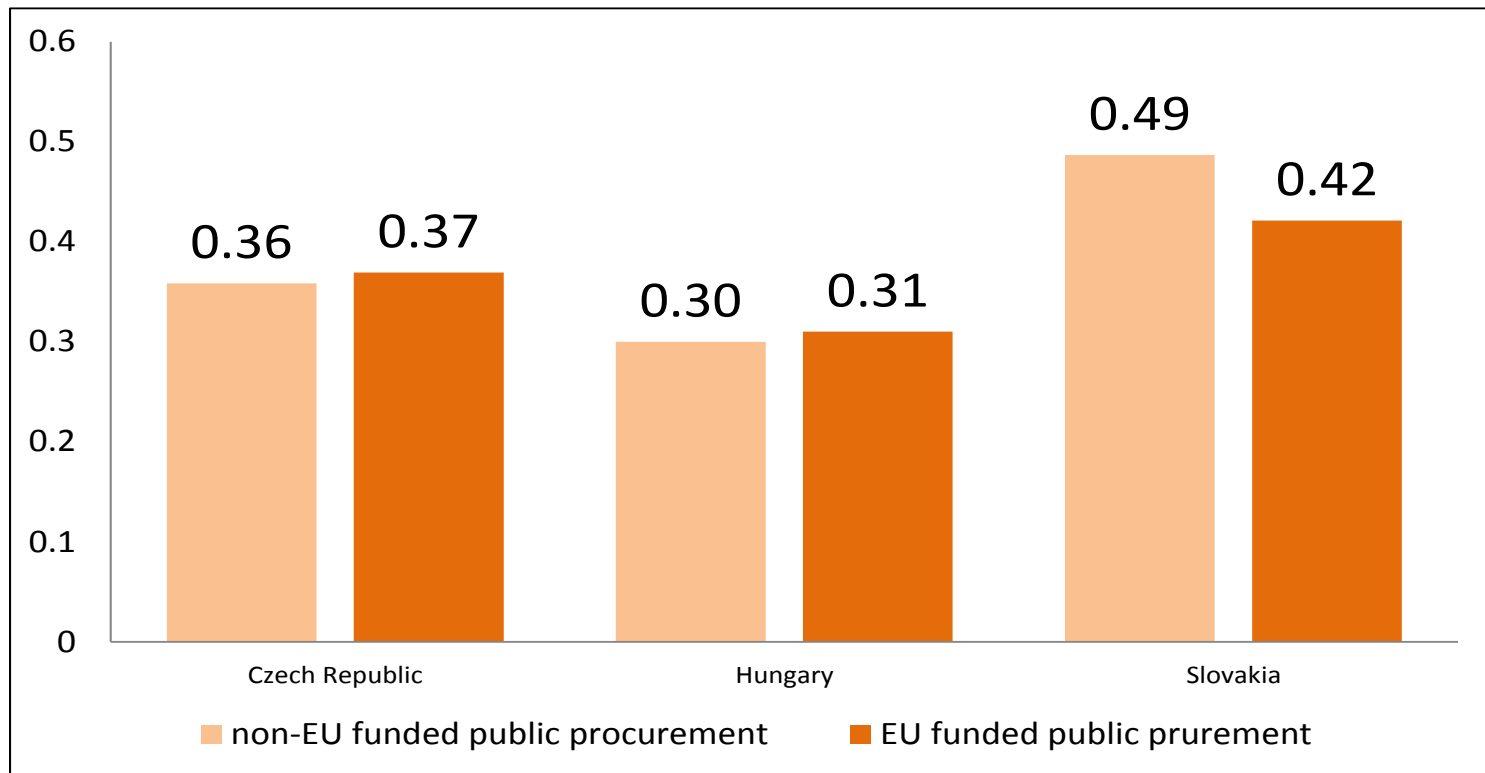
Indicator validity 2.

- Our indicators relate to external variables as expected
- For example, FSI + CRI



Policy evaluation

- Myriad of potentialities
- For example, EU structural funds' impact on corruption in CEE



Looking forward to your questions!

Further information about this approach

Corruption Research Center Budapest: www.crcb.eu

Published material:

Fazekas, M., Tóth, I. J., & King, L. P. (2013). Anatomy of grand corruption: A composite corruption risk index based on objective data. CRC-WP/2013:02, Budapest: Corruption Research Centre.

Fazekas, M., Tóth, I. J., & King, L. P. (2013). Corruption manual for beginners: Inventory of elementary “corruption techniques” in public procurement using the case of Hungary. CRC-WP/2013:01, Corruption Research Centre, Budapest.

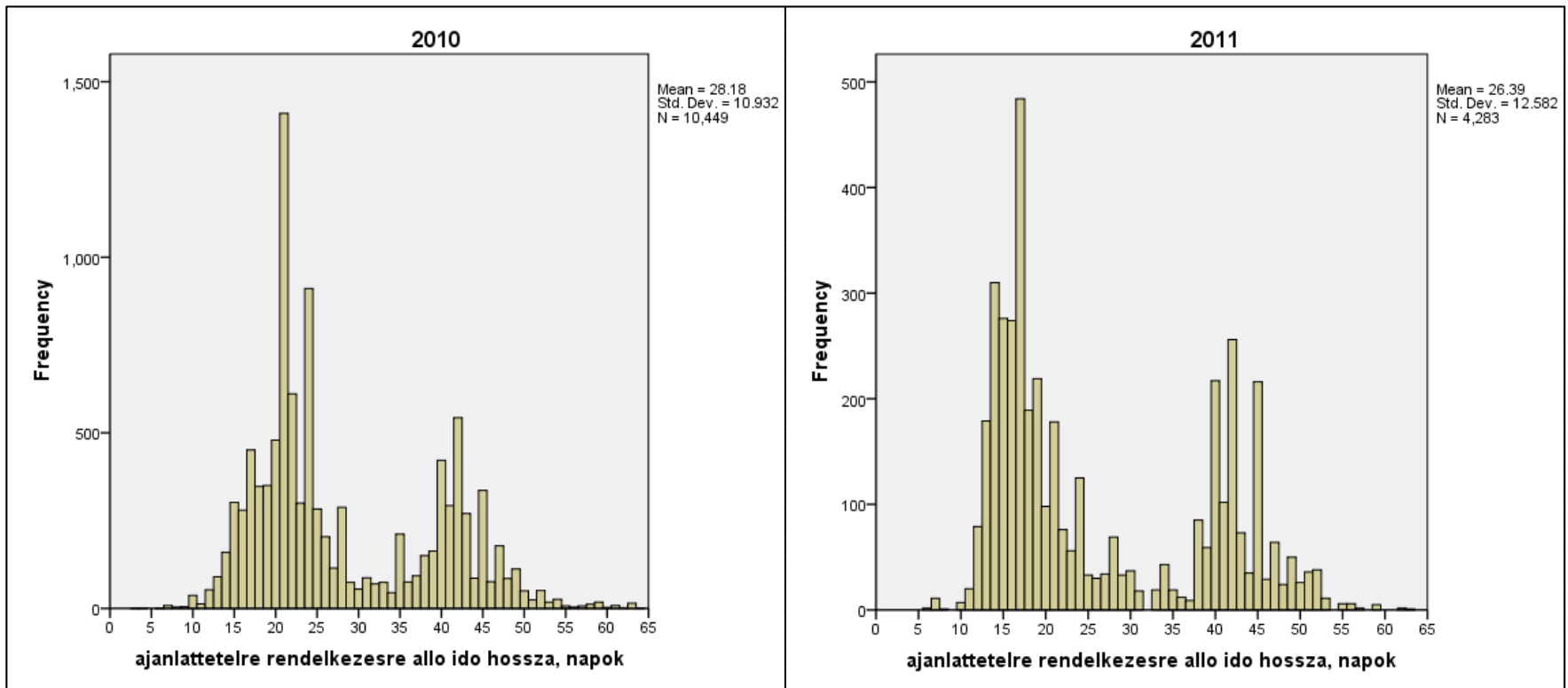
Fazekas, M., Tóth, I. J., & King, L. P. (2013). Hidden Depths. The Case of Hungary. In A. Mungiu-Pippidi (Ed.), *Controlling Corruption in Europe vol. 1* (pp. 74–82). Berlin: Barbara Budrich Publishers.

Fazekas, M., Chvalkovská, J., Skuhrovec, J., Tóth, I. J., & King, L. P. (2013). Are EU funds a corruption risk? The impact of EU funds on grand corruption in Central and Eastern Europe. CRC-WP/2013:03, Corruption Research Centre, Budapest.

Annexes

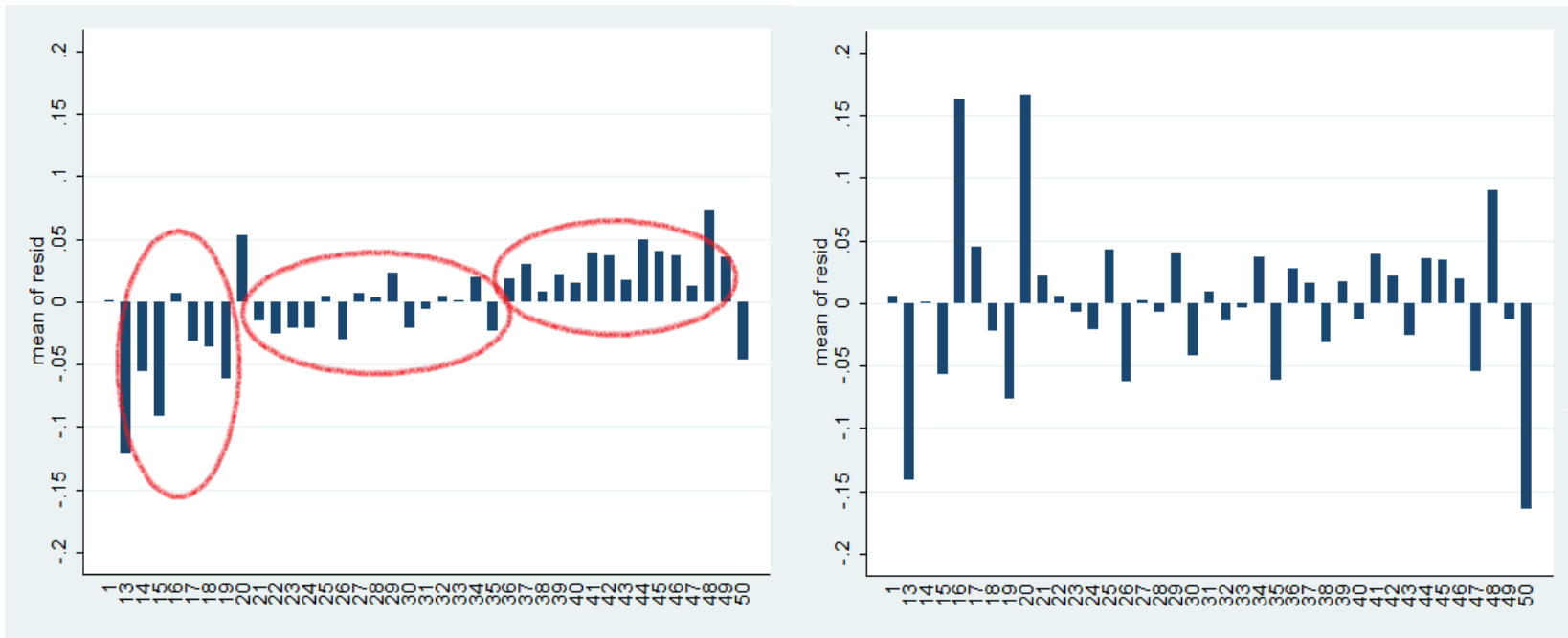
Example of corruption indicators

1. Length of submission period



CRI-component identification

- Regressions deliver component weights and thresholds
- Component categorisation (example: relative price of tender documentation)



Component weights

weights reflecting our limited understanding of the exact process

variable	component weight
single received/valid bid	0.096
no call for tenders published in official journal	0.096
procedure type	
ref. cat.=open procedure	0.000
1=invitation procedure	0.048
2=negotiation procedure	0.072
3=other procedures	0.096
4=missing/erroneous procedure type	0.024
length of eligibility criteria	
ref. cat.=length<-2922.125	0.000
1= -2922.125<length<=520.7038	0.024
2= 520.7038<length<=2639.729	0.048
3= 2639.729<length	0.072
4= missing length	0.096
short submission period	
ref. cat.=normal submission period	0.000
1=accelerated submission period	0.048
2=exceptional submission period	0.072
3=except. submission per. abusing weekend	0.096
4=missing submission period	0.024
relative price of tender documentation	0.000
ref. cat.= relative price=0	0.000
1= 0<relative price<=0.0004014	0.000
2= 0.0004014<relative price<=0.0009966	0.096
3= 0.0009966<relative price<=0.0021097	0.064
4= 0.0021097<relative price	0.032
5=missing relative price	0.000
call for tenders modification(only before 01/05/2010)	
weight of non-price evaluation criteria	0.000
ref. cat.= only price	0.000
2= 0<non-price criteria weight<=0.4	0.000
3= 0.4<non-price criteria weight<=0.556	0.048
4= 0.556<non-price criteria weight<1	0.096
5=only non-price criteria	0.000
procedure annulled and re-launched subsequently	0.096
length of decision period	
ref. cat.= 44<decision period<=182	0.000
1= decision period<=32	0.064
2= 32<decision period<=44	0.032
4= 182<decision period	0.096
5= missing decision period	0.000
contract modified during delivery	0.096
contract extension(length/value)	
ref. cat.= c.length diff. <=0 AND c.value diff. <=0.001	0.000
2= 0<c.length d.<=0.162 OR 0.001<c.value d.<=0.24	0.096
3= 0.162<c.length diff. OR 0.24<c.value diff.	0.000
4= missing (with contr. completion ann.)	0.048
5= missing (NO contr. completion ann.)	0.000
winner's market share	0.096

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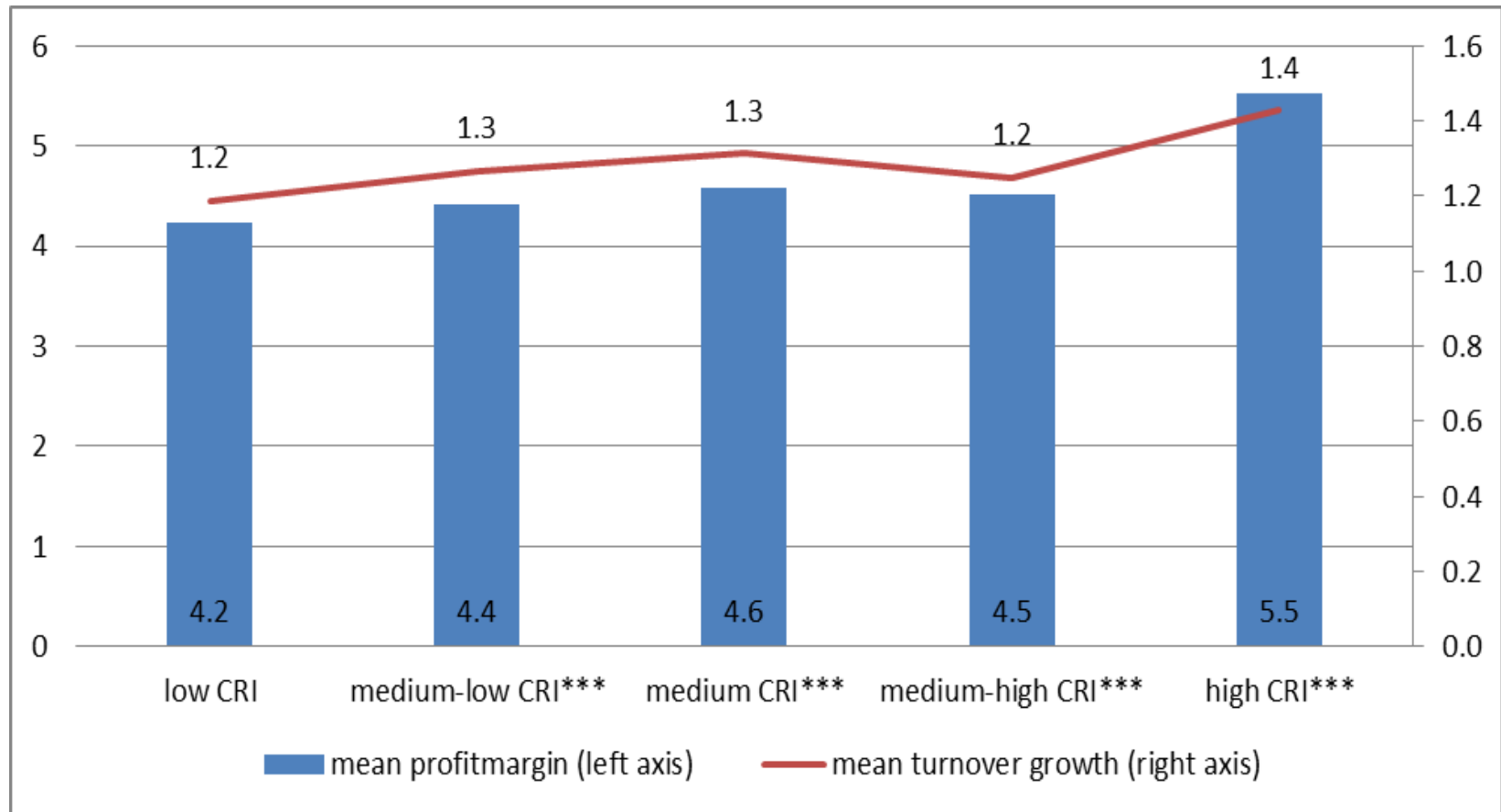
Additional validity tests 1.

- PII + CRI

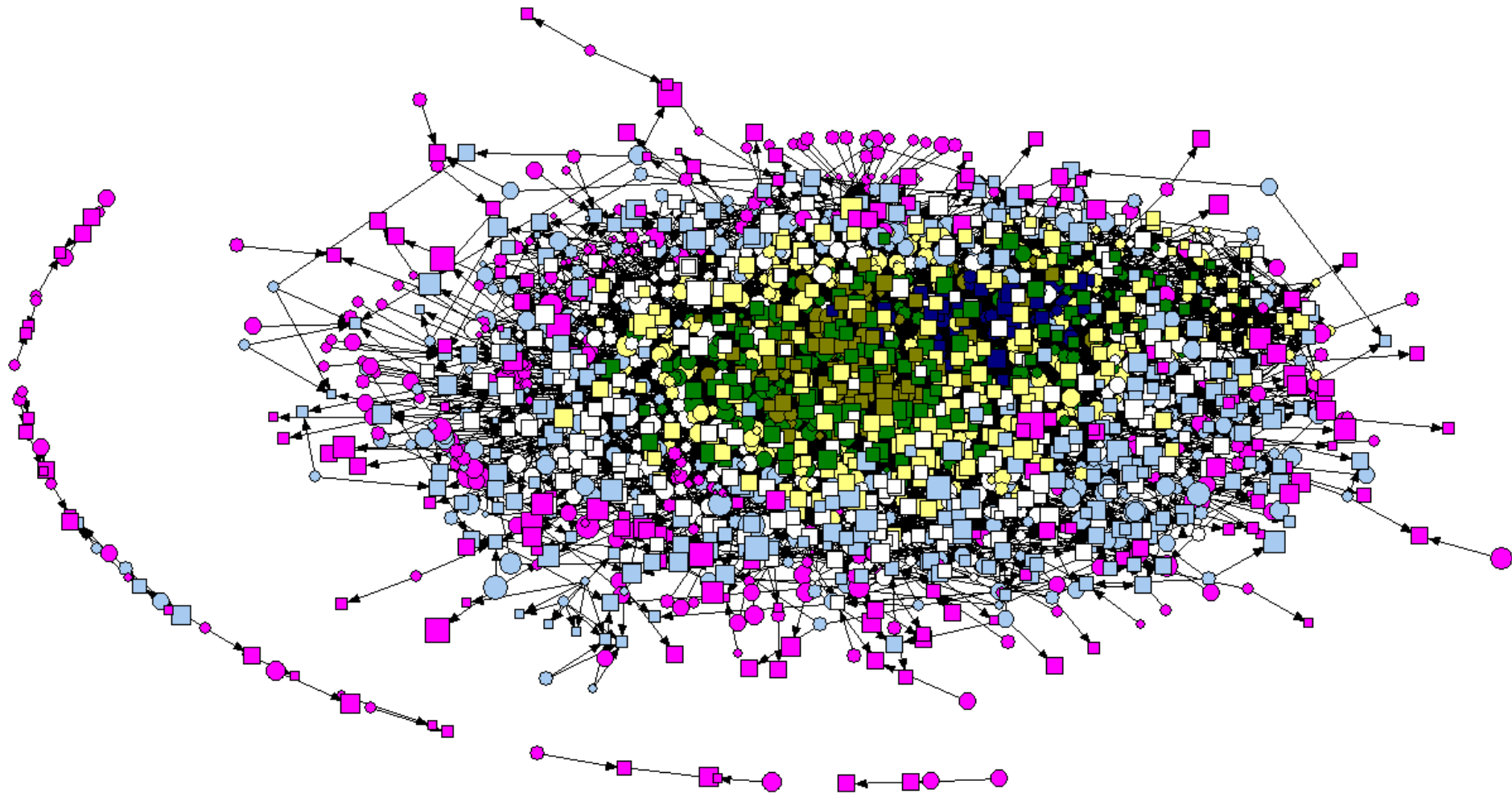
Group	N	Mean CRI	Std. Err.	Std. Dev.	95% Conf.Interval	
0=success <i>not</i> linked to government change	428	0.205	0.006	0.120	0.193	0.216
1=success linked to government change	2481	0.214	0.002	0.111	0.210	0.219
combined	2909	0.213	0.002	0.112	0.209	0.217
difference (CRI1-CRI0)		0.010***	0.006		0.021	-0.002

Additional validity tests 2.

- Profitability and turnover growth of winners, 2009-2012



Policy evaluation: network structure

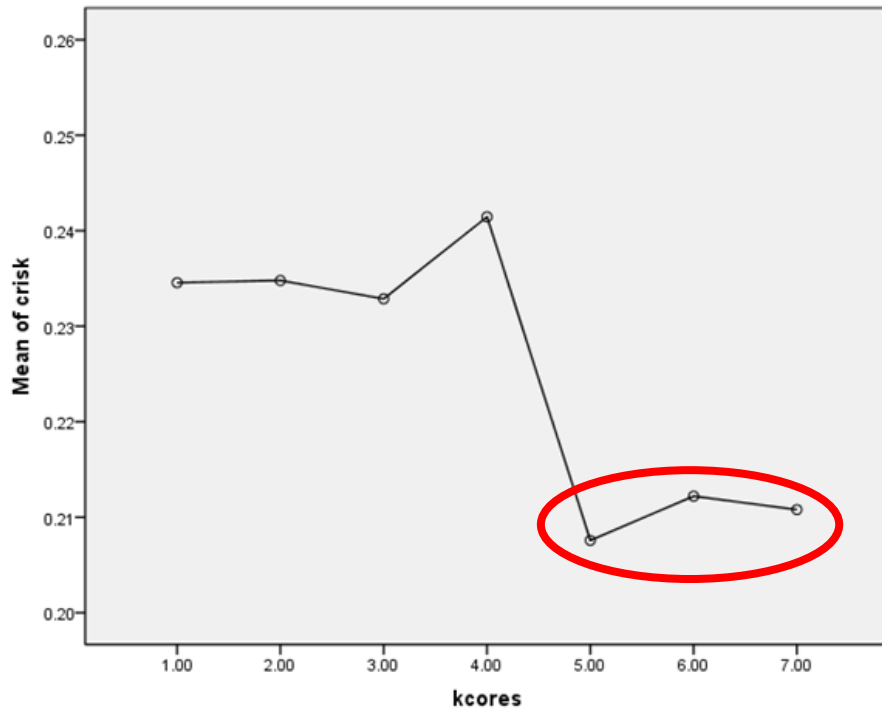


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Policy evaluation: Network position+CRI

- Issuers and winners taken together: k-cores' mean CRI scores

2009-2010



2011-2012

