This project is co-funded by the Seventh Framework Programme for Research and Technological Development of the European Union

Using Big Data in public procurement to detect corruption&collusion risks

Mihály Fazekas

University of Cambridge and Budapest Corvinus University,
mf436@cam.ac.uk

ANTICORRP conference: „Making Bulgaria's Anticorruption Policy Work, 28th July 2015; Sofia, Bulgaria

UNIVERSITY OF CAMBRIDGE
Department of Sociology

Two points

TOOLS

There are analytical tools to measure corruption in procurement.

APPLICATIONS

Major ways these tools can be used.

PART I –

Tools

Range of tools available

- Corruption
  - Red flags
  - Government favouritism
  - Political ties
- Inter-bidder collusion
  - Fake competition
  - Disappearing bidders

Using what data?

- Tender-level administrative dataset
- Sources
  - National procurement portals
  - EU's Tenders Electronic Daily
  - Development Agencies' portals
- 2009 onwards

- Data scope&quality are BIG issues!

What kind of corruption?

In public procurement, the aim of [institutionalised] corruption is to steer the contract to the favored bidder without detection. This is done in a number of ways, including:

- ***Avoiding competition*** through, *e.g.*, unjustified sole sourcing or direct contracting awards.
- ***Favoring a certain bidder*** by tailoring specifications, sharing inside information, *etc*.

See: World Bank Integrity Presidency (2009) Fraud and Corruption. Awareness Handbook, World Bank, Washington DC. pp. 7.

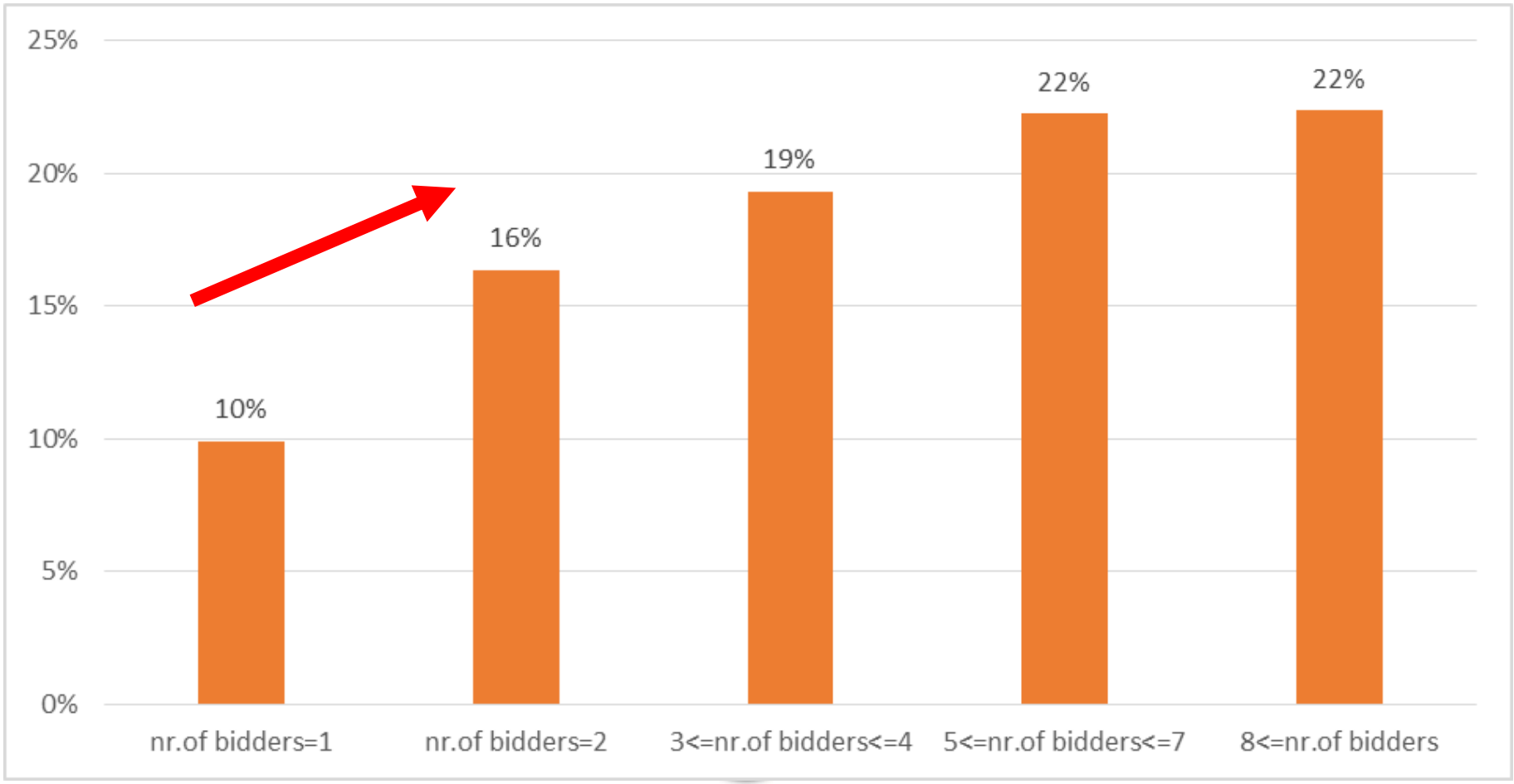
‚Red flags' for measuring corruption risks in PP

1. ***Single bid submitted***

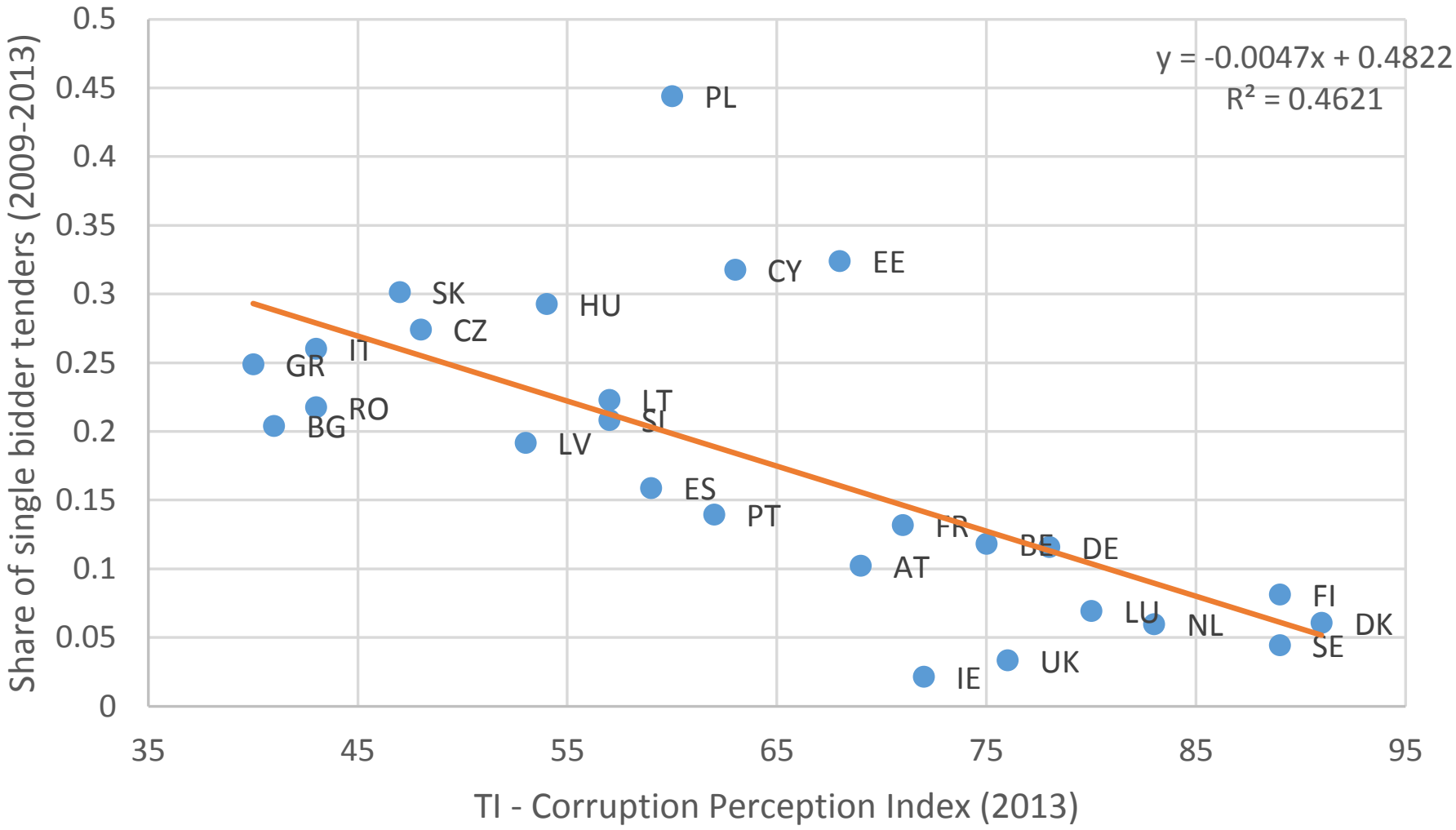
2. *Winner's contract share*
3. Call for tender publication in OJEU
4. Procedure type
5. Lenght of advertisement period
6. Weight of non-price evaluation criteria
7. Length of decision period
8. Call for tenders modification
9. Annulled procedure re-launched subsequently
10. *Contract modification*
11. *Contract value/duration increase*

Number of bidders predicts prices

- Price savings by the number of bidders
- 543,705 contracts, EU27, 2009-2014



Single bidding correlates with perceptions



PART II – Applications

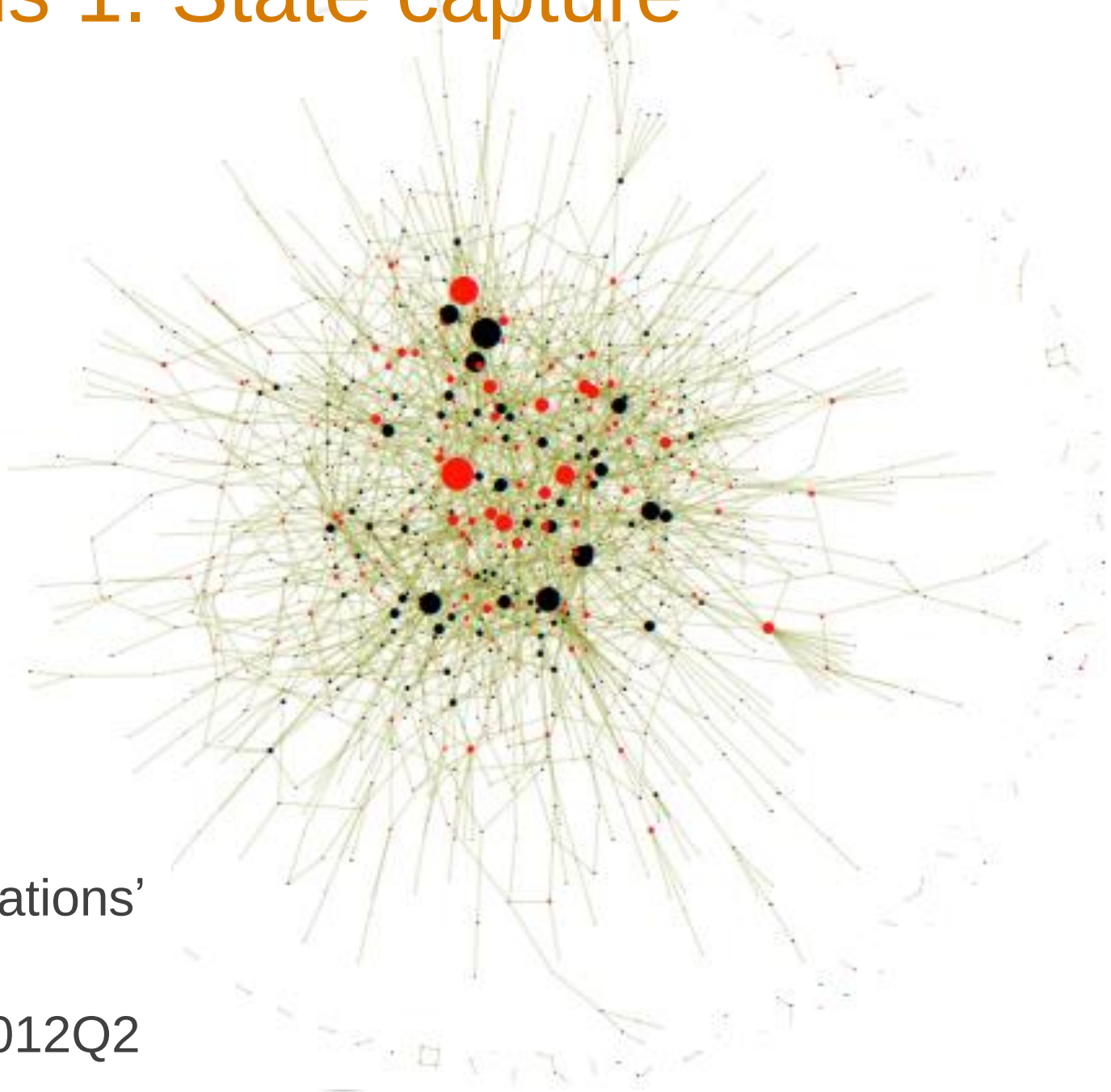
Potential applications

1. **Identifying hotspots of corruption/collusion:** organisational networks, regions, etc.

2. **Evaluating funding programmes:** e.g. European Union structural funds

3. **Risk-based audit:** companies, public bodies, or contracts

Applications 1. State capture

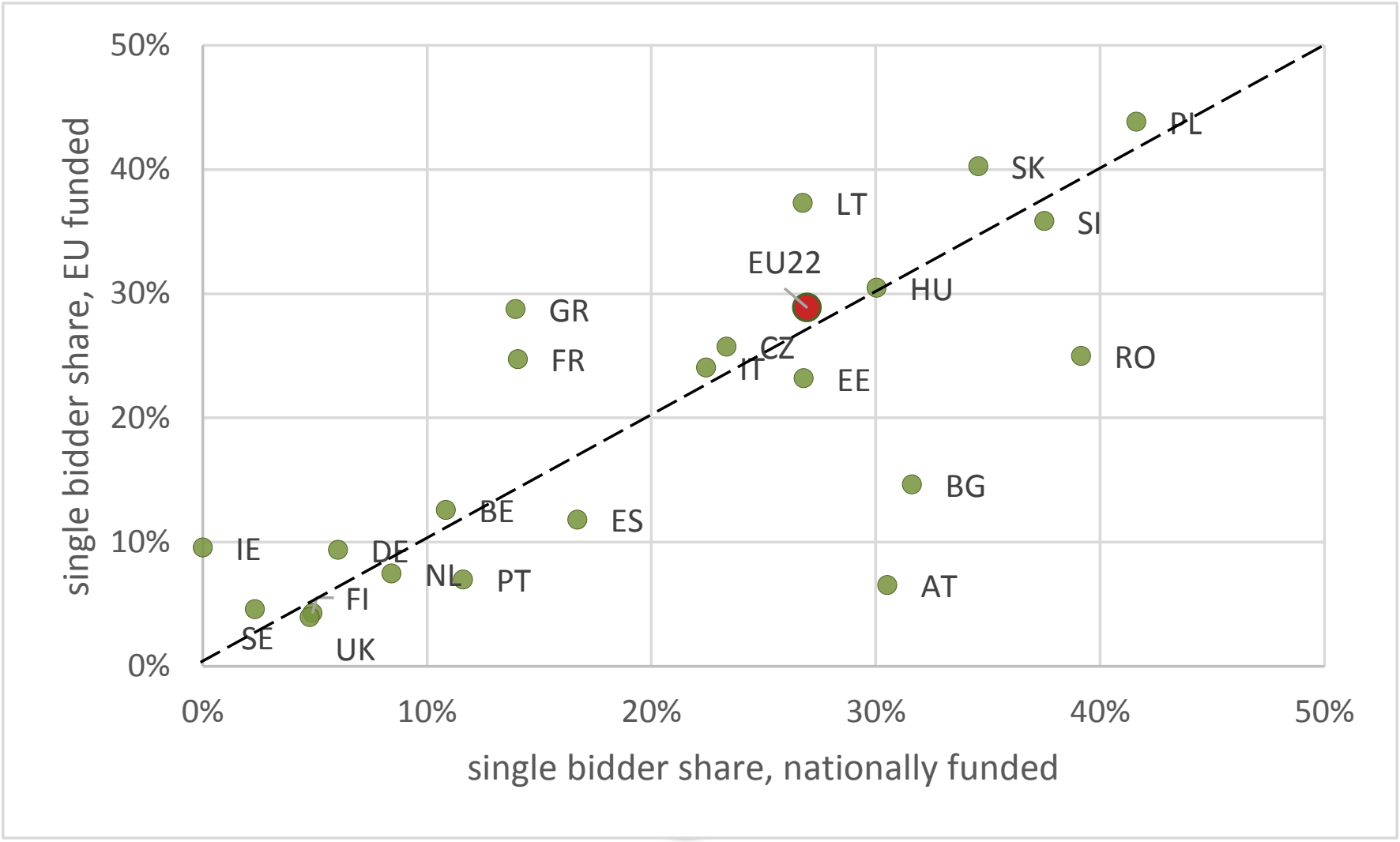


Captured organisations' network

Hungary, 2011-2012Q2

Application 2. Monitoring EU Funds procurement

- EU23, 2009-2013
- Single bidding in EU Funds and non-EU Funds in PP



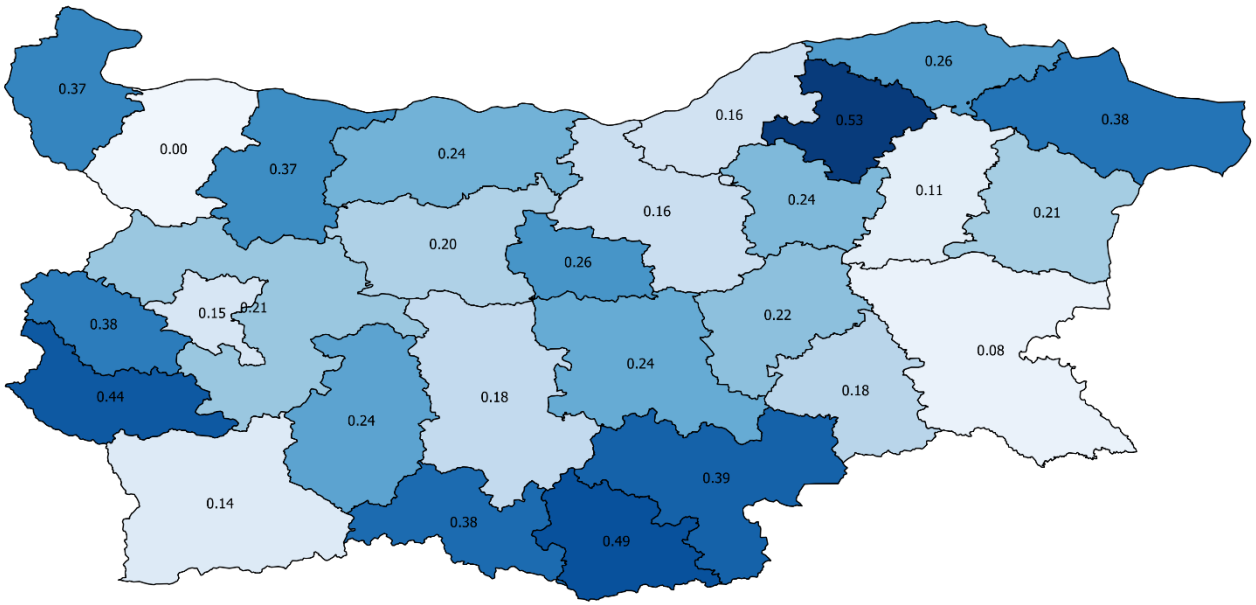
Potential applications for Bulgaria

1. Low hanging fruits:
   - data readily available (TED)
   - indicators readily available

Potential applications in Bulgaria

Simple risk indices can be monitored right away

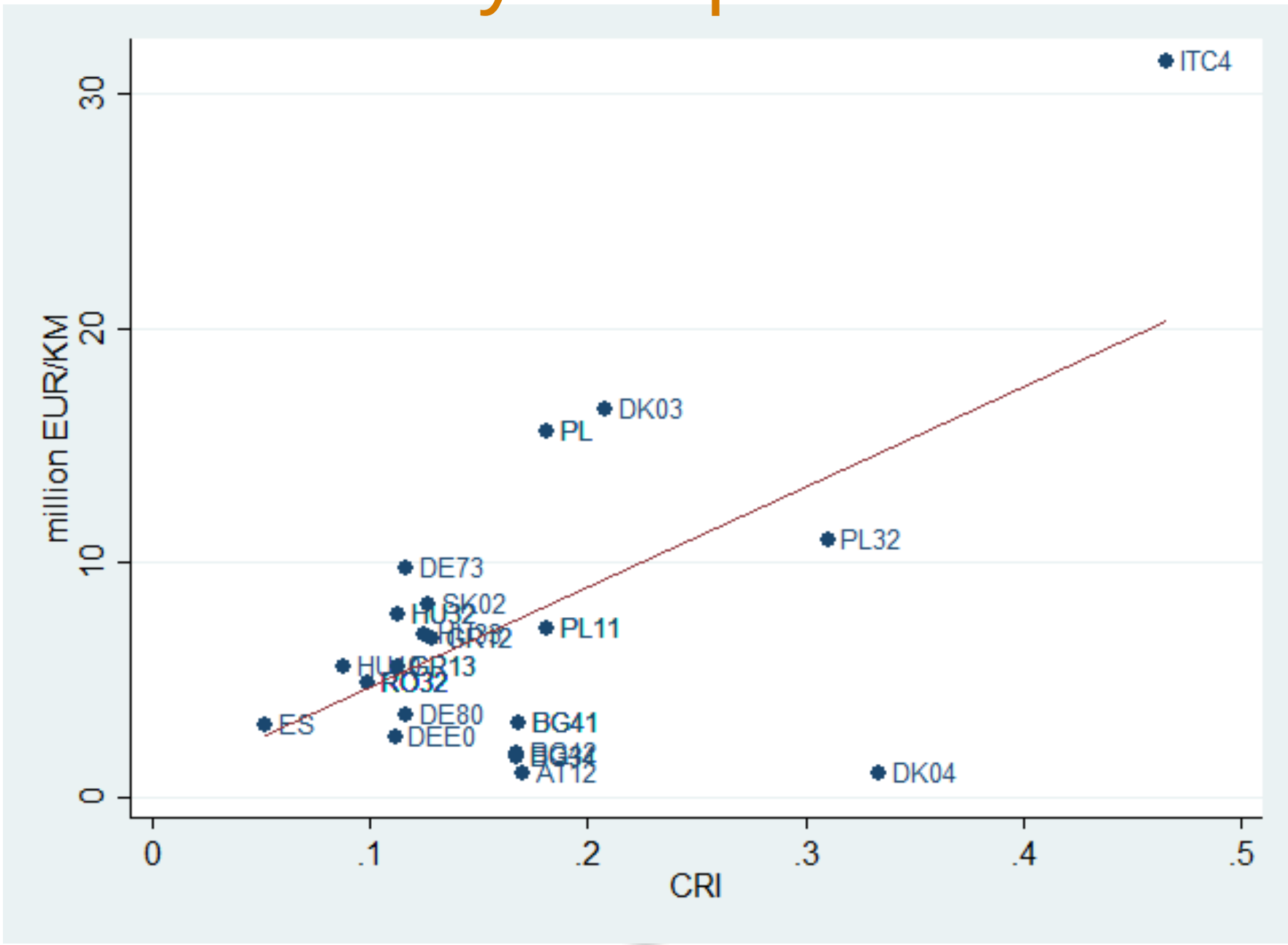
- Single bidding
- Market shares
- Excessive spending on consultancy



Potential applications for Bulgaria

1. Low hanging fruits:
   - data readily available (TED)
   - indicators readily available
2. Invest into data collection
   - Full procurement cycle (e.g. contract implementation!)
   - Unit prices: simple metrics

Motorway unit prices&CRI

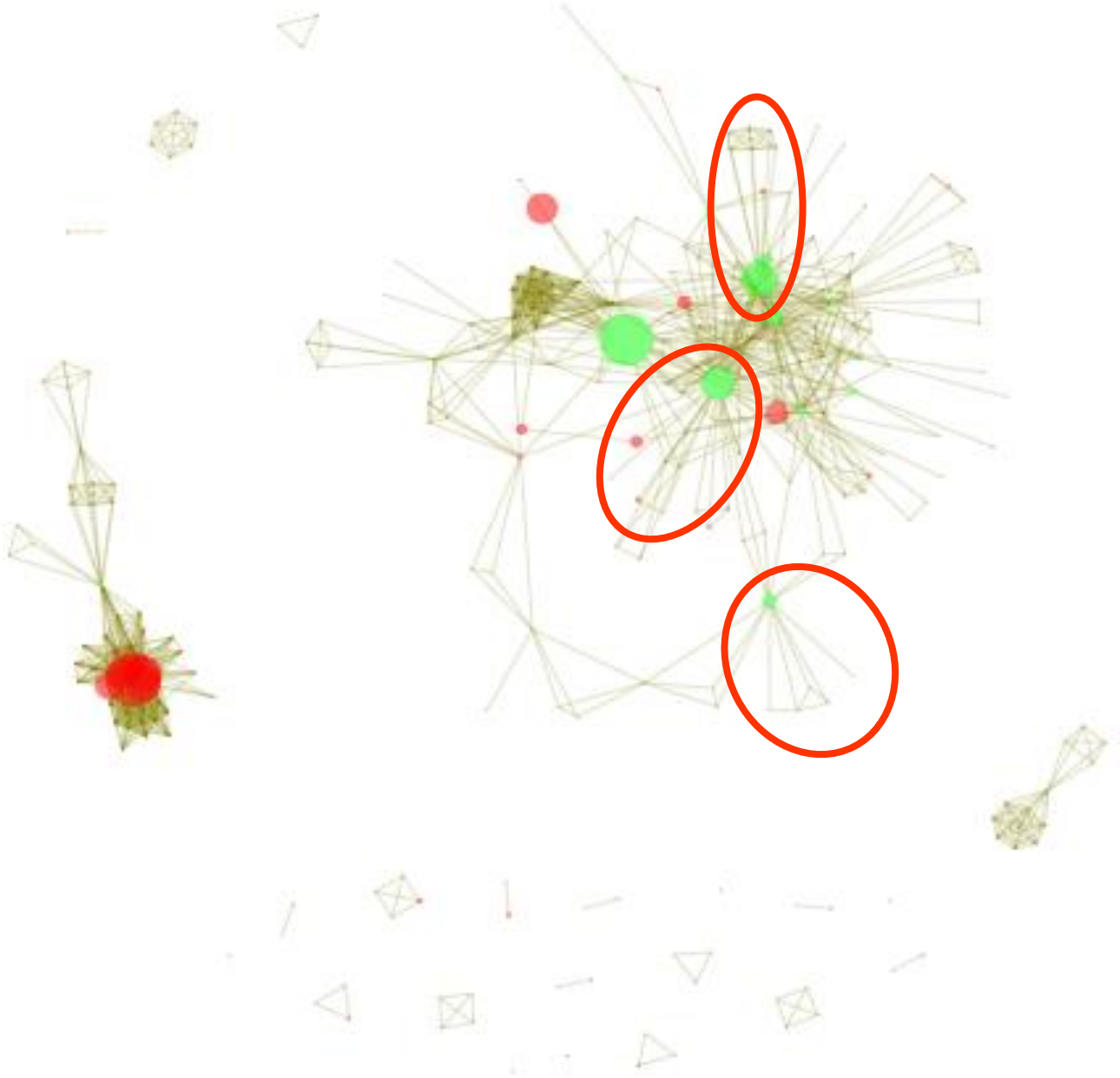


Potential applications for Bulgaria

1. Low hanging fruits:
   - data readily available (TED)
   - indicators readily available
2. Invest into data collection
   - Full procurement cycle (e.g. contract implementation!)
   - Unit prices: simple metrics
3. Regularly use more advanced monitoring tools:
   - Cartels
   - CRI, etc...

Tracking risky co-bidding patterns

- HU, 2009
- Dense networks
- Many cutpoints
- **Cutpoints seem to benefit** from position



Further readings

Corruption Research Center Budapest: www.crcb.eu

Fazekas, M. and Tóth, I. J. (2014). *From corruption to state capture: A new analytical framework with empirical applications from Hungary*. CRC-WP/2014:01, Budapest: Corruption Research Centre.

Czibik, Ágnes; Fazekas, Mihály; Tóth, Bence; and Tóth, István János (2014), *Toolkit for detecting collusive bidding in public procurement. With examples from Hungary*. Corruption Research Center Budapest, CRCB-WP/2014:02.

Fazekas, M., Chvalkovská, J., Skuhrovec, J., Tóth, I. J., & King, L. P. (2014). *Are EU funds a corruption risk? The impact of EU funds on grand corruption in Central and Eastern Europe*. In A. Mungiu-Pippidi (Ed.), The Anticorruption Frontline. The ANTICORRP Project, vol. 2. (pp. 68–89). Berlin: Barbara Budrich Publishers.

Fazekas, M., Tóth, I. J. (2014), *Three indicators of institutionalised grand corruption using administrative data*. Budapest: Corruption Research Centre.

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.