

Identifying Corruption in Legislation using Risk Analysis Methods

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Abstract—The objective of this article is to discuss the potential of economic analysis as a tool for identification and evaluation of corruption in legislative acts. We propose that corruption be perceived as a risk variable within the legislative process. Therefore we find it appropriate to employ risk analysis methods, used in various fields of economics, for the evaluation of corruption in legislation. Furthermore we propose the incorporation of these methods into the so called corruption impact assessment (CIA), the general framework for detection of corruption in legislative acts. The applications of the risk analysis methods are demonstrated on examples of implementation of proposed CIA in the Czech Republic.

Keywords—corruption; corruption impact assessment (CIA); legislative; legislative process; risk analysis; Czech Republic

I. INTRODUCTION

CORRUPTION is a systemic problem, which negatively influences the performance of public institutions. As [1] suggests, corruption lowers investment and results in slowdown of economic growth. According to [2], corruption leads to augmented and inefficient public spending, increase in bureaucracy and administrative burden, which results in hampering of business and entrepreneurship.

In this paper we focus on finding of adequate analytical tools for identification of corruption in legislation *ex ante*, i.e. during elaboration of new legislative acts instead of focusing, for example, on calculation of the economic impacts of corruption. The investigation of corruption in the legislative process is important because it is the legislation that sets in every country the rules of the game – both for private as well as for public sector. Thus legislation is a natural target for interest groups [3] that would like to embed their interests in the prepared legal act. Corruption in the legislation is very difficult to detect and evaluate, which make it persistent and very dangerous. In order to overcome this problem, we examine the possibility to deploy for assessment of corruption in the legislative acts the risk analysis methods used in economics and finance. Furthermore, we incorporate them into the systemic anti-corruption instrument, the corruption impact assessment (CIA).

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The article continues in the following manner. The next section provides a literature overview focused on most important sources of inspiration on corruption analysis, various forms of impact assessment, and specifically on CIA. The third section describes the concept of CIA and its role in the legislative process, where corruption is perceived as a risk factor influencing legislative acts in question. The fourth section explains the potential uses of the risk analysis methods in CIA and provides examples of their possible applications. The last section concludes the most important findings of the article.

II. LITERATURE OVERVIEW

A. Corruption Analyses

The literature analyzing the corruption processes in public institutions is voluminous and therefore we focus only on those relevant to this article. The microeconomic model described in [4] is among the most fundamental models of corruption processes and it examines corruption practices by means of industrial organization analysis. Another crucial view of corruption is [5], which analyzes corruption based on public choice theory.

Further methods for corruption assessment are described for example in [6], which also includes numerous examples of corruption in various areas of public sector. For more reality-based description of corruption cases and remedies, the excellent reference book and article are [7], and [8], respectively. From the point of view of this article, we also consider important the studies that focus on law and economics, such as [9], focused on judiciary system, and [10], analyzing law and integrity.

B. Impact Assessments and Legislative Process

The impact assessment in its various forms has recently become a very important part of policy-making and legislation in many different countries. The impact assessment is usually defined as a set of methods designed to evaluate the scope and intensity of a certain group of problems.

In the area of environmental law in the European Union (EU), the impact assessment is rather well developed. All EU member states are in certain situations obliged to apply a so called *environmental impact assessment* (EIA), as in [11]. EIA is also applied in the United States, Canada, Australia, and New Zealand, and in developing countries – e.g. India [12]. Among the methods deployed frequently in EIA are environmental risk mapping, life cycle analysis, environmental

impact assessment, multi-agent system, linear programming and agro-environmental indicators [13] complemented by cost-benefit or multi-criteria analysis. The sub-sample of EIA is the climate change impact assessment [14].

Regulatory impact assessment (RIA) is yet another set of analytical methods deployed in the legislation of EU, many developed countries as well as in many developing ones (e.g. Mexico, Malaysia, and Philippines), as discussed in [15]. Among the RIA methods prevails cost-benefit analysis, multi-criteria analysis, qualitative description of risks related with baseline alternative (if regulation is not adopted) [16]. Recent trend in RIA methods is the deployment of composite indicators [17]. RIA evaluates usually economic, social, and environmental impacts of the legislative or non-legislative act in question.

Among other, minor, specific sub-sets of impact assessments, can be named e.g. *social impact assessment* [12], [18], *health impact assessment* [19], or *corruption impact assessment* (CIA), which is discussed in detail in this article.

C. CIA – Literature Review

CIA as an evaluation instrument has been developed in South Korea since 2003. As [20] suggests, CIA was originally designed to be added into the standard regulatory impact assessment as the estimation of the impacts of the proposed legislation on the level of corruption.

The literature on CIA is not very developed and mostly limited to various documents from South Korea describing their methodology, targets and desired outcomes of CIA such as [21] or [22]. Also we observe that the method is slowly spreading from South Korea to other Asian countries, e.g. to Indonesia [23].

Recently, CIA became a matter of political interest also in the Czech Republic as part of the Anti-Corruption Policy of the country and the existing reference are [24] and [25].

III. CORRUPTION IN LEGISLATION AND CIA

A. CIA as Part of Legislative Process

[22] describes CIA as “*an analytical framework designed to identify and remove corruption-causing factors in laws and regulation*”. Within the legislative process, CIA therefore serves as ex ante prevention measure. The purpose of CIA is to detect elements in the legislative proposal that may result in increasing corruption level. Furthermore, CIA should recommend ways on how to limit or even eliminate these elements from the proposed law. CIA can be also applied as ex post analytical measure for detection of corruption in existing legislation [21].

The principles of CIA, as proposed in [24], are *adequacy, accountability, consistency, and transparency*. CIA also needs to be elaborated in collaboration with stakeholders of the proposed regulation and shall be supported by solid *open consultations*.

The principle of adequacy in CIA focuses on the factor described in [22] as *ease of compliance*. CIA examines,

whether the obligations proposed in the legislative act under evaluation are adequate to the object of the regulation. Excessive regulation results in law evasion, rise of shadow economy, and in corruption [24].

The accountability principle corresponds with factor denoted in [22] as *propriety of discretion*. In this case, CIA serves as a control instrument focused on elimination of vaguely assigned responsibilities of decision-makers, improve the clarity of assignment of discretionary powers etc. For each decision of public authority, which is based on the proposed regulation, it shall be clear, who is personally responsible for the decision and what are the limits of the decision-making power of such person or, in other words, what is her level of discretion. Lack of clear accountability setting lowers the efficiency of legal control and enforcement mechanisms.

The principle of consistency is also related to evaluation of discretionary powers of public officials. In this aspect, CIA focuses on the possibility of decision-makers to abuse their powers given to them by the proposed legislation in order to favor (or vice versa discriminate) one stakeholder over another. Vast discretionary powers (aka potential for inconsistent decision-making) in practice [24] frequently lead to incidence of bribery and to other types of corruption behavior.

The principle of transparency is contained both in [22] and [24]. Corruption is an activity that blossoms in secrecy, greater openness of public institutions usually leads to its efficient mitigation – see, for instance, [2], [22], [24], [26] and [27]. Nonetheless, in some cases, excessive openness might become controversial – see, for example, [28]. The aim of CIA in this area is therefore to analyze the potential impacts that proposed legislation may have on openness of involved public institutions, predictability and accessibility of the law to stakeholders. Important part of CIA is formed by open data initiatives – e.g. [29], [30], [31] or [32].

The experience from South Korea [21] suggests that “*the findings from corruption impact assessment are utilized in pushing for institutional improvements. The corruption impact assessment, therefore, functions as an advance analysis system for efficient institutional improvements.*” If accompanied by adequate set of evaluation methods, CIA can thus serve as useful instrument for diminishing of corruption levels embedded in the legal framework.

B. Corruption as a Risk

The most common definition of corruption is the following [33]: “*corruption is the abuse of power by a public official for private gain*”. This relatively specific definition is, however, not sufficient for the purposes of evaluation of corruption in legislative process. Therefore, we shall turn around to a more general definition of corruption as provided, for instance, in [34]: “*Corruption is a social network phenomena...The structure of a social network is determined by the exchange relationships between individuals or units. Three factors that govern exchanges are: the direction of the exchange (horizontal, among same level members, or vertical, in*

patron-client relationships); the type of resources exchanged i.e. capital, power, information, work, goods, services, loyalty; and the mode of exchange i.e. formal or informal.” This definition is relevant for corruption in the executive bodies of public institutions, in the judicial system and even in certain parts of the legislative process, yet we propose that it needs to be modified for the purposes of the evaluation of the corruption embedded into the legal framework.

In evaluation of proposed legislative acts (ex-ante CIA), our focus is not to assess some existing corruption exchange scheme. Instead the objective is to assess the risk that, in the case that the legislative act is adopted, it will increase the intensity or scope of corruption behavior in the regulated area of human activity. The explained variable in ex-ante CIA can therefore be understood as preliminary risk analysis (also called coarse risk analysis), where risk is identified as the probability of increase of corruption due to the proposed act times the value of such corruption increment (either in scope or intensity).

The CIA on existing regulation (ex-post CIA) also reflects corruption as a probabilistic variable, however, in this case, some of the probabilities (of corruption incidence) can be estimated based on past observations (we assume that the regulation has already been in force and its impacts can be monitored). Also in this case, CIA can be conducted effectively using the risk analysis methods.

It is important to note that once we defined corruption in legislative acts as a risk element, and once we identify it by means of risk analysis methods adjusted for CIA, we can proceed to systemic implementation of risk management methods to recommend suitable measures for mitigation of corruption from the legislation. Thus CIA will be able to achieve its desired effect, which is “the uprooting corruption-causing factors in each and every area of law, ultimately putting an end to the so-called ‘dead zones’ of corruption” [21].

IV. APPLICATION OF RISK ANALYSIS METHODS FOR CIA

In this part of the article, we propose adjustments of a number of risk analysis methods for CIA application on new and existing laws and regulations. We first discuss the application of tools of preliminary analysis and then move to operational risk analysis. We also describe the application of scenario analysis for CIA and conclude by discussing the methods of game theory for CIA.

A. Preliminary Risk Analysis

The preliminary risk analysis is according to [35] “...performed by dividing the analysis subject into sub-elements and then carrying out the risk analysis for each of these sub-elements in turn... Checklists may be used as a tool for identifying and analyzing hazards and threats for each sub-element to be analyzed. The form used to document the risk analysis is often standardized.”

The preliminary (or coarse) risk analysis is a very fitting method for ex-ante CIA. At the beginning of the legislative

process, the newly proposed or existing act can be firstly roughly evaluated with use of a set of questions. Based on the above listed principles of CIA, we propose to use the set of questions listed in TABLE I, which extend the questions deployed in South Korea [22].

TABLE I
 EX-ANTE CIA CHECKLIST

I. Size of the agenda in question	
I.1.	Estimate of value of regulated business
I.2.	Estimate of compliance costs related to the regulation
II. Structure and characteristics of regulated subjects	
II.1.	Number of regulated subjects
II.2.	Economic power of the regulated subjects
II.3.	Cooperation between regulated subjects (associations, chambers etc.)
III. Characteristics of the regulatory bodies	
III.1	Type of control mechanisms deployed to control compliance with the regulation
III.2.	Qualification and remuneration of the compliance officers
IV. Transparency of processes	
IV.1.	Clear implementation procedure
IV.2.	Personal responsibility for decisions on part of the public officials
IV.3.	Open data concerning past results of the procedure (possibility of public control)
V. Past experience (if available)	
V.1.	Incidence and features of detected or suspected corruption in the regulated area

It is obvious that most answers on the questions listed in the table above will be rough estimates; nonetheless, they will provide a basis for assessment, whether an in-depth CIA of the regulation will be required. If so, the preliminary risk analysis will be further refined by one or more of the analyses described briefly below.

B. Operational Risk Analysis

An operation risk in the context of corruption is a risk arising from the execution of the newly adopted legislative acts and amendments to legislative acts by public institutions. The operational risk factors that occur during the execution of legislation, we largely mean risks arising from internal government processes, behavior of public officials or the specific implementations of regulatory measures.

There are some standard ways that can be quite easily employed to face this operational risks related to corruption such as transparency and standardization of regulatory decisions and internal processes. Measures such as internal as well as external audit of public agendas and institutions are helpful for detecting and analyzing corruption in ex-post CIA, whereas ex-ante CIA should learn from the lessons of financial

operational risk management and planning. More direct inspiration should come from the banks' experience with managing operational risks related to fraud or system failures – for reference, we may deploy [37], [38], or [39].

C. Scenario Analysis in CIA

Scenario analysis considers possible future events by examining alternative possible outcomes. While scenario analysis is applied in RIA, its application in CIA is very desirable. For example, when considering corruption as a risk factor in the legislative process, there might always be a number of possible interpretations of a regulation. We propose that alternative scenarios be considered not only from the point of view of different final interpretation by the justice system, but also from the point of view of possible reactions of regulated agents or regulatory bodies.

To draw a parallel with the financial markets, the motivation of potential corruption agents might differ depending on alternative possible outcomes such as the future economic growth, technological or other structural change in the economy. For example, the expected pay-off from either corrupting public officials, or the ability of police to investigate the related corruption cases might differ extremely depending on variables that are unknown at the time of preparing ex-ante CIA. In these cases, especially when the future outcomes have huge impact on corruption behavior, scenario analysis is a priceless approach for CIA.

The various scenarios should be weighted according to their expected probabilities with the option of giving more weight to the severe forms of corruption as suggested in [7].

D. Game Theory and CIA

The methods of the game theory seem very relevant in general for corruption assessment (for applications on corruption see e.g. [40], [41], [42]) and for CIA in particular. Therefore we briefly discuss them even though they do not belong among the risk analysis methods, no matter how close they are to scenario analysis.

Game theory focuses on the strategic interaction and motivations of different players, including interest groups, public officials and institutions. A game theory analysis is able to provide a detailed overview of the incentives faced by various players affected by the new regulation or law and it can therefore very well expose the corruption risks. Application of game theory methods also forces one to think about the regulation's implications in a structured and strategic way.

Insights from game theory have the potential to indicate a risk of corruption in many contexts as outlines in [24] and [25], but at the same time its application will be a challenge because there is no one prescribed or unified form of applying the game theory analysis in CIA, but rather an array of game theory approaches, which could be listed in implementation documents for conveniences of its users.

Furthermore, to prepare a high-quality game theory analysis for CIA, one needs a very deep understanding of the proposed

regulation and of the behavior and motivations of economic agents to be regulated. Therefore, a crucial precondition when applying game theory approaches in CIA is not only the detailed knowledge of game theory, but also the expertise in the area the new legislative act aims to regulate.

V. CONCLUSION

We presented corruption as a systemic and partially legislative problem, which negatively influences the performance of public institutions, and CIA as a systemic, however partial, solution to one dimension of this problem. We discussed a number of ways in which CIA allows to unleash the potential of economic analysis as a tool for identification and evaluation of corruption in legislative acts.

In this article we made the argument that the corruption is perceived as a risk factor within the legislative process and on the basis of that, we made the case for the employment of risk analysis methods from various fields of economics in the evaluation of corruption in legislation.

On the example of proposals in the Czech Republic, we showed that CIA can serve very well not only as the general framework for detection of corruption in legislative acts but also as a vehicle for the application and incorporation of the risk analysis and other methods in the fight against corruption.

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REFERENCES

- [1] P. Mauro, "Corruption and Growth", *The Quarterly Journal of Economics*, vol. 110, n.3, pp. 681-712, 1995
- [2] D. Kaufman, "Myths and Realities of Governance and Corruption", November 2005, available at SSRN: <http://ssrn.com/abstract=829244>
- [3] R.G. Noll, B.M. Owen, *The political economy of deregulation: Interest groups in the regulatory process*, American Enterprise Institute for Public Policy Research, 1983, p. 161
- [4] A. Shleifer, R.W. Vishny, "Corruption", *The Quarterly Journal of Economics*, vol. 108, n. 3, pp. 599-617, Aug. 1993
- [5] S. Rose-Ackermann, "Corruption", in *The Encyclopedia of Public Choice*, C.K. Rowley, F. Schneider (eds.), Springer, pp. 67 – 76, 2003
- [6] G.T.Abed, S. Gupta (eds.), *Governance, corruption & Economic Performance*, International Monetary Fund, 2002, p. 551
- [7] R. Klitgaard, *Controlling Corruption*, University of California Press, Berkeley, 1991, p. 225
- [8] F. Méndez, F. Sepúlveda, "Corruption, growth and political regimes: cross country evidence", *European Journal of Political Economy*, vol. 22, n. 1, 2006, pp. 82-98
- [9] E. Buscaglia, M. Dakolias, *An Analysis of the Causes of Corruption in the Judiciary*, World Bank, August 1999
- [10] C. Fijnaut, L. Huberts (eds.), *Corruption, Integrity, and Law Enforcement*, Kluwer Law International, The Hague, 2002

- [11] C. Wood, *Environmental Impact Assessment: A Comparative Review*, 2nd edition, Person Prentice Hall, 2003, p. 399
- [12] B.K. Dutta, S. Bandyopadhyay, "Environmental Impact Assessment and Social Impact Assessment - Decision Making Tools for Project Appraisal in India", *International Journal of Human and Social Sciences* vol.5, n. 6, 2010, pp. 350 - 355
- [13] S. Payraudeau, H.M.G. van der Werf, "Environmental impact assessment for a farming region: a review of methods", *Agriculture, Ecosystems and Environment*, vol. 107, 2005, pp. 1–19
- [14] J.F.Feenstra, I. Burton, J.B. Smith, R.S.J. Tol (eds.), *Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies*, UNEP, 1998
- [15] C. Kirkpatrick, D. Parker, "Regulatory impact assessment and regulatory governance in developing countries", *Public Administration and Development*, vol. 24, n. 4, pp. 333–344, October 2004
- [16] C. Kirkpatrick, D. Parker (eds.), *Regulatory Impact Assessment Towards Better Regulation*, Edward Elgar Publishing, 2007, p. 286
- [17] F. De Francesco, C.M. Radaelli, "Indicators of regulatory quality", in *Regulatory Impact Assessment Towards Better Regulation*, C. Kirkpatrick, D. Parker (eds.), Edward Elgar Publishing, 2007, p. 36
- [18] H.A. Becker, "Social Impact Assessment", *European Journal of Operational Research*, vol. 128, n. 2, 16 January 2001, pp. 311–321
- [19] A. Scott-Samuel, "Health impact assessment—theory into practice", *Journal of Epidemiology and Community Health*, 1998; vol. 52, pp. 704–705
- [20] OECD, *Anti-Corruption Reform under the Action Plan's 2nd Implementation Cycle (2005-2006): Reform projects and implementation assessment*, ADB/OECD Anti-Corruption Initiative for Asia and the Pacific, February 2005
- [21] Anti-Corruption & Civil Rights Commission Republic of Korea, *Corruption Impact Assessment – Assessing and eliminating corruption risks*, 2009, <http://www.oecd.org/dataoecd/28/30/42877427.pdf>
- [22] Anti-Corruption & Civil Rights Commission Republic of Korea, "Corruption Impact Assessment", *Working group document UNODC*, 22 – 24 Aug. 2011
- [23] N. York, M.V. Laric, *Impact Assessment Case Study: Monitoring Corruption in Indonesia*, *Economist, Evaluation Department for International Development*, 15th November 2006
- [24] J. Chvalkovska, P. Jansky, J. Skuhrovec, "CIA, zIndex a další nástroje prevence korupce (nejen) v legislative (CIA, zIndex and further instruments of corruption prevention (not only) in legislation)", in *Boj proti korupci (Fight against corruption)*, P. Kohout. (ed.), Polygrafie ÚV, Prague, 2011
- [25] J. Chvalkovska, P. Jansky, "CIA, transparentní lobbying a další nástroje prevence korupce nejen v legislative (CIA, transparent lobbying and other tools of corruption prevention not only in legislation)", in *Transparent lobbying and How to achieve it?*, Conference of American Chamber of Commerce, October 25, 2011, Prague
- [26] I. Kolstad, A. Wig, "Is Transparency the Key to Reducing Corruption in Resource-Rich Countries?", *World Development*, vol 37, n. 3, March 2009, pp. 521–532
- [27] J. Huther, A. Shah, "Anti-Corruption Policies and Programs: A Framework for Evaluation", *Policy Research Working Paper 2501*, World Bank, December 2000
- [28] M. Bac, "Corruption, Connections and Transparency: Does a Better Screen Imply a Better Scene?", *Public Choice*, vol. 107, n. 1-2, 2011, pp. 87-96
- [29] S. Kim, H.J. Kim, H. Lee, "An institutional analysis of an e-government system for anti-corruption: The case of OPEN", *Government Information Quarterly*, vol 26, n. 1, January 2009, pp. 42–50
- [30] J. Chvalkovska, J. Skuhrovec, "Measuring transparency in public spending: Case of Czech Public e-Procurement Information System" *IES Working Paper 11/2010*, Charles University
- [31] H.D. Vinod, "Statistical Analysis of Corruption Data and Using the Internet to Reduce Corruption", *Journal of Asian Economics*, vol. 10, n. 4, Winter 1999, pp. 591–603
- [32] J. Klump et al., "Data publication in the open access initiative", *Data Science Journal*, vol. 5, n. 15 June 2006, pp. 79 - 83
- [33] Stanford Encyclopedia of Philosophy, "Corruption", viewed January, 8, 2012, <http://plato.stanford.edu/entries/corruption/>
- [34] R. Carvajal, "Large Scale Corruption: Definition, Causes and Cures", in *Proceedings from A Conference to Celebrate the Work of Russell L. Ackoff on his 80th Birthday and Developments in Systems Theory and Practice*, March 4-6, 1999, Villanova University, pp. 138
- [35] T.Aven, *Risk Analysis Assessing Uncertainties Beyond Expected Values and Probabilities*, John Wiley&Sons, August 2008, pp. 195
- [36] A. Mills, "Strengthening domestic institutions against corruption: A public ethics checklist", in: *Corruption & integrity improvement initiatives in developing countries*, UNDP, 1998, pp. 141 – 150
- [37] M. Power, "The invention of operational risk", *ECRS Center for Analysis of Risk and Regulation Discussion Paper*, n. 16, June 2003
- [38] C. Cornalba, P. Guidici, "Statistical models for operational risk management", *Physica A*, n. 338, 2004, pp. 166 – 172
- [39] P. de Fontnouvelle, E. Rosengren, J. Jordan, "Implications of Alternative Operational Risk Modeling Techniques", *NBER Working Paper*, January 2007
- [40] R.B. Meyerson, "Effectiveness of electoral systems for reducing government corruption: A game-theoretical analysis", *Northwestern University Discussion Paper*, n. 956, September 2001
- [41] E.Dabla-Norris, *A Game-Theoretic Analysis of Corruption in Democracies*, IMF Working Paper, n. 106, June 2000
- [42] A. Mishra, "Persistence of corruption: some theoretical perspectives", *World Development*, vol. 34, n. 2, February 2006, pp. 349–358