Application for a Grant

1st joint applicant
Ortmann, Andreas

2nd joint applicant
Lizal, Lubomir

Name of the project:

Designing and Testing Incentive-compatible and Effective Anti-corruption Measures

Duration: January 2004 - December 2006

Characteristics of the proposed project (an abstract of max. 15 lines):

Corruption has been identified as a major impediment to growth, either directly through welfare-reducing rent-seeking and/or the taxation-like nature of bribes or indirectly through the lack of trust that it engenders in producers, consumers, citizens, tourists, and foreign investors. By all accounts corruption (e.g., CSE 2000) is a pervasive, and apparently worsening, phenomenon in the Czech Republic. A major part of the problem seems to be that the extant anti-corruption laws are rather ineffective . It is the purpose of the research proposed here to devise incentive-compatible and effective anti-corruption measures. Since such theoretical exercises are fraught with dangers, we also propose to test our designs through experimental work. Experimental economics – while currently more or less unknown in the Czech Republic (but see CSE 2001) – has been shown to be an effective component of "design economics" - the science of designing and implementing institutions for a particular purpose (Roth 2002). The use of experiments in the economic sciences has recently been authenticated by the award of the Nobel Prize in Economic Sciences to professors Kahneman and Smith.

Description and Substantiation of the Project:

Corruption has been identified as a major impediment to growth, either directly through welfare-reducing rent-seeking and/or the taxation-like nature of bribes (e.g., Murphy et al.1993; Shleifer & Vishny 1993) or indirectly through the lack of trust that it engenders in producers, consumers, citizens, tourists, and foreign investors (e.g., Bohata 2000; Kaufman & Shang-Jin 1999;
Mauro 1995, 1998; Potucek 1999; Rose-Ackerman 1999; Tanzi & Davoodi 1997; Tirole 1996; Zak & Knack 2001). Corruption is, by all accounts, a pervasive phenomenon in the Czech Republic (e.g., ; Hanousek & Lizal 2001; Jurajda & Lizal 2002; Kocenda & Lizal 2001; Lizal & Kocenda 2001; Tanzi 1998; see also EC 2002; CSE 2000; EBRD 1999; GfK 1998, 1999; Worldbank 2000.)

The grip of corruption in the Czech Republic is ubiquitous, running the gamut from high levels to low levels of organizational units across all sectors of the economy (from government to private for-profit and nonprofit), although the percentage of culprits seems to be highest in state administrations. A flurry of recent news – from Kasl's resignation as major of Prague to the resignation of one of the most prominent anti-corruption investigators of the Office for Financial Criminality and State Protection – has high-lighted the extent of the problem. The indications are, furthermore, that the situation in the Czech Republic – notwithstanding the "clean hands" campaign and the recent attempt to change public sense of propriety through advertising in metro and trams – has worsened over the years, as suggested by all arms-length observers (e.g., Transparency International and the EU). For example, in the TI's Corruption Perception Index the Czech Republic fell from 25th place with a score of 5.4 in 1996 to 52nd-56th place with a score of 3.7 in 2002. (Lower scores mean more corruption.) In the eyes of

Supreme State Attorney Marie Benesova, the situation in the Czech Republic is so serious that it justifies radical solutions such as entrapment (as reported in *The Prague Post* April 12, 2002.)

The reasons for this development are not completely clear but they seem

1) the result of poorly designed anti-corruption laws and mechanisms

2) lackadaisical enforcement of existing laws and mechanisms, and

3) (the evolution of) cultural norms that accept corruption as a way of life and doing business.

Our wording is careful because the very nature of corruption – a form of taxation imposed privately and secretly (e.g., Shleifer & Vishny 1993) – makes it a difficult animal to assess.

Traditionally, two basic methods have been used to measure corruption (e.g., Kocenda & Lizal 2001; Lizal & Kocenda 2001). The first draws on hard data of counts of discovered, monitored, and prosecuted cases. It uses police statistics and statistics from the Department of Justice. Such a measure is appropriate in uncorrupted countries, while it is very likely to indicate but the tip of the iceberg in partly corrupted ones, and, hence, is likely to underestimate the true level of corruption. Such a measure is obviously inappropriate in the most corrupted countries since bribery and cronyism have become socially acceptable, or are at least tolerated, and nobody is prosecuted for bribery. The second measure of corruption uses soft data, opinion polls, surveys, and case studies. To the extent that some of these measures – such as the Corruption Perceptions index (CPI) of Transparency International – have become rather sophisticated means of measurement, they are likely to give us a more reliable picture of the degree of the corruption.

The CPI, however, or similar measures does not help us to understand what failures of anti-corruption

laws and mechanisms are to fault, how lackadaisical enforcement could be reduced, or how cultural norms can emerge that make certain forms of corruption socially acceptable.

Here we propose a novel approach – theoretical and experimental methods, or "design economics" (Plott 2001; Roth 2002) – toward a better understanding of incentive-compatible and effective anti-corruption measures which we believe to be the driver behind the spread of corruption in the Czech Republic. While the need for theoretical work (establishing incentive-compatibility) is self-evident, the need for experimental work (suggesting whether indeed the theoretical constructs work efficiently[1]) may be less obvious and deserves justification.

Experimental methods – recently authenticated by the Nobel Prize 2002 in Economic Sciences to Professors Kahneman (Princeton U) and Smith (George Mason U) – have turned out to be rather useful in the testing of theories of individual decision making, "games" and markets (Davis & Holt 1993; Kagel & Roth 1995; Plott & Smith 2003; Ortmann *forthcoming*). Of particular interest in the current context is the fact that experiments allow researchers to study subtle details of institutional design and implementation. The reason is, very simply, that it is easy to manipulate in the laboratory at relatively low cost parameters of institutional settings that could be changed in real life only at potentially very high cost (if at all).

[1] This can not be taken for granted. The provision of incentives in firms, for example, often does not obey the theoretical constructs (e..g., Prendergast 1999). As a general result, incentive compatible schemes are rarely used probably because they are difficult to implement. The incentive schemes most often used tend to be rather simple but seem reasonably efficient.

How is this done? Essentially by

1) mapping a naturally occurring situation in a laboratory setting (which may be computerized or not)

2) then putting experimental subjects into the laboratory setting, and

3) finally studying the behavior of these subjects in the laboratory setting.

The implicit assumption here is that we can indeed learn from these laboratory experiments and make inferences from the behavior of laboratory subjects to that of actors in naturally occuring settings. The assumption is, in other words, that we can learn something from the behavior of laboratory subjects in bribery games (Abbink et al. 2002) and moonlighting games (Abbink et al. 2000) or even more ambitious experimental attempts to understand the causes of corruption (e.g., Azfar & Nelson 2002). While this assumption is not completely innocuous (Hertwig & Ortmann 2001, 2001a), by and large it is correct (Kagel & Roth 1995; Plott & Smith 2003). Specifically, systematic changes in design and implementation of an experiment bring typically about systematic changes in subject behavior. And all this at rather low cost.

Klemperer (2002) gives nice examples of subtle differences in the design and implementation of auctions that had dramatic differences in the revenue that state governments could capture. Had governments tested the auction mechanisms experimentally, they would have very likely been able to avoid some very expensive failures. Similarly, De Maria (2002) describes the dismal failure of so-called whisteblower laws in Australia, New Zealand, South Africa, Ireland and the United Kingdom. (Whisteblower laws are meant to induce those aware of acts of bribery and cronyism to blow the whistle on the perpatrators, without having to fear that there will be repercussions for them.) It's obvious that the whistleblower laws in Australia etc. were not tested in the laboratory before they were

implemented.

Relatedly, we have studied Czech anti-corruption laws which have rather incentive-incompatible properties. Take as example the "regret" provision in the Czech anti-corruption law which – while well-intentioned – under certain conditions allows someone who has offered or promised a bribe to report this to the police or a public prosecutor and get off scot-free. At the same time, the person who accepted the bribe, might see significant prison time. It should be obvious (but obviously wasn't to those who wrote the law) that this scheme has undesirable incentive properties in that it gives the person who initiates the bribe the possibility to punish the bribee if he or she does not deliver on the proposed (illegal or sweet) deal. This provision of Czech anti-corruption law is hence another classic example where some experimental testing would have quickly revealed the perverse incentive effects. Similarly, we will design and test in the laboratory various anti-corruption measures that would be both incentive-compatible and effective.

Specifically, we intend to pursue experiments along the following three major directions:

1) It seems widely accepted that corruption is more pervasive in some areas (state bureaucracies) than others. Our research question is whether this is a function of self-selection of certain types of people into certain professions. A simple way to test this conjecture is to run well-known experiments such as the trust game (Ortmann et al. 2000), or the moonlighting and bribery games (Abbink et al. 2000; 2002) on subjects that are recruited from various settings.

Our working hypothesis is that we will not see any significant differences. A confirmation of our hypothesis would strongly suggest that the problem is not that people in some professions are more

corrupt than others but that the incentives to engage in bribery and cronyism differ across professions. This result would suggest strongly that the appropriate design and implementation of incentive systems is the real problem.

2) We will test – through especially designed experiments that map naturally occurring situations into the laboratory – the incentive compatibility of the "regret" provision discussed earlier, other whisteblower provisions, and various strategies of entrapment. We also will design incentive-compatible mechanisms that are likely to undermine attempts of bureaucrats and others to extract bribes (e.g, when buying an apartment or house, or starting a firm) or to overcharge customers.

3) We will try – through especially designed experiments – how a society drifts in pervasive, and widely accepted, corruption. And what to do about it. An interesting theoretical argument in this context is Tirole's (1996) suggestion that corruption is associated with *hysteresis* causing the corruption to increase faster than decrease due to the fact that the corruption "equilibrium" is partially depending on the people's expectations of other people's corruption behavior.

Expectations, of course, are notoriously difficult to control in naturally occuring settings but can be easily controlled in lab settings.

The major item of our grant is ear-marked for "subjects payments"; since experimental economics is not all well-established in the Czech Republic, a few concluding words on this item. In contrast to most psychologists, all experimental economists use such payments. This is a well-established and strictly enforced convention in experimental economics (e.g., Davis & Holt 1993; Kagel & Roth 1995; see also Hertwig & Ortmann 2001, 2001a, and the various comments on our target article) that can not be violated if one wants to get one's work published. It also is a practice with a good rationale. Imagine

the participants in an experimental bribery game (e.g., Abbink et al. 2002) that have to make decisions only hypothetically. Clearly, when nothing is at stake, the participants are likely to have very different incentives to bribe or accept bribes. In short, one can not do experimental work in economics without subject payments.

We note in closing that, as part of a generous grant by Bank Austria, CERGE-EI established in the Spring of 2001a mobile experimental laboratory. The Laboratory -- to the best of our knowledge the first mobile laboratory in the world -- can be used for conducting computerized experiments with up to 14 participants. Its mobility allows us, by bringing the lab to our participants rather than participants to the lab, to access subject pools that are otherwise difficult to reach. The current configuration allows us to implement real-time interaction between participants, recording of their actions, processing of databases, etc. Software platforms used for experimental designs vary from specialized software packages to a wide range of programming languages including web-based script languages such as Perl or ASP. The latter allows us to use Web-browsers (Internet Explorer or Netscape Navigator) as the experimental environment. More details are available at http://195.113.12.52/ortmann/BA-PEL.htm

Time Line:
January 2004 - December 2004:
Review of the literature and continued identification of important corruption problems, design of appropriate anti-corruption measures, and implementation of pilot experiments.
January 2005 - December 2006:
Experiments and, if necessary, further theoretical refinements. Writing up the results.

References:

K. Abbink, B. Irlenbusch, E. Renner (2000), The Moonlighting Game - An Experimental Study on

Reciprocity and Retribution. Journal of Economic Behaviour and Organization, 42, 265-77.

K. Abbink, B. Irlenbusch, E. Renner (2002), An Experimental Bribery Game. Journal of Law, Economics, and Organization, 18, 428 -54.

O. Azfar, R. Nelson Jr. (2002), Transparency, Wages and the Separation of Powers: An Experimental Analysis of the Causes of Corruption. IRIS working paper.

M. Bohata (2000), Ethical Challenges of Institution Building in New Democracies: The Case of the Czech Republic. Presentation at Second ISBEE World Congress in Sao Paulo.

CSE(2000), Ekonomika a korupce (Economics and Corruption), 23rd seminar of the Czech Economic Society, December 2000. Summary published as Frait, Jan (2001), Finance a uver, 51(5): 299-302.

CSE(2001), Psychologie proniká do ekonomie: máme tleskat nebo se bát? (Psychology Invades Economics: Shall We Applaud or Be Afraid?), 24th seminar of the Czech Economic Society, January 2001. Summary published as Kotlan, Viktor (2001), Finance a uver, 51(5): 303-305.

D. Davis, C.A. Holt (1993), Experimental Economics. Princeton: Princeton University Press.

W. De Maria (2002), Common Law - Common Mistakes. The dismal Failure of Whisteblower Laws in Australia, New Zealand, South Africa, Ireland and the United Kingdom..Paper presented to the International Whistleblowers Conference, University of Indiana, 12 - 13 April 2002.

EBRD (1999), Transition Report, European Bank for Reconstruction and Development, London.

EC (1999-2002), Accession Report on the Czech Republic, European Commission, Brussels.

S. Jurajda and L.Lizal (2002), Czech Republic 2002: Invited to the EU. CERGE-EI.

GfK (1998), Korup…ni klima v „R - Retrokorupce (Corruption Climate in the Czech Republic - Retrocorruption). GfK Prague, Internal Report No. 90.276.

GfK (1999), Korup…ni klima v „R 2 (Corruption Climate in the Czech Republic 2). GfK Prague, Internal Report No. 40/151.

J. Hanousek, Lizal (2001), Czech Republic 2001: Mixed Blessings. CERGE-EI.

R. Hertwig, A. Ortmann (2001), Experimental practices in economics: A methodological challenge for psychologists? Behavioral and Brain Sciences, 24, 383-403.

R. Hertwig and A. Ortmann (2001a). Money, lies, and replicability: On the need for empirically practices and interdisciplinary discourse. Behavioral and Brain Sciences, 24, 433-44.

J. Jurajda, L. Lizal (2002): Czech Republic 2001: Invited to the EU. CERGE-EI.

J. Kagel, A. Roth (1995), The Handbook of Experimental Economics. Princeton: Princeton University Press.

D. Kaufmann, W. Shang-Jin (1999), Does 'Grease Money' Speed Up the Wheels of Commerce?," NBER Working Paper No 7093.

P. Klemperer (2002), What Really Matters in Auction Design. Journal of Economic Perspectives, 16, 169 - 189.

E. Kocenda, L. Lizal (2001), State of Corruption in Transition: The Case of the Czech Republic, The Emerging Markets Review, 2, 138-60.

L. Lizal, E. Kozenda (2001), The Paradox of Czech Crusaders: Will They Ever Learn the Corruption Lesson? (Corruption and Anticorruption in the Czech Republic). CERGE-EI WP No. 171, April 2001.

P. Mauro (1995), Corruption and Growth. Quarterly Journal of Economics, 110, 681-712.

P. Mauro (1998), Corruption and the Composition of Government Expenditure, Journal of Public Economics, 69, 263-79.

K. Murphy, A.Shleifer, R.Vishny (1993), Why Is Rent-Seeking So Costly to Growth? American Economic Review, 83, 409-14.

OECD (1999): OECD Communication Outlook, OECD, Paris.

A. Ortmann (forthcoming), Review essay of Charles R. Plott's collected papers on the experimental foundations of economic and political science. Journal of Economic Psychology.

A. Ortmann, J. Fitzgerald, C. Boeing (2000), Trust, reciprocity, and social history: A re-examination. Experimenal Economics, 3, 81 - 100.

C.R. Plott (2001), Equilibrium, Equilibration, Information and Multiple Markets: from Basic Science to Institutional Design. Paper presented at Nobel Symposium 2001.

C.R. Plott, V.L. Smith (2003), The Handbook of Experimental Economics Results. Amsterdam-New York: Elsevier-Northholland..

M. Potucek (1999), Not only the market: The role of the market, government, and the civic sector in the development of postcommunist societies, Budapest and New York: Central European University Press.

C. Prendergast (1999), The provision of inentives in firms. Journal of Economic Literature, 37, 7 - 63.

S. Rose-Ackerman (1999), Corruption and government: Causes, consequences, and reform Cambridge University Press, Cambridge, New York and Melbourne.

A.E. Roth (2002), The Economist as Engineer: Game Theory, Experimental Economics and Computation as Tools of Design Economics, Econometrica, 70, 1341 - 78.

A. Shleifer, R. W. Vishny (1993), Corruption. Quarterly Joural of Economics, 108, 599 - 617.

V. Tanzi (1998), Corruption Around the World: Causes, Consequences, Scope, and Cures. IMF Working paper 98/63.

V. Tanzi, H. Davoodi (1997), Corruption, Public Investment, and Growth, IMF Working Paper WP/97/139.

J. Tirole (1996) A Theory of Collective Reputations (with Application to the Persistence if Corruption and to Firm Quality), Review-of-Economic-Studies. January 1996; 63(1): 1-22.

World Bank (2000): Anticorruption in Transition: A Contribution to the Policy Debate, The World Bank, Washington, D.C.

P.J. Zak and S. Knack (2001), Trust and Growth, *Economics Journal*, 111, 295 - 321.