ASYMMETRICAL INFORMATION AND CORRUPTION

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Abstract: *Corruption is a phenomenon a lot of dimensions. It makes itself felt in economy, it has its moral, social, political and cultural extent. Submitted paper deals with the microeconomic aspects of corruption. Main purpose of this paper is refer to numerous relationship between corruption and information failure of market. With use of the paper coming out of the principal-agent theory, there is discussed the possibility of restricting corruption by setting of alternative wage regime in public administration.*

Key words: asymmetrical information, corruption, moral hazard, adverse selection, principal agent problem, optimal wage regime

1   Introduction

Asymmetrical information is very common cause for the failure of allocation function of market. *Secret activities* (i.e. the activities that it isn´t possible to examine without extra costs, e.g. the method of innovation the production of competitor) or *secret information* (it is the situation when one side of market has more useful knowledge than other side; for instance, the seller is better informed of selling product than the buyer). At the present time, information is very valued good, however, it is need to spend not only ample time, but also financial resources for their acquisition. To have information, it means to aquire the competitive advantage and it is the reason that leads economic entities at maximization of their target function to selecting the methods as the fastest to get information in needful quality and required quantity.[1] Individual economic entities markedly differ by the quality of their information; some economic entities have much better information than the others. Theoretical analysis relating to relationship of asymmetrical information to problematic of corruption is the aim of submitted paper.

2   Moral hazard and adverse selection

The position of asymmetrical information is representative form of possible corruption effects in microeconomic sphere and as such it has the number of negative falls for the function of markets. In definite cases it can lead to market deformation, demonstrative by *moral hazard*[2] or *adverse selection*[3]. The canal of corruption is created when "expertise" originates in information from officials and in the situations of dependence business entities at bureaucratic resolutions. It is concerned, e.g. devoted information about conditions and the background of privatization process, about conditions and the height of competitive offers, about conditions of contract, service linked with acquirement of competitive advantage, timely warning of monitoring, police etc. In all cases, the corrupt entity urges for the acquirement of advantage by way of *limitation on uncertainty*. On the other hand, officials

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[1] New theory of information was developed in economic theory at the scene of the Chicago school by G.J. Stigler in *The Economics of Information*, 1961.

[2] It generally represents the activity of informed market entity that with maximization of its utility limits the utility of the others - uninformed entities of market. In markets with asymmetrical information, better informed entities will presume their position at the expense of less informed entities.

[3] It generally presents the process when "less advisable" entities of market, demanding or supplying, will participate in market exchange more often than the others. Consequently, superior products are driven out of market, eventually, it leads to situation when on the basis of self resolution the competent employees or the employees with better qualification go away and only the employees less qualified and less competent are staying.

play on their position and very often create conditions that lead to this kind of bribery, for example when ones cause time-lag and rigid aplication of requirements. Of experience, there are known cases that there, where non-impugnable informational duty[4] of public administration empolyees is formed, "its customers" are often meet with reluctance to afford a required information.

The problem of asymmetrical information is nowhere only the domain of public administration. To the most widespread forms of intradepartmental economic criminality pertain: <u>industrial espionage</u>, sophisticated computer frauds and not allowed providing of information. The measure of this criminality in the Czech Republic grows and it is the privilege of middle and higher management. It stands to reson that the motivation based only on higher position and earning of these employees mulfunctions. According to the last research[5] there became the victims of economic criminality almost 63 % Czech companies within years 2004 and 2005. Computer criminality, <u>industrial espionage</u> and not allowed providing information participate over most 20 % on the criminality of employees of interwieved companies, improper use of information at <u>share dealing</u> introduce next 6 % informants.

According to [ANDVIG and FJELDSTAD, 2000] it isn´t at the explanation of corruption so significant problem of adverse selection, but rather a moral hazard. *However, adverse selection is very important at dissemination of corruption.* Officials don't generally have sufficient information about types of managers, honesty and dishonesty of subordinate officers, about their activities and corruptibility. For example a manager will have more knowledge about his qualificiation and skills than owner who employed him. Manager can accept briberies, defalcate resources or spend little effort during his employment until it is possible to monitor manager´s activities without significant expenses. Moreover, in the background with developed corruption relationships will stay only those that will be willing "cooperate" [FRANK, 1995]. At first, the problem is the resolution of potential bad choice of employees and then how builds up a system that will motivate employees to honesty and solve the problem of moral hazard. There have a chief (or generally principal) basically two possibilities: either provide incentives for honest behaviour of agents or increase probability of monitoring and penalty and thereby increase probability of detection. Following picture illustrate the problems of asymmetrical information (Picture 1: Problems of asymmetrical information).

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[4] In the Czech republic rising on the basis of the *Law about free access to information* (Law no. 106/1999 Sb. Czech republic, in a word of following rules).
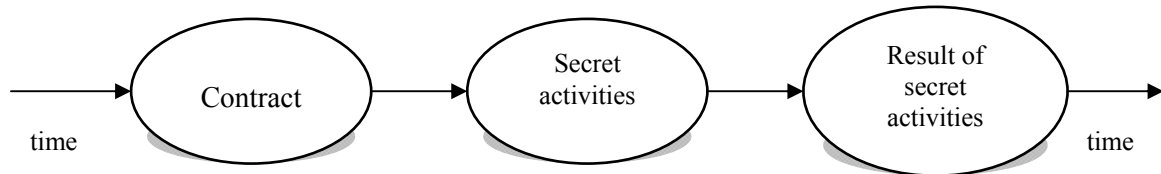[5] The paper of PricewaterhouseCoopers company.
Accesible (on line) at: http://www.pwc.com/extweb/pwcpublications.nsf/

Adverse selection
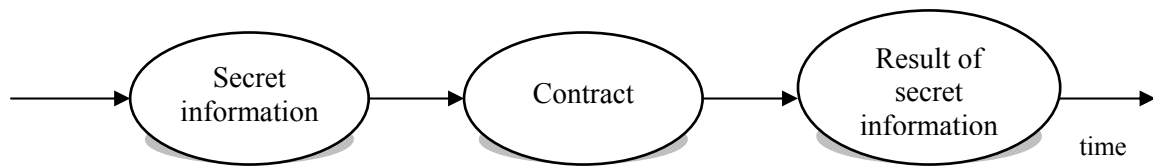
Moral hazard

Pic. 1: Problems of asymmetrical information[6]

Nowadays in economic theory we can notice relatively frequent application of moral hazard problem in new institutional economy namely first in context of so-called ***problem of substitution (problem of agency or principal-agent problem, P-A).*** Generally it is the situation when one entity (owner-principal) delegates its rights to another entity (representative-agent) that represents him and that is under contract (formal or informal) to supply and promote in certain sphere the interests of principal. The compensation for it: negotiated payments or enjoyment that principal provides to him. The P-A problem generates on all levels of hierarchical organization. Agent is generally much better acquaint with real status of affairs in the field in which represents principal, and that is why it can presume on its position and its informative superiority for its benefit and represented principal so derogate. *"Bureaucrats, rather than minister taking around specific office, have detailed information of supply service - they are acquainted with prices of inputs, trends of demand, etc."* [JAKSON, BROWN, 1990:199]. It makes it possible not only the privilege position of bureaucracy but also the appearance of X-unefficiency.[7] However, the objectivity of these deductions will always depend on moral characteristics of participated entities. It stands to reson that there exist serious expectations for the asymmetry of information and it especially then it isn´t possible to well monitor conditions for taking advantage of agents´position (or generally subordinated). In the majority of cases the principal have to spend very high costs to will be relatively informed of the activity of agent.

3   Application of P-A theory and solving corruption in public administration

Theoretical analysis (that appears from P-A problem) evokes to idea that would acceptably increase the salaries in public administration in that there would be solved the problem of bribes. The paper concentrates on tax administration; nevertheless, this model can be applied to public administration in general. The authors assume that the main principal's (i.e., tax authorities) objective is to maximize net tax revenues of wage costs, monitoring costs and revenue fraud. Tax collectors (the agents) are divided into two categories-the honest and

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[6] Andvig and Fjeldstad,, 2000: adjustment and translation - author

[7] The signification for situation when organization (public or private) don´t achieve with specific combination of inputs to turn out maximum output. The reason is mainly low motivation of management to efficient reducing of costs. The term was for the first time used by american economist Harvey Leibenstein in „Allocative Efficiency vs.X-Efficiency", American Economic Review, June 1966.

the dishonest. Honest tax collectors are predisposed to honesty. They put an infinite value on their integrity because they are unwilling to accept a bribe at any price. Dishonest collectors seek possibilities to maximize their private income and can be induced to behave honestly. These dishonest fellows collude with taxpayers (clients) in terms of fraud tax revenues and the penalty in the case of their detection.

Ideal tax administration ought to hire only the predisposed honest collectors but *ex ante* it is impossible to tell them from the corruptible ones. Thus, an adverse selection problem is the principal problem.

Let γ be the fraction of potential tax collectors who are corruptible in the pool from which tax administration recruites. This fraction of collectors indicates the level of honesty among collectors. It could be illustrate the level of corruption in public administration and denotes a well-established ethic of loyalty and honesty within the civil service [McLaren, 1996]. Next-let q is a probability that briberies will go undetected. However, if a collector is detected he is fired. Three different wage regimes are existing: (1) *reservation wage* that is equel to the opportunity cost, or the wage the tax collectors could earn in alternative employment; (2) *efficiency wage* which is above the wage the tax collector could receive in his alternative employment, and thus embodies a rent component that is supposed to deter corruption. The efficiency wage is an increasing function of q; (3) *capitulation wage* which is below the opportunity cost, since at least the potential corruptible tax collectors would be willing to work for less than their opportunity wage, knowing that they will be able to make additional income from bribery. [BESLEY and McLAREN, 1993] analyse each of these wage regimes in terms of their implications for government net tax revenue.

In the model, the *reservation wage regime* makes sense where monitoring is effective (a low q), and dishonest tax collectors are dismissed in case of their detection. This wage regime is representing moral hazard problem because of the mixture of honest and dishonest collectors. Dishonest collectors will always accept a bribe if they are paid the reservation wage. This wage they can earn anyway in alternative employment. Whenever, a fraction (*1 - q*) of dishonest collectors is caught and replaced, number of civil fraud will diminish. Over time, the dishonest fraction of tax collectors will therefore be weeded out, leading to increased tax revenues. If γ is small, the reservation wage is optimal (in term of revenues), until motivation of all honest tax collectors takes effect. To pay out the lower wage than the reservation wage, it is not too economising by reason that the most of honest tax collectors will be headed to dishonesty. If tax collectors are paid the efficiency wage, they refuse bribes, and there is not civil fraud.

However, this regime is effective from a net revenue standpoint (i.e., the objective function of the principal) and monitoring is strong enough (a low q), wage incentives to corruption in a rare occurrence. Thus, if γ is large and q is small (effective monitoring), the cost required for the efficiency wage is small and cost for paying a corruptible workforce is high (a high γ). In this case, efficiency wages are optimal. If monitoring is weak and the workforce is highly corrupt (γ and q are both large), efficiency wages are too expensive to be attractive. It means that the wage that deters honesty will be high and the wage cost could exceed tax collections.

If the government pays *capitulation wage*, only dishonest collectors will be attracted to the tax administration. In this case, the government is giving in to the problem of corruption, because it will be accepting an entirely dishonest workforce that will be inclinable to corruption practices. In this situation when γ and q are both large, efficiency wages are too expensive to be attractive and the reservation wage would simply allow most of the tax collectors to bribe at the expense of government. Under these circumstances, the government

might decline tax collector's wages to reclaim higher revenues. Thus, capitulation wages become optimal. In this situation, the government will collect revenues only when it catches corruption in action, i.e., in time (*1-q*).

Under efficiency wages, tax collectors are rewarded for not exploiting opportunities to behave dishonestly, and under capitulation wages, collectors are invited to suplement their incomes through corruption.

While a reservation wage regime which seeks to augment honesty over time through monitoring and appropriate hiring and forint policies represents the most suitable long-term objective, it may make sense to pay tax collectors efficiency wages in the short and medium term, when adequate monitoring can be guaranteed. Next table (Tab. 1: The optimal wage regime (X) under different institutional and administrative conditions) summaries the "optimal" wage regimes under different institutional and administrative conditions.

**Tab. 1:** The "optimal" wage regime (X) under different institutional and administrative conditions

	q - low (efficient monitoring) γ - small (few potential dishonest agents)	**q** - low (efficient monitoring) γ - large (many potential dishonest agents)	**q** - high (inefficient monitoring) γ - large (many potential dishonest agents)
Reservation wage	X		
Efficiency wage		X	
Capitulation wage			X

Resource: Andvig and Fjeldstad, 2000:111, translated by author

The model presented above may help explain some observations about public administration in developed countries. Anecdotal evidence indicates the existence of pay structures resembling capitulation wage regimes (where the official salary is well below the opportunity incomes), however, where the staff receive unofficial incomes far in excess of the reservation (opportunity) wage level, and where there is strong demand for the specific jobs [TANZI, 1995:174] reports, for example, that in an African country, *"...three years ago, the government reduced the wages of cystome officials to zero for six months under the assumption that they could take care of themselves."* A probably extreme position taken in this context refers to the late President Mobuto Sese Seko who advised Zairian civil servants that: *"if you want to steal, steal a little in a nice way".*

Also, e.g. [RIJCKEGHEM and WEDER, 1997], document empirical evidence about the relationship between public sector wages and corruption. They hypothesise that low salaries force public officials to supplement their incomes by taking bribes, while high salaries containing high alternative costs are disclosing tricks.

In a sample of 28 countries they find a significant negative influence of public sector salaries relative to wages in the manufacturing sector on the level of corruption. Corruption seems to be less in countries where bureaucrats are relatively well paid compared to private sector employees. This relationship is illustrated in following graph (Picture 2: The association between corruption and wages in the civil service). The graph shows that an increase in the public sector wage level, in proportion to wage in the private sector, may contribute to reduce corruption. [RIJCKEGHEM and WEDER, 1997] argue that: "If public sector wages were doubled, the corruption index of a country will be improved by the order of 2 points in the corruption index (CPI) of Transparency International."
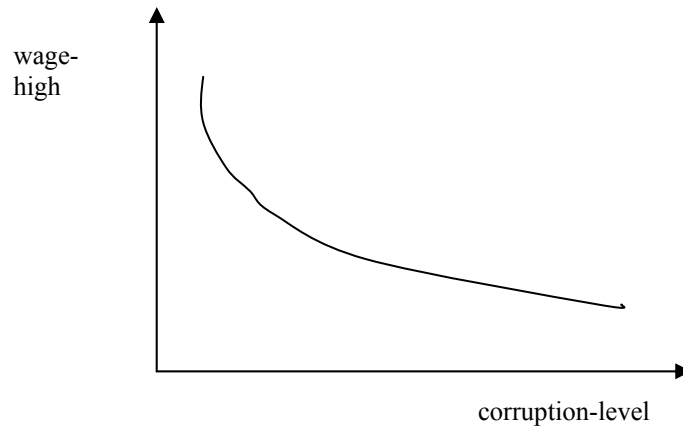
Pic. 2: The association between corruption and wages in the civil service [8]

4   Conclusion

Asymmetry of information (as such) is not always necessary to consider as a problem with which markets would not cope. However, it acquires form of a market failure; there is not other feasible solution than regulating. Besides of national institutions, this function can be performed by various professional associations as are audit or medicine chamber, asociation of travel agencies and another. Fighting corruption only on the basis of wage incentives may be extremely costly to the authorities, and will most likely only have limited and momentary impacts if not combined with other measures. For instance, under circumstances with weak or non-existent auditing and monitoring capacity, and pervasive propensity for corruption, the low salary level observed in some public institutions in developing countries, may actually be too high in the sense that even lower salaries would not lead to increased corruption. Furthermore, there may also be a problem mentioned in Rijckeghem's and Weder's analysis when corrupt (and poor) countries tend to have poor budgetary performance and, thus, may keep civil service wages low as a consequence. [Treisman (2000)] also investigates the impact on corruption of the average government wage as a multiplier of per capita GDP. The results of these studies are ambiguous. Even other studies don't find robust evidence for impacts of public salary levels on corruption.

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