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The co-operation between a private and a public company from the perspective of desirable risk allocation

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Abstract: Implicit and explicit risks implied in contracts are allocated optimally if the risk-taker is always the party who can manage risk at the lowest cost. This principle shall apply even if one of the parties work in the public sector, and the other in the private sector. As risk-attitude of contacting partners is of vital importance in risk-sharing, this paper reviews the key factors influencing risk attitude of governmental organizations and their leaders, government officials elected or appointed for a cycle, and business organizations and their managers. Factors resulting in non-optimized risk allocation are discussed in detail, for example, public sector bureaucrats elected for a cycle focus on outputs of great public interest and tend to discount targets to be realized after the election cycle, and therefore projects more risk appetite than previously assumed. In business organizations principal-agent relationship and lack of entrepreneurial orientation are key factors, whose significance increase in proportion to the size of business and make companies more risk-averse. Short-term contracts, partnership of small-scale businesses, or if there is too much at stake (e.g. a large value bids) for the scale of a company give less space for such distorting factors, and reduce the possibility of risk allocation detrimental to the public sector.

Keywords: Risk Attitude, Risk Allocation, Public-Private Co-Operation

1. Introduction

In legal term written contracts provide framework for the vast majority of organization's co-operations. All the conditions and other terms considered relevant, including rights and duties of the parties as well, are recorded in written contracts.

Most written agreements detail economic and financial arrangements of the parties, which mean they contain all the project-level risk sharing related to the settlement even if not each of the risks is identified individually. In case of the risks not displayed in itemized form among the terms or conditions of the contracts, general (contractual) legal rules or specified norms provide guidance. It does not mean that a specific risk sharing case cannot be disputed or litigated afterwards due to different interpretations of the law, to the complexity of the situation or because of a legal void.

In complex cases standards could help the judges as well as contractors. There are professionally accepted, recommended pre-engineered package solutions for cost and risk sharing in several areas of the business such as INCOTERM clauses in foreign trade or sample contracts for taxation of cross-border transactions between states.

Parties in determining the details of the contract are continuously pricing the risks, then burdening themselves with the risk and passing the risk-premium to the other party or pass the risk to the others and bearing the risk premium.

As a consequence, an optimal risk allocation is achieved between them when each of the risks is burdened by the party who can handle it in the best (the cheapest) way. In perfect competition every rationally behaving contractors are well informed and equally risk-averse. The parties evaluate all the risks equally and properly, and chose the cheapest version of risk allocation, undertake or pass each of the risks accordingly, create a series of choices, and finally fix the economically most reasonable risk-sharing.

Therefore, optimal risk allocation is ensured quasi-automatically in the contracts. Unfortunately, in the real business world, outside such pure economic paradisiacal situation, everything is different especially if the contracting parties are a private and a public organization, like in case of

PPP projects.1

In the followings the characteristics of risk behavior of typical public and business organizations are presented, namely the risk attitude of company and the office. In this paper we list the factors influencing their attitudes on the basis of economic, psychological, and social psychological researches that examined the risk attitude of decision-makers and organizations. After that, we try to draw the consequences regarding to what might hazards the optimal risk allocation between these two actors.

2. Factors Influencing the Risk Behavior of a Company

Uncertainty and risk are regularly implicated in everyday language as negative terms; they are related to threat and danger, and associated with the possibility of loss. Although business risk is also linked to the demand of caution and prudence, however, it is not only the chance of loss, but also conceals the possibility up to large gain. It is known that the ultimate driving force of business is interest in profit, and risk is the source of profit according to Knight's classic interpretation [1]. Taking risk is one of the attributes of business, and that is why business organizations cannot behave permanently and excessively in a risk-averse way.

Risk behaviors of organizations can vary in a wide range, and even the same organization may behave differently in different situations, so we should definitely consider the factors that shape a business organization's risk attitude.

In the followings we summarize the impact of several characteristics of organizations and their decision-makers on risk behavior.

A Hungarian study lists eight explanatory variables that are relevant in the case of a business organization to assume the risk: organizational culture, senior management, group effect, competence, reward system, environment, and the past performance of the organization, such as the interaction of all these factors [2]. In simple terms the influencing components are the decision makers' personal characteristics, some organizational characteristics, and environmental impacts explain the organization's attitude toward risk.

3. The Personality of the Business Organization's Decision Maker

According to basic psychological knowledge, personality can be characterized by five main features (i.e. the Big Five). These are: openness, conscientiousness, extraversion, friendliness, and neuroticism. Interestingly, only conscientiousness is correlated positively with performance, and lack of emotional stability is negatively correlated with performance [3]. Risk preference does not show a strong relationship to none of the elements of the Big Five, either, although there is weak but detectable relationship between risk behavior and four elements of the Big Five. On one hand openness and extraversion have slightly positive, whereas conscientious and friendliness on the other hand have slightly negative correlation with risk preferences [4].

Zuckerman's researches [5] show that risk-takers are strongly attracted to novelties. According to the experiments of Hoch, Deihton [6] and Raju [7] similar to the context in case of tolerance of ambiguity, the personality who hardly tolerates ambiguity is usually more risk-averse. There is also detectable correlation between self-confidence and risk-taking, as Krueger and Dickson [8] pointed out with psychological researches; higher level of self-confidence is often coupled with stronger risk-taking behavior. The relationship between the pessimism and anxiety is the opposite. Maner's studies [9] demonstrate that because of pessimist or anxious individuals overestimate the potential dangers, they show much lower risk appetite than others. Relatively strong is the relationship among psychotics, impulsivity, and risk-taking. According to Dahlback's [10], psychopathic individuals demonstrated greater risk-taking propensity. There is also a strong correlation between risk-taking and criminality. Dahlback emphasized that anti-social behavior and individuals with criminal inclinations show higher risk predispositions.

Further personal characteristics in strong relation to risk-taking are innovativeness, tolerance, and performance-orientation [11]. According to Schumpeter the core of the characteristics of entrepreneurship is innovativeness; Knight emphasized the importance of independent and confident judgments, while Johnson focused on increased performance-motivation. In case of business organizations decision makers assumingly have strong entrepreneurial orientation. The term, spread by Lumpkin and Dess [12] covers the following personalities and dimensions: innovativeness, proactiveness, risk-taking, autonomy, and competitive aggressiveness, of which innovation plays the key role. As innovation is always risky, a prerequisite for risk-taking is evidence. Several studies have pointed out higher level of business optimism, selfishness, masculine attitude, impulsivity and excessive self-confidence as well. Each assumes an above-average risk tolerance.

Although entrepreneurial orientation of business decision makers seems to be obvious, in fact it is not. Stewart et al [13] for example, demonstrated that senior managements in business organizations do not necessarily identify themselves with entrepreneurial orientation. While a self-employed entrepreneur does his business under his or her own name and exclusive risk and therefore is compelled to bear full responsibility for each of his decisions, the individual risk appetite of senior managers of large business organizations can be much lower.

Due to the principal-agent relationship they are able to reduce their individual responsibility and the interests of

1 PPP can be described as a long-term, contractually regulated cooperation between public authorities and the private sector to carry out public assignments, in which the requisite resources are placed under joint management and project risks are apportioned appropriately on the basis of the risk management skills of the project partners. (2006/2043 INI European Parlament).

them is not limited to the company profit interest that is why their risk averse can be higher. Moreover, in large companies, especially in monopolistic situations, even the organization itself limits the prevail of entrepreneurial orientation of managers with corporate culture elements, group decisions, etc., so it may be suppressed if the circumstances do not force the big company to behave in a less risk-averse way.

However, some researches show that entrepreneurs' risk appetite is not correctly measured due to sampling and measurement errors, which distort it upwards, since the evaluation of risk behavior is mostly based on self-assessment. Also because risk-taking is the essential component of business organizations' thinking of managers, in surveys managers overestimate their own desire for risk and understandably project more enthusiasm of normative risk-taking on paper than in real decisions [14].

4. Internal and External Endowments of Business Organizations

The internal reward system as well as the outer environment also influence the risk behavior of business organizations, since both can reward or punish risk-aversion in the decision making process. If incentives only reward the positive outcome and punish the negative consequences of the decision, risk-taking is a less advisable type of behavior compared with an incentive system, where the effort to combat the challenges is also rewarded encouraging with it the risk-taking.

The role of the external environment is similar. If the business environment surrounding the organization is variable and dynamic, a proactive, risk-seeking strategy can be advisable and successful; however, ruthless competition and hostile business environment can drastically restrain the risk-taking appetite of decision-makers.

No doubt those past experiences creating a background for present decisions of an organization also affect the decisions of today. Previous attitude to risk determines the behavior of today, because the currently available assets are the reward of the past risk-taking behavior, although it is still under debate how these experiences are incorporated into present behavior. Tversky and Kahneman called attention to the phenomenon that people in a good position are tending to protect their resources by tending to avoid risks those in a bad positions are taking more risk probably with the feeling of nothing to lose [15]. This is contradicted by the results of March getting at the opposite conclusion: lower risk threat is perceived at people in good positions, as the availability of sufficient amount of resources increases the likelihood of higher-risk-taking [16].

Ghosal and Loungani studied the role of firm size in risk behavior. They found that higher level of risk-averse was detectable in industries dominated by small-sized companies. Although there are no a priori arguments why the systematic risk preference would be variable in size, but several factors have been found that can explain the above effect. The consequence of a mistaken investment decision increases small businesses' bankruptcy risk.

Another indirect explanatory factor is the availability of external sources in financing for larger companies. Due to information asymmetry between the lender and the borrower where the borrowers are in a better position, uncertainty regarding to an investment is less deterrent for them.

It is also possible that due to wrong investment decisions, sunk costs also play a role in risk attitude. For large companies it is less burdensome because of the smaller loss of capital selling and the better chances of capital reallocation within the company [17]. Some researchers suggest that the age of companies is also relevant concerning the risk behavior. Lumpkin and Dess [18] found that risk-taking can be an effective strategy for companies in growing stage, especially in dynamic environment. It can be advisable both for the previously successful and unsuccessful organisms.

Risk aversion can be advisable for companies in a stage of maturity operating among active and aggressive competitors, particularly if they has been successful in building sufficient amount of resources. The results also reveal that there is no per se relationship between firm size and risk behavior, since the latter is the resultant of complex effects.

To sum up the above mentioned results, a business's risk aversion is weaker if the organization operates in extreme (e.g. in monopolistic) situation. As far as business size is concerned, smaller companies tend to be risk-averse if in growing stage and in the beginning of the life cycle, especially in dynamic environment. The decision-makers of the organizations influence the company's risk behavior with their risk attitude quite dominantly.

Entrepreneurial orientation, including risk-taking, is required for the decision-makers of business organizations. Entrepreneurial orientation is, however, associated with the business's internal incentive system and the external business environment and can be very low if either of them does not encourage but punishes risk-taking. In larger and older organizations the behavior of decision-makers shows less risk aversion and weaker entrepreneurial orientation. However, it is likely that the promise of big gain can move out them from this position.

5. Risk Behavior in Government Organizations

There is a common attribute in all activities of business organizations that is the interest in profit preventing excessive risk aversion. In the case of organizations in the public sector it is difficult to find similar common driving force.

Economics have long been interested in the behavior and decision-making processes of public sector organizations. Since 1765, when French philosopher Vincent de Gourmay bureaucracy concept came to light, terminology describing the bureaucracy phenomenon has been rather negative. In the archetype of bureaucrat there is a infinitely conformist person sitting behind his desk, and tends to abuse his power and keeps the rules even against the common sense, not taking any risk, and keeps defending himself. In the next two hundred years bureaucrats became just the opposite of entrepreneur who creates the basis of prosperity.

Max Weber's sociological works reassess this phenomenon; in his view the bureaucratic organization of modern societies is an inevitable consequence of rationalization. However, the Weberian bureaucracy is an ideal type, which functions rational and reliable way, bureaucrats are expertized, and follow clear administrative roads, but disfunctionalities of these organizations (such as like internal power struggles, office propagation, slowness, and following self-interest) were already empirical evidences in that time [19]. Currently the most critical school is public choice based on the works of many, e.g. Niskanen, Wolf, Wagner, Buchanan, Tullock and Stigler.

Niskanen's doubled office model shows bureaucrats who are misusing their power [20]. Another basic work is the much-quoted Wagner's Law, which warns of the dangers of growing role of the state. Stigler uses statistical data series to prove how bureaucrats together with the industry lobby groups can hijack the original intentions of the legislator, following their own interests instead of public interests [21].

6. Risk Management of Public Servants

Public officials' risk aversion essentially comes from the lack of profit motive, as risk-taking does not directly promises reward, while a possible administrative failure could hamper carrier advancement, although the chance of job loss is usually very small. Business organizations' employees are called to account for inefficient operation not only by the owner or his agent (wage cuts, layoffs), but by the market itself, because their behavior results in direct loss to the firm. But an office's existence follows a different logic. Therefore, bureaucrats can exercise other behavioral patterns and different procedures to reduce risks.

These activities may be carried out more freely if there is no competition with other offices. Niskanen calls attention to the fact that just because of the above facts, office consolidations undertaken in order to increase efficiency are useless. Eliminating duplication and achieving centralization mean eliminating competition between offices, so in this way monopole position is provided to the bureaucratic organizations [22]. Niskanen, among other researchers, also reveals information asymmetry between the principal and the agent, which may be even a greater problem in government offices than the principal-agent problem in business organizations.

Public servants like anyone else, intend to maximize utility, but instead of maximizing profit they try to maximize their power [23]. This is in line with Niskanen 4P model (power, prestige, pay and promotion), the bureaucratic aspects of the utility function.

Generally, all these items increase together with the size of the office, consequently bureaucrats try to maximize their budget. It is easier to do so if the result of the office activity is less measurable because of non-market nature of the office's outcome. Also, it is easier to increase the office budget if they have less competitors preventing monopolistic behavior and if they operate under non-market supply and demand conditions.

With respect to business organizations it has already been mentioned that on one hand uncertainty creates the possibility of profit, which is the first item in the target function of the entrepreneur; on the other hand, realizing profit is a possibility for a decision-maker with sufficient appetite for risk and right information. In this regard the economic concept of profit is very closely related to power in theory, because after all both derive from uncertainty and both will get to the owner of information [24]. But while entrepreneurship (as an expression of the entrepreneurial orientation) is implicitly assuming willingness to take risks, a public official avoids risk. These two ambitions, namely to increase power and avoid risk strengthen each other in many instances.

Increase in office staffing and decision-making bodies is a great tool to reduce risk and enhance power. The decision-making responsibility may be more spread in greater apparatuses; the aim is to increase the power of bureaucrats, while reducing personal responsibility [25].

Further tools for risk reduction are procedures, protocols, extensive use of routines or patterns of the predecessors, and insistence to traditional methods. The individual's decision-making competence and responsibility of a particular actor of the authority will be very small. The organization remains sufficiently "inefficient" as technological development penetrates very slowly, so the office keeps working at high costs and high staff in the future too. The previous intention is related to postpone the decision, because in this case the risks can arise later. If the risk-averse decision maker has to make a decision and choose between two projects, he or she will favor the one with risks in the distant future. What indifferent to the bureaucrat is that realizable benefit may also get delayed.

The power of the official increases proportionally with the increase of the budget, while the increase of the budget makes possible to draw a large number of experts on the way to work, thereby reducing or shifting the decision-making risk to the contributors. Increasing the cost of each project increases the power of the bureaucrat, while the risk decreases [26].

If the efficiency of office operation or at least some elements of the output is measured by control bodies, neither the risk can be reduced indefinitely by impairing neither the effectiveness nor the power can be increased in this way. In such a case, bureaucratic activity shifts dramatically in the direction of the measured output [27].

Constructions are given perhaps the best example of this. The bureaucratic behavior is judged less rigorously and with less disapproval by the followers of the social optimum school. Musgrave and his followers agreed that with proper inventiveness public institutions can be directed towards optimal functioning. However, non-market supply conditions obviously give less harsh limits than the market would give for the decision makers.

Not only officials, but also elected representatives are involved in the public sector decision-making process, which follow vote-maximizing behavior. The time horizon of an elected official lasts until the next election, so it's worth them to discount the future even drastically [28]. Hood discusses one of the special risk-averse behaviors of an elected bureaucrat in detail that is the so-called blame-avoidance behavior [29].

Organizations operate embedded in the cultural environment and risk behavior cannot be independent from this environment. With regard to cultural differences Hofstede's model must be mentioned [30]. In this model organizational behavior is rooted in the differences of national cultures, like uncertainty avoidance is analyzed from this approach. Hofstede's researches show strong uncertainty aversion to the Hungarians. It suggests that government and public services' functions are deeply embedded in the cultural traditions so the relatively high level of uncertainty of Hungarians match to the bureaucratic-type organization and fixed rules, because in that case the level of risk associated with negative consequences is the lowest for decision-making parties.

7. Conclusions

Office decisions are made under non-market demand and supply conditions, and are determined by appointed and elected officials with their own risk attitudes. Both kinds of officials can show strong opportunistic attitude. Principal-agent relationship can be even more explicit in an office than in business organizations, diverting the organization from the path of economic rationality. Such risk aversion characterizes the organization's behavior in short term, but what they try to avoid is not all the actual losses, but just the losses shocking for the public, that is blame. In the long run potential losses are highly devalued.

If these two types of organizations co-operate with each other (as in PPP), there is a considerable chance of not optimal risk allocation. PPP contracts are typically long-term and office organizations' partners in those contracts are usually large companies. In this case both parties have strong, short-term risk-avoiding attitude, which subsides quickly for the horizons in case of the state representative.

If the decision-maker is an elected officer, probably his or her risk aversion is only valid for the election cycle. If the contract covers a shorter term, the behavior of the representative's office would be more rational; they cannot simply spread risk over long periods.

It is also important that bureaucrats are necessarily interested in real investments like constructions [31], because an investment increases the office budget and results in measurable and spectacular outcome, whereas maintenance of the old equipment, service development or human capital investment would be more important and efficient sometimes. This false intention can lead to unnecessary and unsustainable investments.

Similarly, it would be good for optimal risk sharing if the contracting business partner was a smaller-scale company, because entrepreneurial orientation may be stronger in smaller-sized business actors and they probably show a greater willingness to take risks. This is the situation in simple outsourcing, service or sales contracts. According to the literature short-term contracts, partnership of small-scale businesses, or if there is too much at stake (e.g. a large value bids) for the scale of a company give less space for such distorting factors, and reduce the possibility of risk allocation detrimental to the public sector.

This chapter on conclusions started with the assumption that risk attitude contains the impacts of external and internal characteristic of an organization and this attitude determine the decisions. In fact there may be other differences determining the decision-making process and the decision itself. Risk perception and risk evaluation can be also different [32], which can cause asymmetric allocation of information among organizations.

The above investigations convinced us that there are a number of other factors that affect risk allocation indeed, but instead of damping the above described effects, they cause additional distortion, most of which also to the detriment of the public sector.

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