

RISK ASSESSMENT APPROACHES IN ECONOMIC BEHAVIOUR

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ABSTRACT

Researchers apply different approaches to risk assessment and interpretation. It can be distinguished if we summarize the diverse opinions about the aspects, the reasons and risk factors. This article presents an attempt to systematization of useful approaches that apply to the human economic behaviour: to their content – quantitative, qualitative, sociological and integral approach; from the systematical point of view - systematic and intuitive approaches; from theoretical and applied point of view – theoretical, empirical, synergetic approach. Purpose of this paper is to outline the advantages and disadvantages of different approaches to risk assessment. The distinction between different approaches leaves an impression of fragmentariness in the process of risk assessment. Instead, for certain purposes these approaches can be applied separately, but when it comes to overall risk assessment, fragmented approaches can lead to errors with a high social cost.

Key words: economic risk, risk assessment, approaches for risk measurement

Economic risk is the prospective characteristic of the activities of production, distribution, exchange and consumption of goods and services essential for satisfying individual and collective needs, with a probability of success or failure after a choice, oriented to the subjectively more significant result.

Risks are often the outcome of a certain behavior, but there is a difference in the extent to which they can be individually assessed and managed, depending on the circumstances of the particular situation. If we consider the mortgage crisis in the U.S. in 2007-2008, which grew into a global financial crisis we may think over the possibilities for this specific business executives to adequately evaluate and control risk in their own financial decisions.

Llewellyn (2003) views Risk Assessment as an attempt to predict future situational results through extrapolation of past experience (either own or somebody else's) by means of inductive logic (my remark here is about the fact that what is good and useful for me and others in my situation will therefore remain good / helpful to me in the future too). Most naturally, such a conviction is based on the subjective expectations that the situation will stay relatively constant with no significant changes (Llewellyn, 2003). It is very important to specify in the above statement that forecasts are made for "situational results." This means that in an unchanged or slightly changed situation these predictions will be correct (Llewellyn, 2003). In the case of the global economic crisis, there lack objective indications of problems in the financial system for quite a long time, but subsequently the situation for most borrowers is significantly altered and these alterations are beyond the reasonable control of the individual. This makes constructs as "acceptable," "reasonable," and "motivated" risk situationally determined and extremely difficult to define in intransitive periods of extreme or unexpected conditions when people do not have the necessary comprehensive and reliable information (Llewellyn, 2003).

In accordance with the characteristic features of the different scientific disciplines and taking into consideration the personal and institutional resources of individual and collective actors, various approaches for assessing the economic risk are being preferred and used.

Judging **from their content**, the approaches (per Alygin, 1989), are:

Quantitative approach, applied in situations of risk where quality characteristics are not a matter of principle (gambling, lotteries, etc.). Numerically, the different probabilities in the range from 0 (complete failure) to 1 (complete success) determine the magnitude of risk (Alygin, 1989). The different degrees of risk are distinguished by the quantitative changes which make the effectiveness of the decisions vary. The levels of risk are defined predominantly through the

application of mathematical and statistical methods by way of the inductive logic. The level of risk is usually measured by the probability of death, injury, financial loss, etc. side effects. With attention to the degree of risk, the decisions can be characterized as ones with minimal risk, such with moderate risk, and those having high risk or maximum risk. Inductive logic has problems with its ability to prognosticate due to its definitively inbuilt impossibility to draw universal conclusions out of all possible cases even if all variables can be taken into account and its quantity be measured outright. The latter is rarely possible.

Moreover, there comes the question of the practical relevance of the quantitative approach applied to the subjective expectations for usefulness of the results (Luhmann, 1991). The greater the probability of failure, the less expectations about the acceptability of risk economic activity. The use of the quantitative approach only, is insufficient in explaining risky behavior, as in many cases not the quantity but the quality of the loss is more important for the decision. For example, if entrepreneurs who earn just enough to survive can go bankrupt because of taking a possible risk, they will be less willing to risk than those for whom the same loss, with the same probability for success is not such a great problem.

Therefore, there is a lower threshold limit of the acceptable adverse effects that influence the choice of alternatives and it depends on the relative reference point by which economic actors compare (this is discussed in more detail in Chapter Two).

There are activities in which risk is taken only when necessary by external circumstances - a passive activity with elements of risk (Alygin, 1989). In such cases the risk is assumed not to obtain a greater benefit (profits) but to avoid damage (losses, penalties, etc.). In this case, slower means safer (as the author notes this approach is quantitatively assessed as having a higher probability of success) path for the realization of aims.

The term "high risk" is problematic from the point of view of its definition (Llevelin, 2003). It means that certain behavior is quantitatively assessed as containing high risk, compared to an equivalent behavior. On the contrary, the maximum risk is interpreted as hazardous or adventurous risk. Anyway, in certain extreme situations such a type of risk can be justified (Alygin, 1989).

Qualitative approach to risk requires taking into account the probabilities and nature of the losses together with the favourable or or unfavourable consequences (economic, psychological, moral, educational, demographic), etc. if a risky decision is made. The variant, considered as motivated, reasonable risk, taken at a sufficient level of probability that the decision will affect the the quality aspect of people's lives, if its implementation does not exceed the socially acceptable amount of adverse effects (by Alygin, 1989).

Acsiological approach to risk assessment focuses on individual or public benefit, which extraordinary action and enterprise bear (Alygin, 1989). A number of authors (Kahneman a. Tversky, Chen a. Lee, Gupta a. Murray and others) apply this approach to study the assessment of economic risk. The value resulting from the undertaken behaviour determines the greatness of expected gains or losses. The usefulness of the expected conduct is a projection of its value to the person who is the subject of it.

In *the integral approach* a criterion for risk assessment is the validity of the choice, considering the quantitative and qualitative characteristics of acsiological alternatives. The integral evaluation allows to differentiate between the motivated (rational, reasonable) risk and unmotivated (irrational, unreasonable) risk (Alygin, 1989).

The distinction between the quantitative and qualitative approaches leaves an impression of fragmentariness in the process of risk assessment. Alygin (1989), is right to argue that for certain purposes these approaches can be applied separately, but when it comes to overall risk assessment, fragmented approaches are inappropriate and irrelevant. More correctly, it would be necessary to talk about quantitative and qualitative and acsiological components of the overall assessment, without which it can not be built (i.e., the integrated approach is one that is relevant to these three components). There are two reasons for these statements: 1. Quantitative, qualitative and

aciological components of the overall risk assessment influence each other. If the actor takes the whole amount of the subjectively insufficient for him resource, the general evaluation may seem like low risk (e.g. losing his only clock in a game of poker). And vice versa - risking a small amount of subjectively important resource (e.g. a slight deterioration of health) can be assessed as high risk. Similar to these, and other typical examples drawn from individual and collective life may be regarded as empirical confirmation to the main theoretical argument that the quality (content v.sm.) of the possible loss or gain inevitably determines the subjective value of the result. 2. In subjective evaluation, quantitative, qualitative and aciological aspects are very difficult and often impossible to recognize separately and they are hard to judge in detail (as it is with long-term mortgages of houses). The three components are perceptively united and their differentiation is problematic in the practical measuring of risk assessment.

From the *systematical point of view*, we can distinguish systematic and intuitive approaches to risk assessment. The aim in the systematical approach is to comprise all possible sources of uncertainty and examine them in their mutual connection and interdependence. Moreover, the systematic assessment is based on as much objective information (e.g. statistics, distributions), as it is possible), which brings validity in the evaluation process. When the sources of uncertainty abound or the information about them is uncertain, this can lead to deliberate simplification of the risky situation and reducing risk factors to cognitive foreseeable and controllable number of easily measurable parameters. Quantitatively presented data, in turn, can be inaccurate because there is a considerable difference in the statistical methods of their calculation. There are also errors in the way data is being collected, there is some temporal instability in them, too. So, the final results sometimes give a distorted picture of the real phenomena (Marinov, 2008). System evaluation errors arise either from the exclusion of certain sources of risk assessment, or from the establishment of false relationships and dependencies between the real sources of risk.

The intuitive approach is applicable in the transitive or outward dynamic situations in which unbiased information is severely restricted and actors make decisions relying on their own estimates or uncertain attempts at guessing (Llewellyn, 2003). Some researchers argue that there is a surprisingly high degree of agreement between intuitive and systematic risk assessment and this may be a working hypothesis in explaining risk behaviors (e.g. Kahneman, 2004). Although intuitive risk assessments often contain biases and errors, they are of immense help to the players and determine decisions in a wide variety of situations and conditions. Both approaches to risk assessment are justified, but they also have inevitable limitations, determining evaluations, less secure and stable than most people realize while relying on them.

From *theoretical and applied* point of view Borisov (1991) differentiates three approaches to risk assessment.

The theoretical approach consists in anticipating the impact of risk influences made on the basis of a priori conclusions based on theoretical principles and requiring certain preliminary requirements for the decisions. This approach can be challenged mainly because it lacks account of the actual practice.

Another possible for the author approach, is the *empirical* one which is based on experience. Its connection to practice is obvious, but to predict future actions by taking into account the errors is rather inefficient.

There is a third - *a synergetic* approach. It consists in providing proactive impact based on pre-processed information from empirical data, using scientific methods for the purpose of forecasting and strategic decision making. This approach combines the first two and makes it possible to construct hypotheses and draw inferences in which empirical data can be supplemented by estimates of expert groups. It has the additional advantage that it allows to make predictions not only about the evolutionary, but also of the revolutionary development of the economic systems when the lessons of the past are not valid for the future and the experience can turn from advantage into obstacle (Borisov, 1991).

Increasingly authors from various scientific fields become aware the necessity of comprehensive application of risk research approaches, because the application of a fragmented approach can lead to errors with high social cost. This, on the other hand, requires the creation of multidisciplinary teams of researchers for the study of human economic behavior.

References:

1. Альгин, А. (1989) Риск и его роль в общественной жизни, М., Мысль.
2. Борисов, Б. (1991) Отчитане на неопределеността и риска при стратегическото планиране във фирмите, *Народностопански архив*, XLIV, 4.
3. Маринов, А., Н. Марков (2008) Анализ на макроикономическите показатели в България за периода 2000-2006 година, *Икономика и управление*, 3, с.10-18.
4. Gratt, L. (1987) The definition of risk and associated, In J.Bonin and D.Stevenson (Eds.), *Advances in risk analysis*, 7, 675-680.
5. Green, L., N. Fristoe, J. Myerson (1994) Temporal discounting and preference reversals in choice between delayed outcomes, *Psychonomic Bulletin & Review*, 3, 383-389.
6. Gupta, A., W. Murray (2005) A Framework Algorithm to Compute Optimal Asset Allocation for Retirement with Behavioral Utilities, *Computational Optimization and Applications*, 32 (1-2), Publisher: Kluwer Academic Publishersq, October.
7. Kahneman, D. (2000) Experienced Utility and Objective Happiness: A Moment-Based Approach, Ch.37, 673-692, in: D. Kahneman and A. Tversky (Eds.) *Choices, Values and rames*, NY: Cambridge University Press and the Russell Sage Foundation.
8. Kahneman, D. (2002) Maps of bounded rationality: A perspective on intuitive judgment and choice, Prize lecture, December 8, NJ 08544, USA, http://nobelprize.org/nobel_prizes.
9. Kahneman, D. (2004) Decision under uncertainty, e.*Center for Behavioral Finance*, Events Funds'04, February 06, <http://www.unisg.ch>.
10. Llewellyn, D. (2003) Sensation Seeking and the tendency to view the world as threatening, *Personality and Individual Differences*, 13, 31-38.
11. Luhmann, N. (1991) Sociology des Risikos, *Thesis*, №5, 9-40.