THE NECESSITY TO STUDY THE RANDOMNESS WITHIN THE FINANCIAL PERFORMANCE MEASUREMENT

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Abstract
The purpose of this paper is to show the necessity of randomness studying (through random variables) in enterprise performance measurement. By performing a fundamental research, we will demonstrate that the presumption of the approach and study the randomness and random variables within enterprise financial performance measurement remains fundamentally required. Both in literature and in the practice environment, a transcendence element in the presentation and measurement of the financial performance is required, as the natural way of manifestation of this phenomenon is a random one. A comparison of the determinism area versus the random one will be performed. The innovation of the study is precisely the original idea to study the performance of the enterprise through the randomness, as well. Surely we are at the beginning of a new direction that might be built through the dedication and perseverance of researcher seager to respond to the most exciting questions concerning this topic and to translate those answers into practice in order to be useful for practitioners.

Keywords: randomness, determinism, random variables, uncertainty, financial performance measurement.

JEL Classification : M40, M41.

1. Introduction
The aim of this study is to answer the question: why is it necessary to study the randomness in measuring the financial performance?

In a pursuit of any economic activity, as in life, we must make decisions at every step, decisions that might affect the future, in an unknown manner; we cannot predict what will happen for sure, even if we have defined a good run of things, though it is permanently affected by uncertainty.

Similar to a business or activity approach, the entrepreneur starts with an idea and wants to undertake an activity in a certain area, in order to obtain a profit in the end. Thus, as time passes, there is a beginning of an activity, then a running time period of the whole process of work with all necessary components, and then, periodically a line is draw, when the calculation is performed in order to visualize the various results of the work. The one who invests in a business, obviously wants to gain from the investment, expecting good results of all activities. Setting this as a purpose, he will make decisions, but no decision taken now, will guarantee future success. Even if there is a consistent plan, which normally should work, it may fail though. In this context, the question obviously raised is: what happened? Which is the root cause of this turn around from a success to a failure? This is a great question, hiding meaningful aspects, because the answer is difficult or impossible to be found, due to the fact that the results of an activity performed, cannot be anticipated accurately, as they are affected by uncertainty. Any human activity in any field, runs under an uncertainty level. Therefore, the randomness and the related necessity of being studied in the economic-financial field appear, especially in enterprise performance measurement.

Being rational, we do not claim to elucidate this problem in a single article. Surely, we are at the beginning of a new direction that will be built over time through dedication and perseverance of researcher seager to respond to the most exciting questions about this topic and translate these answers into practice to be useful to practitioners.
2. Key issues in understanding the company’s performance

The company's performance is nowadays a concept often used by both academia and practice environment with quite different meanings and interpretations. We therefore join the opinion of Professor Bernard Colasse, according to whom, the “the word “performance” in the singular or plural, although it is used more and more frequently, it is a word-bag which covers various and different concepts such as growth, profitability, productivity, efficiency, competitiveness, not to cite them other than the main ones”[1]. Also, we consider essential to highlight some general issues regarding to the understanding of the concept of performance, necessary to support this study:

- Firstly, the performance is not a concept itself. It acquires value only when it is associated with certain previously established objectives concerning an activity. It cannot be confirmed that a company is high performing without analyzing the comparison between the results obtained based on the initial objectives.
- Secondly, we cannot analyze the performance without measuring it, it makes sense only with reference to an indicator or measuring instrument.
- Thirdly, we consider that the company's performance cannot be separated from the financial statements, because their very objective is "to provide information about the financial position and financial performance and cash flows of an entity that is useful to a wide range of users involved in economic decisions making" according to the International Financial Reporting Standards [2] and national regulations [3]. Moreover, based on the financial statements, various performance indicators that form a system are calculated, a list of indicators which show the results of the executed activity. Discussion of these indicators is not the subject of this study, but the literature provides their classification according to different criteria depending on the intended purpose of each user of the information contained and provided by them “the broadest classification is the classic indicators and modern ones”[4]. The most commonly used indicators for measuring of the company performance are represented by the profitability (profit), liquidity (cash flow), comprehensive income, financial ratios, indicators of value creation and not least by the non-financial aspects.
- Fourthly, the performance is a matter of perspective. The information contained in a performance indicator may be relevant to a manager and less relevant to an employee, for instance, "users with various time horizons and interest will measure and study the performance of the company from different angles, through indicators of their interests.” [5].

These aspects being understood, a remark has to be emphasized that this study refers to the company's performance in terms of managers and equity owners because their point of view is considered as dominant in a private business-since through their function within a company, they have a common and global vision of the performance of the executed activity.

It is noted that from their perspective, the horizon of understanding and perception of the company performance widens, meaning that they are not satisfied with analysis of the performance of past or present, they want to estimate the future performance. To meet this challenge, the scientific theory had introduced and developed over time the economic model. Their use is "essential in forecasting and diagnosis processes. The extrapolation of the evolution of indicators concerning past events and conditions represents an important tool in substantiating of the development strategies"[6]. But the future involves many possible ways.

3. The deterministic area versus the random one in company performance measurement

The financial performance forecasts still remains very sketchy and difficult to perform, because even if these are executed based on an idea of extension of the past in the future, however, the fact that the future is unpredictable cannot be ignored, it involves many possible ways, we cannot remain in the state of delusion of unconditional success achievement, because the probability of random events occurrence which creates major ruptures always exists and their effect affects the enterprise.

Yet, the managers and business owners have to make selections among the possible decision, to develop correct economic decisions and equally to implement the best strategy that will provide growth and profitability out of what they invest in the company. Therefore the phrase “the best” appears, which, in our opinion, is idealized within this context. Since the future is always unpredictable, it is uncertain, it cannot accurately be determined generally, even more, particularly in this problem.

A solution to address to this aspect is considered to be the widening of the financial performance measurement space and moving from the determinist area where the calculation models are designed on the idea that the uncertainty regarding the assessment of variable is non-random like, in the probabilistic, random area which involves an approach
touching two respects: the regularity and the randomness of the factors which influence the enterprise performance. Doubtlessly, we cannot detail the complexity of the problem in few lines, but we will try to treat the essential points of dealing with this topic.

Observing and participating to outcomes achievement out of an economic activity carried out in an enterprise, the deterministic nature of the phenomenon of reaching these results can realistically be argued. It is impossible that anyone could actually accurately predict this phenomenon. This is due to the fact that the past events of a company will never determine its future univocally. Therefore, the phenomenon of results achievement within a company is not and will never be a deterministic one. It is a probabilistic phenomenon having a random nature.

The concept of "random" means subject to chance, hazard, uncertain or insecure and is synonymous with the term "stochastic" which means a matter of chance. The fundamental issues with respect to the randomness, which is opposite of the determinism, the ones relating to uncertainty, to knowledge determination by discovering the relationships between the phenomena cannot be treated and resolved only from the probability theory perspective. Also, we have chosen to cite the professors Ion Smeureanu and Gheorghe Ruxanda who define the stochastic approach within their study [7] as being “that scientific investigation context of economics, where economic phenomena and connections between them are considered to have a stochastic behavior and methods and techniques used to describe the movement of economic phenomena and relations are specific to probability theory and mathematical statistics”. The object of probability theory is to describe and investigate the mathematical models of random phenomena, a fundamenta concept of this theory being represented by random variables. They are used in the stochastic approach to describe the evolution of phenomena and the relation between them.

The real phenomena can be interpreted in terms of probability theory and mathematical statistics by building abstract models. But we permanently have to be aware of the fact that real phenomena are modeled, that the human knowledge of the reality at a certain time is imperfect, because a mathematical model “is not reality, but at best the best description of it” [8] and "any theory necessarily involves an idealization" [9] because uncertainty is introduced into the model in an idealized way. An economic model will have value depending of the degree of approximation of economic reality and the extent to which it is a solution to address the high aspirations of practice.

The necessity to study the randomness and the random variables in measuring of a company performance derives from the need of the decisional board to have an informational support as accurately, at which decisions are based, on the enterprise level, which will then generate strategies for being implemented in order to preserve and preferably to improve the performance of the executed activity. So we believe that the most effective decisions are those that are based on an information support as complete as possible.

Figure 1. The necessity to study the randomness in enterprise performance measurement

Moreover, we believe that a consistent informational support begins to be outlined with the approach, and further, the understanding of all the factors that influence the enterprise performance, as schematically represented in Figure 1. These factors can be classified as significant factors, but especially in a multitude of insignificant factors. Or another classification can be as reliable factors which can be observed and measured, and uncertain factors that cannot be identified, and if they are observed, they cannot be measured. As the "movement in time and space of economic phenomena and their relationships appear to be significantly affected by uncertainty, especially in situations where this movement is seen not in manifestations at the aggregate level, but at particular individual"[10] similarly, the evolution
of performance of the activity executed at the enterprise level is manifested through a high degree of uncertainty and unpredictability.

But in order to establish the significant factors influencing the performance (as a result), the results of the company have to be observed in time and space, meaning that statistics groups have to be organized. These can be, for instance, the results of the company generated by a certain field of activity, recorded at the end a financial exercise or the results of a single company recorded for a period of time over several years.

Certainly, the results of several companies in the same field, recorded in a year can register a certain trend in the manner of their formation, which can be detected by means of econometric models and implemented through an elegant form that highlights the link between the outcome and the factors which caused that specific result. The linear regression models translate the dependence of a variable result and one or more independent factorial variables, reflected by a correlation as follows:

$$ Y_i = \alpha + \beta X_i + \epsilon_i, \ i = 1,2,...,n $$

Where Y: dependent variable, X: independent variables and \( \epsilon \): random variables

But individually for each enterprise, the results are generated as subject to random factors, as well, with lack of generality, considered adventitious and related to uncertainty. They cannot be directly observed, but they can be studied by means of random variables and their probability distributions.

The managers and business owners should understand and be able to issue forecasts regarding the functioning of economic phenomena that adversely affect the company’s performance. In this context, we consider it is necessary to study the variability of manifestation forms of the performance, as well, both spatially and temporally, and also the movement from the deterministic area of enterprise performance measurement to a complex random area, which consider the random variables, as well.

Also, we consider the opinion of the co-author of the mathematical theory of the strategic games, Oskar Morgenstern (1956) very suggestive, being quoted by Professor Horomnea [11] according to which “the failing to use the advanced techniques in the measurement of economic and social phenomena, often causes somehow the economic sciences to become obsolete.”

4. Conclusions

Therefore, based on the information presented and supported, we consider that the presumption of the approach and study of the randomness and random variables to measure the financial performance remains fundamentally required. Both in literature and in practice environment, as well, an element of transcendence in the presentation and measurement of financial performance method is required, as the natural way of manifestation of this phenomenon is the random one.

Moreover, there is no activity or field of study that is not affected by uncertainty and the randomness cannot be addressed only by using the tools provided by the theory of probability and the mathematical statistics.

There are countless real examples that prove that both academia and especially the practice environment need to study and understand the randomness in the economic-financial performance measurement. Even the global economic crisis so widely discussed is the effect of random mechanisms, which were not taken into account. We believe that in an economic environment as complex and dynamic, the enterprise performance has to be studied in the light of the existing randomness, as well. Since this approach is not seriously considered, the failure root cause can never be identified.

Regarding the future search prospects, our idea has to be taken over, accurately developed and then put into practice.

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