EVALUTION FUNCTIONS WHEN MAKING DECISIONS IN THE CONDITIONS OF UNCERTAINTY

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Abstract
Optimizing the goals of the economic policy - achieving maximum results - is possible only on the basis of strict rationality. On the one hand, this means that all actions take into account the achievements that are given in advance in the results matrix. On the other hand, we need to use the evaluation function. It will allow us to evaluate different results according to their characteristics and bring the actions within the desired order. It is possible to summarize the characteristics of events when the type, genus, quality, duration and reliability of such characteristics are independent of each other. At the same time, the evaluation - for practical purposes - is of a hierarchical nature. Each subsequent step involves simplifying the results matrix. At the end of such a procedure, we are faced with the possibility of forming a decision that gives meaning to every action or acts as its vector. It helps in making the optimal decision.

Keywords: *Economic policy; Economic Decision; Strategic Uncertainty; Evaluation Function; Decision Field; Operationalization of Variables.*

JEL Classification: *E60, E61, E65, E69*

I. INTRODUCTION

In the case of fixed objectives, the decision-making problem is simplified in that the test is only what action achieves the given objective as a predetermined result of the action. Questions do not arise about other possibilities for action and their consequences. The issue of evaluating and selecting such opportunities is not a matter of decision-making either. A given combination of fixed goals is not a precondition for an optimal result. It can be interpreted as an expression of limited rationality. In any case, it is difficult to deny that such an approach is close to reality.

When the ambiguity is dispelled, the problem of making a decision while optimizing the goal can also be formally simplified. This will happen if we represent the decision field through an econometric model (fully describe both the equations defining the goal variables and the results matrix). In this case, based on the defining equations, we can also determine the set of solutions from which we should get optimal results through the evaluation function. In other words, the results matrix sets the boundaries that must be observed when using the tools towards the set goals. When we use goal optimization as a decision-making method, we are talking about achieving maximum results in the presence of accompanying conditions. Such conditions are, first of all, economic relations. As for the additional problems that arise in solving the equations, they are ignored.

If the evaluation function is known, which includes only the goal variables in the form of arguments, then its value increases as much as possible under the accompanying conditions set by the equations defining the goal variables. For simplicity, let's assume that the tools have no value of their own. On the other hand, their importance increases in the evaluation function, or their proper value decreases in the corresponding accompanying conditions. In this case, proper preparation of the decision would be a problem of linear optimization if we gave the accompanying conditions the appearance of linear inequalities.

II. METHODOLOGY

Both general and specific research methods are used in this article, namely – the methods of analysis, synthesis, historical, logical, induction, deduction, scientific abstraction, comparative analysis, statistics (selection, grouping, observation, dynamics, etc.), static, as well as the methods of experimental evaluation.

III. RESULTS

The function of evaluation is fully substantiated in normative theory of decision. As for the positive theory of decision, the function of evaluation in it is the subject of direct study. On the one hand, there is - for example, the optimal possibility of its implementation with Tinbergen (Tinbergen, 1964). This is when the decision maker is interviewed about all the difficulties associated with the decision. On the other hand, the decisions made so far are being analyzed in the hope of stable assessments in the future. These types of attempts (Friedlaender, 1973) are related to economic policy theory. The point is that based on the tools used, a conclusion is made about what preferences the decision maker relies on. However, a certain type of evaluation function is given in advance. In both cases, the question arises as to what considerations underlie the decision-maker's reaction to the observations. Approximately (replacing a set of objects with another simpler set), usually only the econometric model is selected. The usefulness of such an approximation depends on how the results achieved are evaluated.

In times of strategic uncertainty, the consequences of future action are determined not only by the person directly making the decision, but also by other decision-makers influencing economic policy.
Strategic uncertainty means that:

- When appropriate, equations are added to decision technology equations that express both the reactions of decision makers and their action parameters. It is about the reactions they have to changing tools by a particular decision maker. At the same time, their actions appear to be exogenous variables and are specified in the form of "rules of the game";
- Report to other decision makers as appropriate (meaning the tendencies of rational expectations of private economic entities). Individuals in their private plans try to anticipate the behavior of economic policy makers and their economic impacts. That is why there is a certain contradiction between private individuals and the given authorities, the results of which are characterized by considerable uncertainty.

If we generalize the particular case presented in view of the uncertainty of the use of the instruments, then even a minor complication of the uncertain situation becomes the cause of a significant deviation from the result. We should report such deviations as soon as it turns out that:

- The impact of the instrument is subject to accidental changes and
- Instrument impact options are not independent of predefined variables.

From the first case it is clear that the change of instruments affects not only the place that occupies this or that result in the hierarchy of results, but also the probable distribution of such results. Such an approximate distribution with the multiplier is related to the variables that cause the results to change. It is necessary to consider the possibility when the instrument variables and the data reinforce or weaken each other when impacting the objective variables. Conversions about the deviations from the results under certain conditions (Brainard, 1967; Johansen, 1973) reveal that:

- It is no longer necessary to be clear about the decision problem when: the number of tools exceeds the number of goals and it is possible to use all the tools;
- Variation in the use of instruments is poorly dosed when there is great uncertainty about the outcome of its impact;
- Complete, preliminary anticipation of the goal is not advisable and it is better to dose the instrument independently of it.

If not to keep in mind exceptional cases, the elements of uncertainty discussed so far require more in-depth analysis than the consideration of certainty. At the same time, this situation should not lead to the same consequences.

It is also important to point out two analytical difficulties. One of them is that the decisions made in the field of economics are predominantly one-off (since the conditions under which decisions are made are constantly changing). The second difficulty is related not to general uncertainty, but to the partial consequences of actions and their partial uncertainty (consistent decisions in conditions of uncertainty).

When the possibilities for action are not followed by unambiguous results and they are of an approximate nature, then we get the expected values (average values). Their calculation is expedient only when, under other equal conditions, a sufficient number of decisions are acceptable. In less important cases in terms of economic policy decisions, the "law of large numbers" should be considered. Therefore, in the conditions of a growing number of decisions, it is accountable that the average of the results achieved is close to what is expected. In this case, too, we must bear in mind that (Gäfgen, 1971):

- Significant characteristics of the probabilistic distribution (averages) are obscured and
- Relatively many similar solutions are expected in conditions where certain outcomes are unavoidable (so-called disasters and collapses).

Especially from this last opportunity we learn that the subjective position of the decision maker is related to the risk associated with the decision rule. It is a matter of changing his attitude towards the “law of large

numbers". Such a change is all the more radical as fewer decisions are possible on other equal terms. Orientation to the expected consequences of the event is rational only when the decision maker is completely neutral towards such risk. That is why the functions of evaluation (when making decisions in conditions of uncertainty) account for not only the aversion to risk, but also the joy that comes with risk. There are several rational principles that must be met by a decision made in conditions of uncertainty (Schneeweiss, 1967, p. 32). However, it is impossible to derive from such principles a universal rule of conduct in relation to uncertainty. On the contrary, there are many opposite rules. Their purpose is to place the decision maker in a position where he or she can make a consistent assessment of the consistency of the choice between the outcomes.

The second difficulty arises from the fact that economic decisions are not followed by results detached from time and reality. For example, financial policy decisions relating to the first year of a parliamentary term and setting the initial conditions extend to subsequent years. This happens in a way that sometimes does not take into account the long-term impact that such decisions will have on subsequent periods. The decision to implement the Trade Liberalization Agreement lays down new initial conditions for political decisions on trade structure. The principle of rationality requires that economic policy decisions be formulated as globally as possible. But at the same time, we have to take into account the difficulties associated with decision-making, especially when it comes to uncertainty.

Making a final decision in favor of a defined strategy does not make sense. In each phase of the sequence of actions it is unclear what the initial state will be in the next phase. If the situation is not predetermined by the chosen strategy, then the implementation of the planned action for this phase is not recommended. It would not be rational to ignore the situation when the ambiguity related to the final result decreases from period to period. The sequence of actions reveals the errors in the evaluation of individual actions that need to be corrected in subsequent decisions (decisions as a learning process). Therefore, a preliminary decision in favor of a particular strategy should be made on the basis of appropriate information. The difficulties associated with a pre-selected strategy without a decision rule will become apparent only after two consecutive periods. The value of the intermediate outcome at the beginning of the first period depends on both the initial state of the second period and the degree of difficulty. Such a degree is determined by the unknown results that will be obtained by the actions taken in the decision field in the second period.

Due to the large number of possible situations in the field of actions and decisions, it is difficult to develop and evaluate a strategy if the practical preparation of decisions has not been carried out in advance. The problem of strategy becomes even more complicated when a realistically calculated period is extended into the future (inflexible planning). In order to simplify the problem, it is also important to determine the desired level of optimality (assessment of the target area).

Decision models in economic policy have been developed primarily in relation to the macroeconomic problems of economic policy. We need to focus on the problems that arise even when the theoretical principle is not in doubt.

As for the limits of the effectiveness of decision models, it is due to the following reasons:

- In many cases it is impossible to operationalize important variables of economic policy;
- In some cases economic theories lack empirical content, while some content are controversial;
- Access to statistical information is limited;
- Econometric evaluation procedures are almost inconsistent with the nature of the material given in the observation process;
- It is a rarity to prepare a solution that is relevant to the problem and has practical significance.

Not all important variables of the economic policy can be operationalized to the extent that decisions are made on a scale that would allow us to assess the problem of action globally. Even in a stabilization policy (which is a relatively easy-to-explain subsystem) it is impossible to draw the line between analysis and possible conclusions. In general, information policy from the instrument categories is considered to be the area that is least subject to operationalization. The same should be said of voluntary compromises. It is necessary to impose restrictions on the institutional rules governing changes in market conditions. In this regard, the tools of fiscal policy (in particular, expenditure policy) and partly monetary policy are more available.

Economic theories limit us in cases where they do not provide the desired knowledge about the decision field, are devoid of empirical content, or their empirical content is unsatisfactory. As for the broad fields of growth and distribution theories, they are characterized by invulnerability to attempts at falsification. This means that empirical decision-making based on their provisions alone is impossible. In many cases, empirically substantiated theories are also controversial. First of all, it refers to Keynesian macroeconomics within the framework of economic policy (Dean, 1981; Meltzer, 1981; Wiles, 1981).

Obtaining statistical information does not mean that the model of economic policy decisions has acquired an empirical-scientific character. More often than not, a significant difference arises between the information available to us and the information that is preferred by the model. Also, the quality of obtaining information is not considered, both in terms of content (eg, the exact number of labor markets) and time (eg, quarterly

estimates).

The possibilities of econometric estimation are defined as the difference that exists between econometric methods and observational material. It is true that the estimation of probabilistic regularities is based on accepted practice in statistics, but the observational material is not empirically derived. Therefore, it is always possible to use only the methodically necessary information correctly. In the observations made, as a rule, the case does not concern either accidental actions, nor is their combination large enough and unchanged over time. For example, the population, structure, and behaviors we rely on are constantly changing. Finally, it should be noted that in many cases we have access to a small number of observations compared to the number of parameters to be evaluated. Because of this, the reliability of the evaluation results becomes questionable.

It is essential that forecasts based on the evaluation results meet the following condition: The complex of effective causes in the past must also include the forecast period. Such a lead is particularly problematic for the decision model defined from the position of the stabilization policy (in terms of considering the reactions that private individuals have to the change of instruments). Here, too, the argument for the tendency of rational expectation is valid. The reliability of the evaluation results determines the accuracy of the predicted predictions. It is possible to turn them into better statistical material, but uncertainty about the first reported condition remains. Added to the above ambiguity is the ambiguity that accompanies predictions based not on model but on exogenous variables. It is unbelievable to conclude from this that everything should be left to instinct or intuition. This is the result of illusory impressions and superficial diagnoses that are made at the moment and continue to operate without control in the future.

Finally, we should briefly outline the possibilities for solving economic policy problems that are presented to us through decision-making theory as follows (Menges, 1969; Pütz, 1979):

- The decision field is presented as a very complex relationship between a goal, an instrument, and other predefined variables. It is true that not all dependencies can be quantified, but it is possible to unravel the structure of their system through a variety of techniques (which we apply to evaluation models, e.g., diagrams, diagrams, etc.);
- The ability to present the decision field on a more global scale provides a quantitative criterion for information. It does not allow us to ignore the side effects and long-term consequences of possible actions;
- Arguments based on decision models determine the order of thinking. As a result, decision processes become controllable;
- Theoretical analysis of results is based on econometric data, which allows us to avoid frequent mistakes in economic policy management. First of all, it means unproductive and intensive dosing over time, which results from a rejected or misinterpreted delay;
- An attempt at quantification can be useful even when it involves analyzing only some aspects of the problem. With such partial cognition, we should not forget the incomprehensible aspects of the problem. Argumentation is especially necessary when the material is not perfect and not vice versa.

It should be always kept in mind the tradition of Tinbergen research, which imposes narrow limits on quantitative theory of economic policy. It takes into account the complexity of the real problem of the solution and the difference between its theoretical or practical solution possibilities. This is a warning so as not to overestimate the chances of success of management measures. In addition, it is necessary to meet the conditions of principle imposed by the policy of order.

IV. CONCLUSION

There are many problems with the evaluation function. The point is that the evaluation function, together with the decision rule, determines which variant of the instruments should be preferred. Such functions and rules are primarily focused on the ability to solve a decision problem. They are the sole decision-makers in contrast to practical decision-making situations. Knowledge of decision making rules is extremely fragmented. It is unstable in time. This means that information about the value (value) of instruments is usually incomplete. As for the use of tools, it is also poorly evaluated.

We are generally deprived of the practical methods of decision-making necessary to plan economic-political actions in conditions of uncertainty. On the one hand, the reason for this is that we do not have enough knowledge about the relationships in the decision field. On the other hand, we know neither the number nor the type of expected results. There is some inconsistency between the complexity of the decision-making problem and the real possibilities of its analytical and in-depth access. At the same time it is hasty (therefore rejected) to conclude that systematic and theoretically justified action will inevitably simplify the problem. The logical question is what is the systemic and theoretically justified action according to the decision that we should put next to intuition. In addition, such action is not based on quantitative analysis, which covers the whole complexity of the problem.

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