FORMAS DE ENSEÑAR Y APRENDER EN EDUCACIÓN SUPERIOR
FACES DO ENSINAR E DO APRENDER NO ENSINO SUPERIOR

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(Coords.)

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Índice

19.TEACHING THE GENERAL CASE IN ECONOMICS WHAT HAVE WE LEARNED AT THE ECONOMIC DECISION ANALYSIS COURSE?

António Bento Caleiro[71]

Abstract

Allegedly, in order to achieve the objectives outlined in the Bologna Declaration, it would be desirable that, especially in higher education 1st cycle degrees, there should be courses with the widest possible approach, in order to cover the different perspectives addressed in the science associated with that degree. This happens in the 1st cycle (as well as in the 2nd cycle) degree in Economics, at the University of Évora, with the Economic Decision Analysis course. In this course, the general case is presented, with the different branches of Economics seen as particular cases. The appraisal of this teaching-learning experience is the object of this study.

Keywords: Teaching. Learning. General Case. Economic Decision Analysis.

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1. Introduction

According to the principles outlined in the Bologna Declaration, it was intended, as much as possible, that students should attend three levels of higher education, in particular the first two, as training for most students. This ended up translating into a re-designation of those levels, of a sequential nature to emphasize continuity, i.e. 1st, 2nd, and 3rd cycles.

That continuity in higher education learning resulted in the call for the 1st cycle degrees to be, as much as possible, of 'broadband' type, even covering courses that did not fit, strictly, within the scope of the science in question being studied in that cycle. In this sense, it should also be desirable the existence of courses in which the general case is presented, so that students understand how the different courses associated with the different parts or approaches usually considered in the science under study are integrated/complemented, as particular cases of that general one.

That is what happens in Economics, where, as is known, there are several branches: microeconomics, macroeconomics, monetary economics, international economics, etc., these being treated in the various courses that, most commonly, constitute any 1st cycle (as well as some master and even doctorate programmes) of Economics. This is also the case in the University of Évora, but there is also a course that intends to present the general case, with those various branches of Economics being seen as particular cases. This is the Economic Decision Analysis course, whose main goal is precisely to provide an integrated approach to the process of taking economic decisions by the economic agents in the most relevant situations, i.e. certainty, risk and uncertainty, eventually under a static or a dynamic context.

The Economic Decision Analysis case, in terms of the challenges that arise in the teaching-learning process, is what we intend to analyze here.

That being said, the rest of this paper is structured as follows: Section 2 offers the description, argumentation and discussion of the case associated with the course under analysis; Section 3 concludes; the Annexes present some important information to better characterize the course, namely the syllabus and the bibliography.

2. Description, Argumentation and Discussion

Starting with a short historical digression, Economic Decision Analysis was taught, for the first time, in the academic year 2003/04, as an optional course of the 1st cycle/degree in Economics (at the University of Évora), following the reformulation of curricular plan of that degree. Despite its optional nature, it has been taught in almost every academic year, always under our responsibility. In fact, its non-functioning has occurred only when taking sabbatical leave.

As a course of the Master's in Economics (at the University of Évora), it was taught, for the first time, in the academic year of 2006/07, having become mandatory in this master's degree, in the academic year of 2015/16. From this year on, it was also taught as an optional course for the Master in Monetary and Financial Economics (at the University of Évora).

As an optional curricular unit of the PhD in Economics, it was taught in the academic years of 2010/11 and 2011/12.

It is, therefore, a course that, due to its characteristics, is appropriate to be taught in the 3 cycles of higher education studies. In fact, these characteristics were immediately evident – at least for us – in the Economic Planning course, which gave rise to the Economic Decision Analysis course, created by our initiative.

In fact, the Economic Planning course has, to the best of our knowledge, always been part of the curriculum plans of the 1st cycles/degrees in Economics (at the University of Évora). This course, which was annual in nature and later became semiannual, was always mandatory in those curricular plans. In the first part of Economic Planning, an analysis of economic decisions was presented. For instance, our first contact with Game Theory, took place, as a student, in this course, in the (far-off) academic year of 1984/85. The manual used at that time was the well-known – at least for us – Johansen (1977). About this reference in particular and, in general, about the importance of its author, it is worth mentioning part of the note in Econometrica, Vol. 61, No. 6 (November, 1983), pp. 1854-55, that states:

"It is probably fair to say that Leif Johansen's overall perspective on economics was that economic theory should be seen as a tool for economic planning. This perspective is clearly visible in his two-volume work *Lectures on Macroeconomic Planning* (North-Holland, 1977-78). The treatment is broad and sometimes reaches beyond the conventional borderlines between economics and other disciplines. At the same time,

there is hardly any aspect of economic theory which is not discussed from the planning perspective, and Johansen always manage to draw some interesting implications from even the apparently most esoteric parts of the theoretical literature."

The above-mentioned comment clearly shows that the approach to Economic Planning, based on the work of Leif Johansen, was comprehensive in nature and, by its characteristics, flexible enough to remain current, in other words up-to-date. Even so, after the extinction of that curricular unit – which was the first one to be taught when we entered the Department of Economics at the Universidade de Évora, in the distant year of 1988/89 – paradoxically because it was considered out of date, we did everything so that it would be (back) considered in the curricular plan of the 1st cycle/degree in Economics. This is how the Economic Decision Analysis course (which we chose in the context of our 'aggregation' in Economics, in 2011) emerged.

From Johansen (1977) we still retain in memory (and still use) a picture like Figure 1.

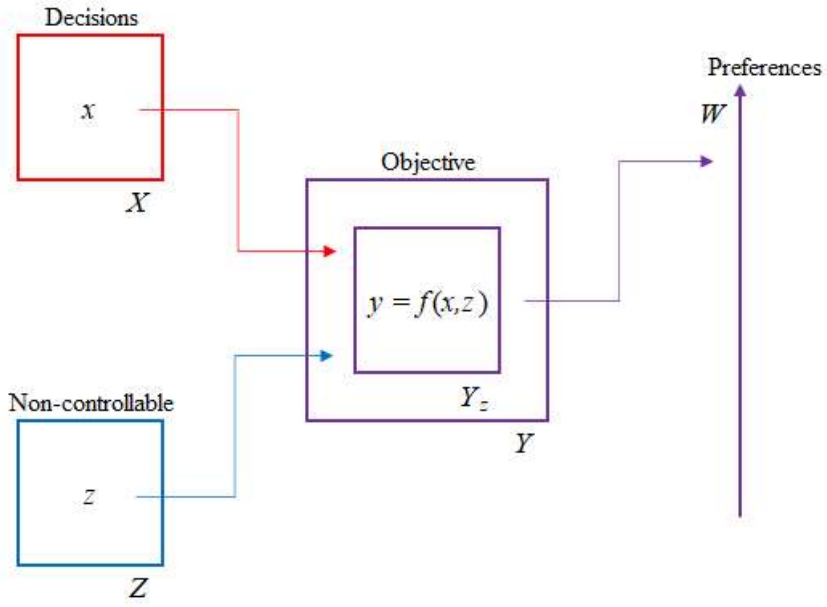

Figure 10: The basic scheme of decision analysis

In fact, Figure 1 perfectly reflects the scope, flexibility and adaptability of the approach suggested by Johansen (1977), which at first appears to be (almost) abstract – or esoteric, in the words of that comment.

In the figure, X represents the set of possible decisions, x being one of them, and Z represents the set of possible states assumed by the non-controllable (by the decision-maker agent(s)) factors, and z one of them. To each pair (x,z) corresponds a (unique)

state for the objective variables, $y = f(x,z)$, – forming the set Y – to which, by nature, the decision-making agent(s) assume preferences, $W(y)$.

Thus, the optimal decision, say, x^*, will be the one that, being possible, i.e. x^* belonging to X, together with a (predicted / known / assumed) state $z^\wedge$, gives rise to the best y, i.e. the one that, belonging to the set Y_z, when evaluated on the scale of preferences it reaches the highest possible value.

The determination of optimal decisions, according to the approach outlined above, in the most diverse situations is, therefore, what we intend to study in the Economic Decision Analysis course, which, is fair and relevant to be said, corresponds to the first part of the extinct Economic Planning course.

Thus, in what concerns the **general objectives and skills to be acquired**, the Economic Decision Analysis course has the essential objective of providing the study of the decision-making process by economic agents under the situations, considered more relevant, which they usually face. Thus, according to the absence or not of random elements (in the decision-making process), and their type of randomness, the certainty, risk and uncertainty situations are analyzed. These situations are studied under a static context at the 1st cycle/degree and also under a dynamic context at the 2nd cycle/degree.

The abstraction and flexibility that characterize the perspective with which the problem of determining the (optimal) economic decisions is studied makes the course, essentially, a means of acquiring modes of reasoning and not a menu of 'recipes'. Thus, while at the theoretical level, the necessary instruments are provided to choose the optimal decisions in each situation, at the practical level, the understanding of these instruments is tested through the use of different applications (of macroeconomic, microeconomic, econometric nature, etc.) that, in this way, can be considered particular cases of the theoretical approach followed in the course.

Thus it is possible to consider that, within the scope of professional skills that students are expected to acquire in order to integrate into the job market, the course aims to provide the ability to analyze economic activity in its various dimensions, as well as develop the ability to understand the decision-making processes. decision-making, as well as contact with the definition and execution of applied research work, in various fields of Economics. In terms of general skills, the course provides adaptability,

innovation, reasoning or independent thinking, decision-making skills, as well as team work. In terms of specific skills, the course contributes, through the consolidation of the capacities to face the multiple aspects of the decision-making processes, to the solid formation in the foundations of economic science in its aspects of (applied) macroeconomics and microeconomics, as well as for mastering the various tools of economic, qualitative and, above all, quantitative analysis.

In what concerns the **consistency of the syllabus with the objectives of the course**, naturally, such an approach, and its intrinsic objectives, is reflected in the structure of the syllabus (which can be found in the annex). In fact, the decision theory associated with each case – but only the strictly necessary – is always considered first, and secondly, the economic applications, which are particular cases. To attest the wide scope of the analysis, it can be said that, for example, in the 1st cycle, there are cases of macroeconomics, microeconomics, public economics, econometrics, economic policy, operations research, economic psychology, international economics, fiscal policy, financial economics, and economic planning (this one, symbolically).

Obviously, the achievement of the objectives that are intended to be achieved with this course depends, in part, on the previous knowledge, of the various areas of Economics, that the students already possess when attending the course. Therefore, when creating the course for the 1st cycle/degree, we proposed that it should be placed in the last semester of that degree. In fact, it ended up being in the penultimate semester which, under normal conditions, still does not raise any major problems.

To be more specific, in what concerns the **course framework**, Economic Decision Analysis is part of group II of optional courses in Economics. Taking into account the current curricular plan of the degree, it must be attended in the 5th, i.e. the penultimate academic semester. Thus, it is supposed to be attended after students have attended mandatory core curricular units, namely:

- Principles of Microeconomics;
- Mathematics Applied to Economics and Management I;
- Principles of Macroeconomics;
- Mathematics Applied to Economics and Management II;
- Microeconomics I;
- Macroeconomics I;

- Probability and Statistics;
- Microeconomics II;
- Macroeconomics II;
- Econometrics I;

which allows the acquisition of (minimum) knowledge required by the course. Given that, in fact, it is possible for students to attend the Economic Decision Analysis course without having already been approved in all those courses, in these cases, there are admittedly some difficulties.

In what concerns the **teaching methodologies**, the teaching-learning process is based on the presentation of the decision theory needed for the understanding of the several economic applications. While, at theoretical level, the necessary instruments to take optimal decisions are supplied, the understanding of them is tested by the use of several applications (from macroeconomics, microeconomics, econometrics, economic policy, operations research, etc.).

Given the characteristics of the course, the entire matter, in each lecture, is presented on the board, as a way of ensuring, as much as possible, that there are no doubts about the various steps that the subject involves.

While the information collected by the students in the lectures is of crucial importance in the acquisition of knowledge, obviously it can / should be complemented by reading the recommend bibliography. In what concerns **the course support bibliography**, given the comprehensive nature of the course, the list of supporting bibliographic references could be extremely long. In fact, even if it were intended to suggest works that covered, *stricto sensu*, each particular case or economic application that is to be presented throughout the course, it would still be a list, certainly, composed of several dozen titles. On the other hand, the innovative nature of the approach makes it difficult to suggest a (single) economic decision analysis manual.

Thus, taking into account that difficulty and the need to avoid the dispersion of suggested bibliographic references, with the consequent overload of effort (in a course that, by itself, already requires a lot of extra-class effort), a support text, corresponding to the development of the syllabus, authored by us, is made available and being strongly recommended to be studied, in a regular way. This support text, as well as all the other

elements of support for the course, are placed in the *moodle* area of Economic Decision Analysis; see http://dspace.uevora.pt/rdpc/handle/10174/4427.

The regular study of subjects is, in fact, very advisable in Economic Decision Analysis, not least because only this allows to raise doubts that, sometimes, students do not realize they have. From this point of view, it turns out that it is advisable, in terms of evaluation, to choose the continuous evaluation regime, whenever possible.

In what concerns the **assessment**, according to the Academic Regulations of the University of Évora, students can choose the continuous evaluation regime or the evaluation system by final exam.

In the 1st cycle/degree course, the continuous assessment regime consists of three written (closed-books) tests: A first test covering the matter corresponding to the Case of a Single Decision-Making Agent in chapter 1. Decision Analysis in Certain Situation, lasting 60 minutes, and weighting of 25%; a second test covering the matter corresponding to the Case of Two Decision Maker Agents of Chapter 1. Decision Analysis under Certainty, lasting 90 minutes and weighting 35 % of the final grade; a third test covering the matter of chapters 2. Analysis of Decision under Risk and 3. Decision Analysis under Uncertainty, lasting 90 minutes, with a 40% weighting in the final grade. The modality of assessment by exam is based on a single assessment written (closed-books) test covering all the three chapters.

In the 2nd cycle/degree course, the continuous assessment modality is based on the accomplishment of one written (open-books) test, whose weight is 60% on the final grade, and an assignment based upon the demonstration of the analytical results of a scientific article, whose weight is 40% on the final grade. The modality of assessment by exam is based on a single written (open-books) test covering all the matters under study throughout the course.

As a **balance of results**, we can say that, after being overcome the (understandable) barriers created by the language, purposefully generic (abstract or esoteric), used in Economic Decision Analysis, the (also understandable) difficulties that this course entails, usually end up being also overcome. Acknowledging that Economic Decision Analysis is a difficult course, it is also the course where, in certain cases, our best classifications are given, precisely to those students to whom we were able to transmit the sensitivity for and utility of this type of (general) approach.

3. Conclusion

What have we learned at the Economic Decision Analysis course? The information collected over these years of teaching allows us to say – as we, indeed, do in the first lecture – that, in fact, it is (most probably) the most difficult course of the 1st cycle/degree in Economics (at the University of Évora) but it is also (probably) the more important course given that we will be considering the general case, whereas the other courses consider the particular cases in Economics.

Although the importance of the course being not that one, in fact it corresponds to an approach that we believe is important to be used, especially in the 1st cycle/degree of higher education studies. Plainly, the abstraction and flexibility that characterize the course make it a means of acquiring modes of reasoning, which is of obvious importance, mainly at those first degrees of academic formation.

In particular, that flexibility is evidently considered by giving more attention to the economic applications, emphasizing being (mere) particular cases of the decision theory corresponding to the situations of interest. As expected, our teaching methodology reflects this objective, which, taking into account the results that we have been obtaining, may be considered as sufficiently successful, also from the point of view of what students learn at this Economic Decision Analysis course.

As for the limitations of this work, in fact, it remains to be seen what the students' real opinion is about this course. Being sure that the students comment on the courses, immediately after their attendance, we believe that an even more reliable analysis could be obtained through an inquiry (sufficiently after the attendance of the course) of the students. That remains to be done in further studies.

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Annex I

Syllabus of the Economic Decision Analysis course (for the 1st cycle in Economics)

1. DECISION ANALYSIS UNDER CERTAINTY
1.1. The Case of a Single Decision-Making Agent
1.1.1. Decision Theory: The Basic Scheme
1.1.2. Economic Applications / Particular Cases
1.1.2.1. A case of macroeconomics: the IS-LM model
1.1.2.2. A case of microeconomics: the duopoly model
1.1.2.3. A case of public economics: the Laffer curve
1.1.2.4. A case of econometrics: the least squares estimators
1.1.2.5. A case of economic policy: the fixed targets criterion
1.1.2.6. A case of operations research: the investment projects analysis
1.2. The Case of Two Decision-Makers
1.2.1. Decision Theory: Teams Theory and Game Theory
1.2.2. Economic Applications / Particular Cases
1.2.2.1. A case of economic psychology: the difficulties of cooperation
1.2.2.2. A case of economic policy: the credibility of economic policies
1.2.2.3. A case of international economics: the international coordination of economic policies
2. DECISION ANALYSIS UNDER RISK
2.1. Decision Theory: The non-controllable variables and the multipliers of decision variables
2.2. Economic Applications / Particular Cases
2.2.1. A case of economic policy: the models of partisan cycles
2.2.2. A case of fiscal policy: the uncertainty in public spending multipliers
2.2.3. A case of financial economics: the portfolio analysis
3. DECISION ANALYSIS UNDER UNCERTAINTY
3.1. Decision Theory: The decision criteria and the decision trees
3.2. Economic Applications / Particular Cases
3.2.1. A case of economic planning: the decision rules and the flexibility of plans

Annex II

Syllabus of the Economic Decision Analysis course (for the Master in Economics)

1. DECISION ANALYSIS UNDER A STATIC CONTEXT
1.1 The Certainty Situation
1.1.1. Decision Theory
1.1.2. Economic Applications / Particular cases
1.2. The Risk Situation
1.2.1. Decision Theory
1.2.2. Economic Applications / Particular cases
1.3. The Uncertainty Situation
1.3.1. Decision Theory

1.3.2. Economic Applications / Particular cases
2. DECISION ANALYSIS UNDER A DYNAMIC CONTEXT
2.1. The Discrete Time Situation
2.1.1. Decision Theory
2.1.2. Economic Applications / Particular cases
2.2. The Continuous Time Situation
2.2.1. Decision Theory
2.2.2. Economic Applications / Particular cases

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(Complementary) bibliography

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