

RESEARCH ON THE TEACHING METHOD OF ECONOMETRICS

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ABSTRACT

In the practical teaching of econometrics, it is found that many students have a good grasp of the basic concepts of statistics, but still can not understand the contents of econometrics. Students do not know how to combine the existing mathematical knowledge with econometrics to form a complete logical system. This paper finds the problems in teaching, and puts forward the corresponding improvement ideas and Countermeasures to improve the teaching effect.

Keyword: Econometrics, Economics Teaching, Teaching method.

I. Questions raised

With the development of economy, empirical research represented by econometric model analysis method has become the mainstream method of economic research in China, which is widely used in economic development prediction, economic policy evaluation, etc. At the same time, because of its emphasis on mathematical basis, logic deduction, theoretical teaching and experimental computer, the teaching effect of econometrics is also difficult to be greatly improved. The main contents of econometrics teaching include: linear and nonlinear regression analysis, multicollinearity, heteroscedasticity and autocorrelation, among which linear regression analysis is the basis of various econometrics. A complete linear regression analysis includes building model, estimating parameters and testing model. The syllabus only requires the students to establish the corresponding econometric model according to the economic theory, but the significance test of the model, the significance test of the parameters, and various tests of multicollinearity, heteroscedasticity and autocorrelation are various and easy to be confused, and the students always feel very difficult and difficult to master in the learning process. In addition, the lack of effective interactive teaching methods, the selection and use of cases are not appropriate, the assessment method is not comprehensive, the selection of teaching materials is not reasonable, the theoretical teaching and experimental machine are out of touch, and the actual operation ability of students is insufficient. In this regard, combined with many years of teaching and scientific research experience, this paper puts forward the corresponding strategies in the teaching of Econometrics for teaching reference and reference.

II. Teaching functions and requirements of Econometrics

(I) Grasp the basic concepts, principles and model construction ideas of Econometrics. Econometric education plays an important role in the economic discipline. Quantitative analysis by using econometric analysis method is the main means for social science practitioners to engage in work and scientific research. Through teaching, students can master econometrics theory, understand and skillfully use theoretical hypothesis, model derivation, model structure, parameter estimation, conclusion analysis and the nature of interdisciplinary knowledge theory. Econometrics is a combination of economic theory, statistics and mathematics, so it has both the form of liberal arts and the nature of science. This feature not only increases the richness of theoretical knowledge of econometrics, but also increases the

difficulty of learning, and also requires teachers to have both relevant knowledge of economics, mathematics and statistics, and even needs to have the ability of computer operation, but at present, there are not many teachers with these abilities, many mathematics or economics professional background teachers as econometrics teaching will often cause one-sided knowledge, so the level and quality of econometrics teaching need to be further improved.

(II) Ability to analyze and solve problems with econometric theory.

The general mathematical economic model attaches great importance to the study of the theoretical relationship between economic variables and describes it with deterministic equations. Different from this, econometrics attaches great importance to the study of quantitative relationship between economic variables and describes it with stochastic equations, so it has great randomness. Because a random error term is introduced into the econometric model. Therefore, the econometric model is endowed with great charm and practical applicability. Econometrics consists of theoretical econometrics and applied econometrics. Theoretical econometrics takes various econometrics theories and methods as its main content. Its purpose is to provide research and solution methods for the application of econometrics. The application of econometrics is under the guidance of the basic economic thought, based on the economic statistical data, to deduce the econometric model, to study, explore and demonstrate the economic laws by econometric means, to analyze and predict the economic development, and to make quantitative evaluation for economic policies. Master the basic knowledge of econometrics, the method of model derivation and the idea of model construction, find the best model to solve economic problems, properly estimate, deduce and test the model, so that the results can effectively reveal the data characteristics of economic development and predict the trend of economic development.

III. Problems in the teaching of Econometrics

Unreasonable teaching methods. Almost all classroom teaching methods are based on teaching, and there are problems in multimedia teaching. As a large number of models and formulas exist in Econometrics courses, multimedia teaching may impose the teaching content on students in a very short time, increase the burden of students' thinking and the degree of understanding knowledge, which may lead to students' failure to understand the teaching content in a timely manner, resulting in the impression of relevant teaching content is not impressive by blackboard writing. In addition, the teaching method in the classroom is mainly teaching. However, econometrics is a core course with strong practicality. It is necessary to master the specific application and how to apply the model and method, and under what conditions to adopt the model and method. Therefore, the teaching method based on the empty theory will make the econometrics teaching seem boring, which makes it difficult for students to fully understand. The teaching of econometrics at all levels overemphasizes the complete theoretical system, and many teaching methods such as case, role-playing, experience, discussion and heuristic are not well developed.

The current course assessment method is not scientific. The present econometrics examination results are basically determined by the final examination results. For the evaluation of the econometrics course, the scores of one test paper determine that the econometrics level of undergraduates is obviously unfair, and it is difficult to truly test the application ability of students to solve practical problems. The goal of econometrics course is to enable students to master the basic theories and methods of econometrics, and to use econometrics software to establish an econometrics model, and to complete the test, revision and estimation of the model, to make a reasonable economic interpretation of the model, and to make appropriate structural

analysis or economic prediction or policy evaluation as required. And cultivate students' ability to solve practical economic problems.

IV. Building a unique teaching system of Econometrics

(I) Strengthen the purpose of econometrics learning under the guidance of professional related cases.

Students from different professional backgrounds have higher sensitivity and stronger interest in the problems of their major. This requires that in the course design, we need to find appropriate cases that are consistent with the students' majors, and put forward problems related to the knowledge points of econometrics. For example, what kind of model should be built in the case for analysis, how to obtain the parameters in the model, how reliable the parameters are, whether the established model is appropriate, and whether there is a better model to solve such problems? Let students learn the relevant measurement knowledge points with questions, will play a multiplier effect with half the effort. At the same time, taking the cases related to students' major as guidance will increase the purpose of students' learning measurement methods, and deepen the intuitive experience of the application of measurement methods in their professional direction.

(II) Grasp the basic analysis vein of measurement methods based on the ideas embodied in measurement theory.

The core content of econometric theory is parameter estimation, the nature of estimator and hypothesis test. In teaching, the methods of parameter estimation mainly involve the least square method and the maximum likelihood method. The properties of estimator mainly involve the properties of Gauss Markov Theorem and maximum likelihood estimator. Hypothesis test mainly involves the significance test of regression coefficient and the overall significance test of the model. The thorough understanding of these theories directly determines whether we can grasp and use more complex econometric models freely. Therefore, appropriate theoretical derivation is necessary. It should be noted that the teaching of measurement theory should avoid derivation for derivation, and the emphasis should be on the in-depth explanation of the practical meaning of each theory.

(III) Taking the interpretation of experimental results as the main line, build a bridge between theory and practice.

It is the real goal of econometrics teaching to apply econometrics model properly and accurately to solve practical problems. This requires the combination of econometrics theory and actual software operation, the interpretation of various output results of the model, the real understanding of the relationship between theory and practice, and the cultivation of students' ability to solve professional problems with econometrics. Therefore, it is necessary to carry out the experiment course of measurement software simultaneously with theory. After putting forward cases that can arouse students' interest in learning and deducing the measurement theory involved in the cases, it is necessary to show the measurement results of the cases from the perspective of practical operation, involving the introduction of measurement software, data search, interpretation of the results of the basic measurement model, testing the problems of the basic model, etc. The basic model is improved until the ideal model is found, and the ideal model is used for prediction and structural analysis. The interpretation of the experimental results can really improve the students' ability of econometric modeling.

V. Conclusion

The study of econometrics should not only stay at the theoretical level, but ignore the practical role, and deal with the problems existing in theory and practice, so as to play its due role in real life. This paper summarizes some problems existing in the process of econometrics learning, discusses the teaching function of econometrics, and on this basis, puts forward some solutions. Guide and inspire students to master the basic principles and methods of econometric analysis, stimulate students' interest in learning boring econometric theory, and effectively improve the effect of econometric theory teaching. Although it is only a preliminary exploration combined with the specific teaching content, hoping to have some influence on the econometrics teaching in the future, many deep-seated theoretical and practical problems need further research and discussion.

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