



H.F.R.I.
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Research & Innovation

Description of the funded research project
1st Call for H.F.R.I. Research Projects to Support Faculty
Members & Researchers and Procure High-Value
Research Equipment

Principal Investigator: Prof. Elias Tzavalis
(collaborators: Profs. DK. Christopoulos, Y. Dendramis and
Mpoikos – external collaborators: Profs M. Leon-Ledesma, A.
Magdalinos and P. McAdam)
Title of the research project: Dealing with the Problem of Endogeneity in Threshold
models

Reader-friendly title: Threshold endogeneity

Scientific Area: Social Sciences / Economics

Institution and Country: Athens University of Economics &
Business, Greece

Host Institution: Athens University of Economics & Business
(Department of Economics)

Budget: 150126 euros

Collaborating Institution(s):
University of Macedonia (Department of Economics)
University of Kent (Department of Economics)
University of Southampton (Department of Economics)

Duration: 3 years

European Central Bank

This research project aims to develop econometric methods dealing with the problem of endogeneity of threshold models, or more general non-linear models, and standard regressions frequently used in practice. This will be done based on a new econometric methodology which relies on Copula Theory. This theory allows for the error term and threshold variable to be non-normally distributed and/or non-linearly dependent, especially at the tails of the distribution. Relaxing the assumption of normality is also very important, since many economic variables used as threshold (or transition) variables as well as regressors are not normally distributed, in practice. Copula Theory enables us to capture asymmetric types of dependence between the threshold variable and the error term which are of major importance in financial and macro econometrics and have important implication on economic and social policies.

Research Project Synopsis

Project originality

The originality of the project in economics stems from the following properties of the copula theory. First, the copula joint function can capture the dependence structure among a set of covariates independently of their marginal distributions. Second, the copula specification can capture linear and non-linear types of dependence and, finally, can allow for different correlation across different economic regimes. The above properties can have a number of useful applications in economics.

A number of publications are expected to appear in academic journals with a high impact rate. Preliminary drafts will be published as working papers and/or conference papers. The research papers produced are expected to have a high impact on both theoretical and applied econometrics, as well as applied studies in economic and social sciences in which the problem of endogeneity is serious and is expected to affect results and policy implications.

The HFRI funding is very important for our research project as it allows to appoint appropriate research assistants and/or support staff helping with the development of the codes and the simulation of the econometric methods suggested, the organization of the team meetings, conferences and seminars, as well as the diffusion of the results of the project. Furthermore, it will allow the members of the team to entirely focus on the project and deal with any administration and/or other cost related to it.



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COMMUNICATION

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