Habilitation Thesis

Conf. Univ. Dr. Mitrică Nelu-Eugen

DIRECT INVESTMENTS PATH

Abstract

The following habilitation thesis summarizes mine main expertise in the economic scientific fields and the most important scientific works associated.

Following one of my research activity principles, respectively to cover as large area as possible in the fields of Economics, I tried to involve myself in a diversity of research projects more or less related to the finance field, but all of these being able to generate a certain "value added" to my economic scientific knowledge set.

The starting point of my activity was the research conducted, during the doctoral studies and extended in the period immediately after, in the field of financial equilibrium and of the mix of economic policies. I studied the correlations between representative macroeconomic variables during the period 1990-2006, finding significant atypical correlations during the first 10 year of the period. The reasons of these atypical correlations were mainly related to the transition from a centralized economy to a market economy. Then, after 2000, the research showed a tendency of the variables and correlations to return to the normal.

In the same time I was involved in a pioneering study of the Romanian Capital Market's informational efficiency, presented in the first chapter of the thesis. The initial study used various classical weak informational efficiency tests and proved the lack of weak informational efficiency, for prices of six of the most liquid securities traded during a relatively short period after the reopening of the Bucharest Stock Exchange. Nevertheless, the tests run ignored the liquidity of market and correspondingly the results were not considered a clear sign of excess gain possibility, but more an indication that the weak informational efficiency tests used in the developed markets, especially the filter rule tests, are not valid for (under)emerging markets.

The research was updated for a significant larger period and for a triple number of securities, five years later. This time the research used more developed tests, respectively Multiple Variance Ratio tests. The new study found the prices evolution looked unpredictable and concluded the weak informational efficiency assumption cannot be rejected for the Romanian Capital Market, as a sign of the development and evolution to the normality.

The next part of the thesis presents the research developed for assessing the risks of the Romanian Banking System in the period immediately after the 2008 global crisis. For this purpose a generalized CAMELS approach was used at the level of the Romanian Banking System consolidated data, mainly using as benchmark the provisions of Basel II agreement. The study revealed the highly foreign exposure as the main risk affecting the Romanian Banking System, but also the fast depreciation of the receivables, with an apparently stabilization trend at the end of 2010. Nevertheless, the study reflected a sound capitalized banking system, and this finding was confirmed by the further evolutions.

The next chapter approaches my involvement in a multidisciplinary research project with two subchapters corresponding to the study regions of the project. The project was basically in the field of water management and water economics. My contribution consisted mainly in modelling the public water demand and on this basis in forecasting the far future public water demand and the possible public water deficit (for 2050 and 2100 horizons). Also I was involved in the analysis of the economic features of the areas as in the formulation the economic solutions for dealing with or for avoiding the public water deficit. Because the available data were extremely limited and also the correlations were somehow vague, for the modelling and forecasting purposes a simplified fuzzy regression approach was used. The studies conducted revealed a high risk of far future public water deficit in Leu-Rotunda Plain and a significant lower risk in the Timiș Plain. The involvement in this large interdisciplinary project opened for me a valuable scientific path: respectively I learned about the use of the fuzzy variables and regression for modelling the variables affected by incertitude. In my opinion this approach is useful not only for the demand modelling - the approach used in the cost benefit-analysis of the infrastructure investment for a new cleaner fuel for vehicles in the Romanian market subsidized by European Commission (Connecting Europe Facility), the last workpaper

presented in the thesis, but also, in my opinion, it is more suitable for modeling financial variables, like return on investment or return on equity at companies' level, solvency and liquidity ratios and macroeconomic indicators.

The last part of the thesis covers the most outstanding scientific research result, under a relatively recent developed research interest in the field of direct investments, respectively the Cost-Benefit Analysis. This approach has an important advantage compared to the classical financial analysis approach based on the net present value of the cash flows paid or generated by the project, which is focused exclusively on the positive effects over the shareholders wealth, ignoring all the other stakeholders and also the third parties from society. The advantage comes from the opportunity to take a comprehensive approach under the Cost-Benefit Analysis, considering all the effects, including the monetization of the negative and positive externalities, of an investment project. In my opinion, from now on the prioritization of the projects needs to be based on the best Cost-Benefit Analysis results, especially for the public investments but also for the responsible private investments.

There are two subchapters presented here:

- The Cost-Benefit Analysis of an environmental preservation investment for a large natural protected area, with the purpose to assure the continuity in providing tourism benefits: this study used the Zonal Cost of Travel Approach to find the consumer surplus as the measure of the tourists willingness to pay for the benefits provided by the project area. The results showed the acceptable limit of the cost for this investment, considering the benefits provided to the society.

- The Cost-Benefit Analysis for the first infrastructure investment needed for switching to a completely new cleaner fuel for vehicles, in Romania, respectively the switching to the compressed natural gas (CNG). This investment project was financed at the level of the European Commission (Connecting Europe Facility), being in the implementation stage. In this analysis the Fuzzy Regression Approach was used to forecast the main driver of the CNG demand, respectively the number of CNG vehicles. The study finally proved the value of the investment from the society point of view, considering three types benefits provided: the reduction of the climate change effects of the emissions, the decrease of the negative health

effects generated by the other emissions of air pollutants, reduced by the switch to CNG and the monetary savings provided to the users both because of the lower price and lower excise taxation (because CNG is considered the cleanest fossil fuel).

Finally the thesis considers some future research career prospects considering three directions:

1.   The extension of the fuzzy regression approach in the capital markets field and financial return projection, in a first stage. (The fuzzy approach can be used also in projecting the evolution of financial analysis variables, at the company or industrial sector levels; and in projection of the evolution of macroeconomic variables.)

2.   The electricity market and the price effect of the electricity from renewable energy sources, green certificates and the case of the overcompensation of the electricity from renewable energy sources producers.

3.   The use of the Cost-Benefit Analysis in the case of various investments. For example, in the near future the case of green building retrofitting investments will be approached.

This future planed activity includes the dissemination of the social benefits of the Cost-Benefit Analysis as investments assessment tool, with the purpose to stimulate the sound public and private investment approaches in the Romanian economy and the increase of the absorption rate of the European Union funds, for social desirable projects.