

INVITATION TO PhD DEFENSE

I'm delighted to invite you to the Public DEFENSE of my PhD thesis for the award of the degree of doctor in Management Science on **Wednesday, October 17 at 2.30 PM** in the conference room of the SH2 building at the Faculty of Economics and Social Sciences of the University of Lille 1.

The thesis is entitled

« A cross-efficiency approach to portfolio selection »

The defense will be followed by a “pot” in the room of the Courier of the same building, to which you are warmly invited.

Best regards,

Janet GANOUDI

General Abstract

The process of portfolio selection could be divided into two stages: the first one is the evaluation of financial assets and the second is to choose the best ones to construct portfolio. It can be considered as Multi-Criteria-Decision-Making (MCDM) process. It consists in selecting a combination of financial assets that can best meet the investors' objective. In this dissertation, different criteria are analyzed and the question of where and how much money to allocate to each of the financial asset is processed. We propose a new multi-criteria analysis approach to portfolio selection based on Data Envelopment Analysis (DEA) cross-efficiency model. To assess financial assets performance, the DEA cross-efficiency framework considers the attributes to minimize as inputs and those to

maximize as outputs. The first methodology consists in nesting the DEA cross-efficiency model into the Mean-Variance-Skewness-Kurtosis (MVSK) space. We then cover the merit of considering higher order moments in portfolio selection process. The second model combines the DEA game cross-efficiency approach with risk component to select portfolio. Finally, we propose a model incorporating the DEA game cross-efficiency into Profitability-Efficiency. We apply the proposed approach to firms listed on the Paris stock Exchange, and demonstrate that the resulting portfolio yields higher risk-adjusted returns than other benchmark portfolios for a 6-year sample period from 2010 to 2015. Overall, these methodologies provide more discrimination for financial assets by providing unique ranks in a first step and permit to select portfolio by underlying preferences of the decision-maker in a second step.

Keywords: Portfolio selection, Data Envelopment Analysis, Cross-efficiency, higher order moments, game theory, Paris stock exchange, Multi-criteria-decision-making, profitability

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