# Clustering Analysis of Real Option Value and Financial Ratios Using Self-Organizing Map: A Case of Finland

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## Abstract

This paper studies ex-post financial ratios and real option values of Finnish exchange listed companies' publicly available yearly financial data, i.e., financial statements and market valuations, using self-organizing map, SOM, an unsupervised neural network based tool for clustering, analysis and visualization of multidimensional data. In the unsupervised learning the training set contains only the selected input values and the SOM is to learn the data structure. We have selected the financial inputs in such a way that they include the key drivers of companies' market values above their fundamental book values to get a proxy for their real options values. We interpret the visualized clustering results and argue that the method is applicable and valuable, in addition to general descriptive purposes, for private investors', venture capitalists' and corporate acquirers' portfolio selection in their quest for upside potential. This opens up interesting future research opportunities from real options perspective laid out in this study.

*Keywords: real option value; financial ratio analysis, clustering, self-organizing map*