

# Predicting the Financial Crisis by Mahalanobis Taguchi System –Examples of Taiwan’s Electronic Sector

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## Abstract

In the past researches of financial crisis early-warning model, multiple regression, linear probability model, and multiple discriminate analysis are commonly adopted, all of which have generated good discrimination effects, with over 90% accuracy. Dr. Taguchi, well known for his robust design, has lately brought up a new method - Mahalanobis - Taguchi System (MTS), which is mainly used to conduct multivariate diagnoses and forecasts. This study attempts to use MTS to build up a financial crisis early-warning model for Taiwan’s companies. It chooses both in financial sound judgment and in financial trouble TSE- and OTC-listed electronic companies in 2005 as training set and uses both in financial sound judgment and in financial trouble TSE- and OTC-listed electronic companies in 2006 as testing set to verify the accuracy of this model. There are two phases in our research, in which we firstly use MTS, logistic regression and neural network to establish the financial crisis early-warning model, followed by a comparative analysis of average accuracy rate of financial prediction in the second phase. The result of experiment shows that the accuracy rate of financial crisis early-warning system established by MTS, logistic regression and neural network are 96.1%, 92.3%, and 96.1%, respectively, indicating that MTS provides greater application effect in predicting financial crisis.

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Keyword : MTS

Financial crisis prediction

Logistic regression

Neural network