

Measuring credit risk bank customers using artificial neural network

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Abstract

Purpose: In many studies the relationship between financial markets development and economic growth has been proved. Banks are one of the most important institutions in the financial markets. Banks are responsible for savings collection and providing financial facilities for investors. Credit risk is one of the problems which banks are faced with while doing their tasks. Credit risk means the probability of non-repayment of bank financial facilities granted to investors. If the credit risk is lower, then banks are more successful in performing their duties and more time to the country's economic growth helps. Credit rating of customers and identify good and bad customers, will help the banks to lend to the good customers and hereby they reduce probability of non-repayment

This paper aims to identify classification criteria for good and bad customers in Iranian banks .

Design/Methodology/Approach: This study can nest in applied studies group and the research strategy is descriptive. Artificial neural network technique is used for financial facilities applicants' credit risk measurement and the calculations have been done by using SPSS and MATLAB software. The data has been collected by refer to records of the facilities of banks applicants during the years 2004 - 2009. The sampling is random. Sample estimate has been done by a pretest sample size of 90 cases, and according to the formula of sample size, 497 is selected as the number of samples. 18 variables are used to identify good from bad customers. They are: sex, age, education, occupation, work history, type of facilities, facilities length, collateral, history of partnerships with banks, interest rates, account status of the individual applicant, penalty rates, branches grade and value of collateral.

Findings: The results show that type of facilities, interest rate has most important in classification criteria for good and bad customers. Sex, age, occupation have minimum important for classification customers to good and bad.

Practical implications: Pending and past maturity loans have been one of the problems of the banking system in recent years in Iran, thus results of this study help to decision maker in money market in Iran for solve or decrease this problem.

Originality/Value: The major contribution of this paper is specifying the most important determinants for rating of customers in bank sector in Iran.

Keywords: Credit risk, Credit rating, Artificial neural network , Iran

Paper type: Research Paper
