Project Result

2016 data analysis

Logistic Regression

p-value < 0.05 variable: sales growth, company size, credit score

Sales growth and company size, the regression coefficient is a positive value, which positively affects the increase in dividends, and the credit score has a negative correlation.

C5

Maximum depth was analyzed from 5 to 10 by Information_gain.

As a result of the analysis, in C5, the maximum depth was the highest at 76.64%.

Analysis of Root Node and Decision Node through Graph

Root node: Retained earnings

Decision nodes: sales growth, debt ratio, equity capital growth

Considering that the root node comes out as retained earnings that used to be used as a dividend policy variable, the modeling was well done.

CART

Gini_index, maximal depth 5~10

Analysis showed 77.65% highest accuracy at depth 7

Analysis of Root Node and Decision Node through Graph

Root node: Retained earnings

Decision-making nodes: equity capital growth, debt ratio, enterprise size

Considering that the root node comes out as retained earnings that used to be used as a dividend policy variable, it can be seen that the modeling was well done.

Looking at the root node of C5 and CART coming out as the same, it can be seen that retained earnings, which is a variable of the dividend part in the decision tree, were set as a significant variable.

Neural Network

A total of 4 analyses were performed through the 3rd and 4th layer neural networks, n and 2n.

The highest accuracy 75.64% when there is n on the 3rd floor

The highest at 76.13% when there are 2n on the 4th floor

2017 data analysis

Logistic Regression

p-value < 0.05 company size and the credit score.

As for the size of the company, the regression coefficient is a positive value, which has a positive effect on dividend growth

The credit score has a negative correlation.

C5

When the depth was 5 and 9, the same accuracy was 73.90%.

However, when it was depth 5, it was confirmed that there were only three cases that accurately matched the actual increasing company.

So, the value at depth 9 is more accurate.

Analysis of Root Node and Decision Node through Graph

Root node: Retained earnings

Decision node net income, sales growth rate, current ratio

CART

75.37% highest at Depth 6

Analysis of Root Node and Decision Node through Graph

Root node: Retained earnings

Decision node net income, inventory turnover, current ratio

Neural Network

Analyze n/2, n, 2n, 3n 8 times in 3rd and 4th layers

3rd layer, n pieces 75.37%

4th layer n pieces 75.69%

2018 Data analysis

Logistic Regression

P-value < 0.05 Sales growth rate, liquidity ratio, company size, and credit score

In terms of sales growth rate and company size, the regression coefficient is a positive value, which positively affects the dividend increase

The current ratio and credit score have a negative correlation.

C5

Maximal depth 5~10

78.24% highest in Depth10

Analysis of Root Node and Decision Node through Graph

Root node: Current profit

Decision node retained earnings, equity capital growth rate

CART

Maximal depth 5~10

76.74% highest in Depth5

Analysis of Root Node and Decision Node through Graph

Root node: Current profit

Decision-making node retained earnings, capital increase at the end of the term (common stock + preferred stock)