UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

A GOAL PROGRAMMING MODEL FOR CAPITAL BUDGETING

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

Capital budgeting or know as investment appraisal is important decision process that involve in the large scale of business field. Thus, through this study we are on the lookout for alternative ways in evaluating the investment projects by using Goal programming (GP) approach. The data were executed by LINGO 17.0 and the result showed that the objective functions are fully achieved. Investments are difficult to evaluate since it involving unmanageable number of iteration and considered for profitability. Therefore, GP models are most compatible in dealing with multi objective where we emphasize different goals in four models in order to find the combination of the investment projects that will give optimum result for the business development process. Furthermore, these investment projects are evaluated based on the Net Present Value (NPV). We used the well-known existing data from (Lorie and Savage, 1955). The results of the combination of investment projects are vary for each model. Six investment projects, X_1, X_3, X_4, X_6, X_7, X_9 accepted in Model 1, while in Model 2 the investment project 7, X_7 has been replaced with investment project 8, X_8 after added more constraints. Same output given in Model 3 and Model 4 which accepted investment projects X_1, X_2, X_3, X_5, X_6, X_7 when places new weightage and new goal constraints for the model respectively. This project is beneficial for the top management as a decision maker in making a decision. In addition, GP model for capital budgeting can also be applied to others capital problems such as loan-deposit ratio, liquidity, and capital adequacy.