

## A Goal Programming Model for Capital Budgeting Decisions

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### INTRODUCTION

It has been observed elsewhere (Porwal Kanti Swarup and Jaidev, 1979) that until very recently, in most work on normative models for capital budgeting, it has been assumed that firms while evaluating capital projects consider the attainment of a single goal, while in practice a firm's capital budgeting decision is seldom characterised by a single objective function. Therefore our objective in the present paper is to suggest a multi-objective criteria to the problem of capital budgeting by applying a goal programming model incorporating priority coefficients for different objectives.

The present paper is divided into three sections: Section I deals with a brief review of literature and the development of goal programming approach and its applications. In Section II, a general goal programming model is presented and in Section III, an attempt has been made to apply the goal programming model to the Capital Budgeting Decision (CBD) problem of Horie and Savage.

### SECTION I

#### *A Survey of Literature*

In a capital budgeting decision, the decision-maker faces a number of potentially serious problems: choice amongst a large number of alternative projects, physical and inter-relationships among alternative projects i.e. complementary or substitutive nature of the projects, financial and non-financial constraints on capital resources, critical manpower problem, unreliable or incomplete data, uncertainties regarding the true risk-return relationships among projects, etc. Each of the foregoing problems may require special consideration and may impose different constraints on the investment decision. In an attempt to provide a decision framework which considers the problems associated with the capital budgeting decision and yet remains tractable, numerous capital budgeting techniques and decision criteria have been proposed in the past. Some of the more