Chapter 5
Financial Analysis

ABSTRACT

The market and technical analyses aim at finding out whether or not the conceived product of the investment project is marketable and that its production is technically feasible. If the product is marketable and the investment project is technically feasible, then a detailed financial analysis is required. The basic purpose of the financial analysis as the final stage of a feasibility study is threefold: (1) to compute the total amount of the investment needed for realizing the project and decide how it would be financed, (2) to estimate the total amount of annual manufacturing costs for the production process as well as the total amount of annual sales revenues expected during the operating period, and (3) to evaluate the profitability of the investment on the basis of the costs and sales revenues associated with the investment project. If the investment project is profitable, then a risk analysis is conducted to evaluate its riskiness so as to decide about its desirability. Accordingly, the financial analysis stage is the backbone of this book. However, a chapter that would include these three subjects must necessarily be very large in size and complicated in content. Therefore, in order to prevent this complication and provide a clear theoretical explanation for the final stage of a feasibility study, the financial analysis stage is divided into three consecutive and complimentary chapters on the basis of the objectives stated above. Thus, this chapter is confined to the first objective in the sense of computing the total amount of investment in terms of the fixed capital (fixed costs) and the working capital, determining sources of financing, and estimating annual operating expenditures and expected sales revenues.

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COMPUTING THE TOTAL AMOUNT OF INVESTMENT

The total amount of investment refers to the amount of expenditures to be made for establishing a factory or a plant for production and making it ready to start and continue its operation smoothly. These expenditures and/or costs for realizing real capital investments are classified within two general categories; namely, fixed costs (or fixed capital) and working capital as explained in the following subsections.

Estimating the Total Amount of Fixed Costs

The fixed costs or fixed investment include the expenditures required to establish or build physically the factory needed for production. As it might be recalled, during the technical analysis the details of the production system were determined in terms of the production capacity, machinery and equipment needed, space and/or land requirements, and building needs. Later on, an implementation plan was developed through the project programming techniques called CPM and PERT to define the essential activities which are required to establish the factory needed. As such, on the basis of the information provided by the technical analysis, the essential fixed cost items are defined and then the related costs are estimated through some market researches for more accurate prices.

The fixed cost items for establishing a new factory or a plant are almost generalized in some standard forms as shown in Table 1 below. The total of all the estimated fixed costs is referred to as the amount of the fixed investment needed. Needless to indicate that fixed costs are made along the establishment period according to the activities required to build a factory as defined by the implementation plan developed at the end of the technical analysis. As might be recalled, the duration of the establishment period for constructing a factory is estimated by finding out the “critical path” of the network analysis made for preparing the implementation plan. In other words, the length of the establishment period is the critical path of the network of the implementation plan prepared in the technical analysis. In Table 1, the duration of the establishment period of the investment project is denoted by the symbol (m). Depending on the length of the establishment period, the number of years would count as (i = t₀, t₁, t₂, ..., tₘ). A brief explanation of the fixed cost items given in Table 1 follows:
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