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Understanding Discounted Cash Flow (DCF) Method

Discounted Cash Flow (DCF)

DCF Method is used in financial analysis of projects. Future stream of benefits and costs are reduced to present value. The present value of costs and benefits is compared to know which project gives maximum benefits.

Time Value of Money (TVM)

TVM states that money has value and money available at the present time is worth more than the same amount in the future due to its potential earning capacity.

Compounding/ Future value of present money

The process by which the present investments are made to grow with time is called compounding. The future value of present investment in the project is calculated by the formula of compound interest, i.e., A= P [1 +r]^ t.

Discounting/ Present value of future money

The process of computing the future returns to make them comparable with the present value is called discounting. A present sum is compounded to know the future value and future sum is discounted to know the present value.

Project Appraisal Techniques

There are three methods which take into account the time element associated with the cost and benefit streams.

(i) Net Present Worth (NPW), (ii) Benefit Cost Ratio (BCR), (iii) Internal Rate of Return (IRR)

(i) Net Present Value/Worth: NPV is the difference between present worth of benefits and present worth of costs. A higher NPV indicates that the project or investment is more profitable. To calculate NPV, the estimated cash outflow and inflow for each period must be established, as well as the expected discount rate.

Decision: (a) If NPW > 0; accept investment, (b) If NPW < 0; reject investment, (c) If NPW = 0; be indifferent.

(ii) Benefit-Cost Ratio (BCR): The BCR is the ratio of the present value of benefits and the present value of costs. It measures the return or benefit per unit of cost or investment. The decision making rule is (a) If BCR > 1; accept investment, (b) If BCR < 1; reject investment, (c) If BCR = 1; be indifferent

(iii) Internal Rate of Return (IRR): IRR shows the marginal efficiency of capital or return generating capacity of investment. IRR is the discount rate (R) at which the NPV=0. Such a discount rate (R) can be calculated by trial and error method. Estimation of IRR involves the following steps:

Step 1: Find out R1 (lower discount rate) at which NPV is positive.

Step 2: Locate R2 (higher discount rate) at which NPV is just negative.

Step 3: Calculate IRR as follow:

[IRR] = [Lower Discount Rate] + [Difference between the two discount rates] [NPV of the cash flow at the lower discount rate/Absolute difference between NPVs of the cash flow at the two discount rates].

Decision: If IRR > Required Rate of Return (RRR); then accept the investment, (b) If IRR < RRR; then reject the investment, (c) If IRR = RRR; then be indifferent.

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