Course

on

HS205: consumer Behaviour and Welfare Economics

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Instructor

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Investment, time and capital market:

- When a firm decides whether to purchase machineary or to build up a factory, it must compare the outlays it would have to make now with the additional profit the new capital will generate in the future

- **How much are future profits worth today?**

- **Present Discount rate**: How much is Rs. 1 paid in futre worth today? The answer depend on the interest rate, the rate at which one can borrow or lend money.

- **Let us assume the following two payment streams:**

Stream	**Today**	**1 Year**	**2 years**
Payment of Stream A	100	100	0
Payment of Stream B	20	100	100

- **Present discounted value (PDV) of the two payment streams:**

PDV	**R=5%**	**R=10%**	**R=15%**	**R=20%**
PDV of Stream A				
PDV of Stream B				

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- The NPV indicates the overall economic feasibility of a project in its entire life span. It is the sum of all cash flows in each time period, discounted to the present by using the time value of money. The formula used for calculating NPV is given as.

$$NPV = \sum_{t=0}^{n} \frac{C_t}{(1+R)^t}$$

. where t = Time of the cash flow, C_t = Cash flow at that point in time, and R = Discount rate

The BCR is a profitability index, which is the ratio of the present value of the cash flow generated to the present value of the cash flow consumed (Crundwell, 2008). It is the ratio of discounted benefits and discounted costs of an investment project. However, the BCR is an alternative way of viewing NPV result, which may make it easier to compare and prioritize prospective rehabilitation of projects. These two criteria show the same accept-reject decision, although they will not necessarily rank acceptable project in the same order. The information on BCRs, greater than or less than one, provides important guidance for relative economic justification of a project. Therefore, along with NPV, BCRs are calculated using the following ratio.

$$BCR = \frac{\sum_{t=0}^{n} \frac{B_t}{(1+R)^t}}{\sum_{t=0}^{n} \frac{E_t}{(1+R)^t}}$$

where B_t = Benefit at time t, and E_t = Cost at time t

Internal rate of return (IRR) is also calculated to find out the discount rate at which NPV is equal to zero. The IRR is the interest rate that makes the future worth of an investment equal zero. It is the interest rate that equates the present worth and annual worth to zero

$$NPV = \sum_{t=0}^{n} \frac{C_t}{(1+IRR)^t} = 0$$

C_t = Cash flow at that point in time