

# CAPITAL RATIONING

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## ABSTRACT

Capital rationing is a management tool for allocating limited funds. In every company the availability of funds are limited to the some extent whereas there are so many opportunities are available for investment. An investor wants to apply his funds in projects which maximize his profit. Capital rationing helps investors in this situation. Under capital rationing project having highest net present value is accepted.

## KEYWORDS

Capital rationing, Net present value (NPV), Investments, Projects, Funds.

## INTRODUCTION

Capital rationing is a situation where a constraint is placed on the total size of capital expenditure. The capital rationing situation arises when the availability of capital is limited to some extent and there are more profitable projects are available for investment under this situation. A decision maker has to select some of projects and has to reject some projects in spite of positive net present value.

## ASSUMPTION

The basic assumption of capital rationing is that the availability of capital is limited either due to external factors or internal factors.

## TYPES OF CAPITAL RATIONING

### **(1)INTERNAL CAPITAL RATIONING**

Generally, firms fix up maximum amount of capital that can be invested in projects, during a particular period of time. This type of restrictions is called as internal capital rationing or soft capital rationing.

### **(2)EXTERNAL CAPITAL RATIONING**

Inability to borrow capital from market due to external factors is called external capital rationing or hard capital rationing.

## SITUATIONS OF CAPITAL RATIONING

### **SITUATION 1 – PROJECTS ARE DIVISIBLE**

In case of divisible projects, part of projects can be accepted.

The following steps to be adopted for solving the problem.

1. Calculate the profitability index of each project.
2. Rank the projects on the basis of profitability index.
3. Choose the optimal combination of projects.

### **SITUATION 2 –PROJECTS ARE INDIVISIBLE**

In case of indivisible projects, part acceptance of project is not possible.

The following steps to be adopted for solving the problem.

1. Construct a table showing the feasible combinations of the project.
2. Choose the combination of the project with highest NPV.

### Example

B Ltd. has a capital budget of ₹ 15,00,000 for the year. From the following information relating to six independent proposals, select the projects if

### Situations

1. If the projects are divisible
2. If the projects are indivisible

**TABLE-1 : Showing the net present value of six independent proposals.**

Proposal	Investment (₹)	NPV (₹)
A	3,00,000	1,20,000
B	1,50,000	50,000
C	3,50,000	1,00,000
D	4,50,000	1,60,000
E	2,00,000	-80,000
F	4,00,000	1,40,000

### SITUATION-1

**TABLE-2 : Showing rank of each project according to Profitability Index(PI)**

Projects are ranked according to PI and arranged in descending order.

Proposal	Investment(₹)	PV of Inflows(NPV+I)(₹)	Profitability index	Rank	NPV(₹)
A	3,00,000	4,20,000	$42/30=1.4$	(1)	1,20,000
B	1,50,000	2,00,000	$20/15=1.33$	(4)	50,000
C	3,50,000	4,50,000	$45/35=1.29$	(5)	1,00,000
D	4,50,000	6,10,000	$61/45=1.36$	(2)	1,60,000
E	2,00,000	1,20,000	$12/20=0.6$	(6)	-80,000
F	4,00,000	5,40,000	$54/40=1.35$	(3)	1,40,000

**TABLE-3: Showing which projects should undertaken if the projects are divisible**

Proposal	Investment(₹)	Cum.Inv.(₹)	NPV(₹)	Cum.NPV.(₹)
A	3,00,000	3,00,000	1,20,000	1,20,000
D	4,50,000	7,50,000	1,60,000	2,80,000
F	4,00,000	11,50,000	1,40,000	4,20,000
B	1,50,000	13,00,000	50,000	4,70,000
C*	3,50,000	16,50,000	1,00,000	5,27,143*
E	2,00,000	18,50,000	1,40,000	

\*Only ₹ 2,00,000 can be invested in project C.

So proportionate NPV is  $1,00,000 * 2,00,000 / 3,50,000 = ₹ 57,143$

So, the selected projects are A,D,F,B and part of project C.

#### **SITUATION-2**

**TABLE-4: Showing which projects should undertaken if the projects are indivisible**

Feasible Sets	Investment (₹)	NPV (₹)
ADFB	13,00,000	4,70,000
ADFC	15,00,000	5,20,000
ABCD	12,50,000	4,30,000
ABCF	12,00,000	4,10,000
BCDF	13,50,000	4,50,000

ADFC provides the maximum NPV, So it may be undertaken.

#### **REFERENCES**

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