NEW TECHNIQUES IN CAPITAL BUDGETING

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ÖZET:Günümüzde yatırım kararları alınırken, tek bir sermaye bütçelemesi yöntemine dayanarak karar verme yerine artık tüm teknikler birlikte kullanılmakta, ancak farklı durum seçeneklerine göre bir teknik diğerine oranla daha fazla ağırlık kazanabilmektedir.

1-ENTRY

In analyzing capital budgeting process we can present five potential capital budgeting decision methods, each has its own set of advantages and disadvantages. Four methods have already known such as:

-Payback and Discounted Payback,

-Net present value (NPV),

-Internal Rate of Return (IRR),

-Profitability Index (PI),

The fifth method which is comparatively new is called modified Internal Rate of Return (MIRR).

The purpose of this article is to give deeper information about modified internal rate of return and compare all methods against one another.

Today, capital budgeting decisions are analyzed by computers and in making accept or reject decisions firms consider all methods together because each provides different piece of relevant information.

II-MODIFIED INTERNAL RATE OF RETURN

The MIRR is defines as the discount rate which forces present value costs equal to present value is the future value of the inflows compounded at the projects cost of capital[1].

$$\text{PV costs} = \frac{TV}{(1+MIRR)^n} \quad \text{or} \quad (2.1)$$

$$\sum_{t=0}^{n} \frac{COF_t}{(1+k)^t} = \frac{\sum_{t=0}^{n} CIF_t(1+k)^{n-t}}{(1+MIRR)^n} \quad (2.2)$$

COF=Costs of the project

CIF=Cash inflows

k=Cost of capital

n=life of the project

The left side of the equation shows the present value of the investment outlays discounted at the cost of capital. The numerator of the right term is the future value of the inflows are reinvested at the cost of capital[2].

If the investment costs are all incurred at t=0, and if first inflow occurs at t=1. then. it can be illustrated an example of finding MIRR of a project in Figure-1
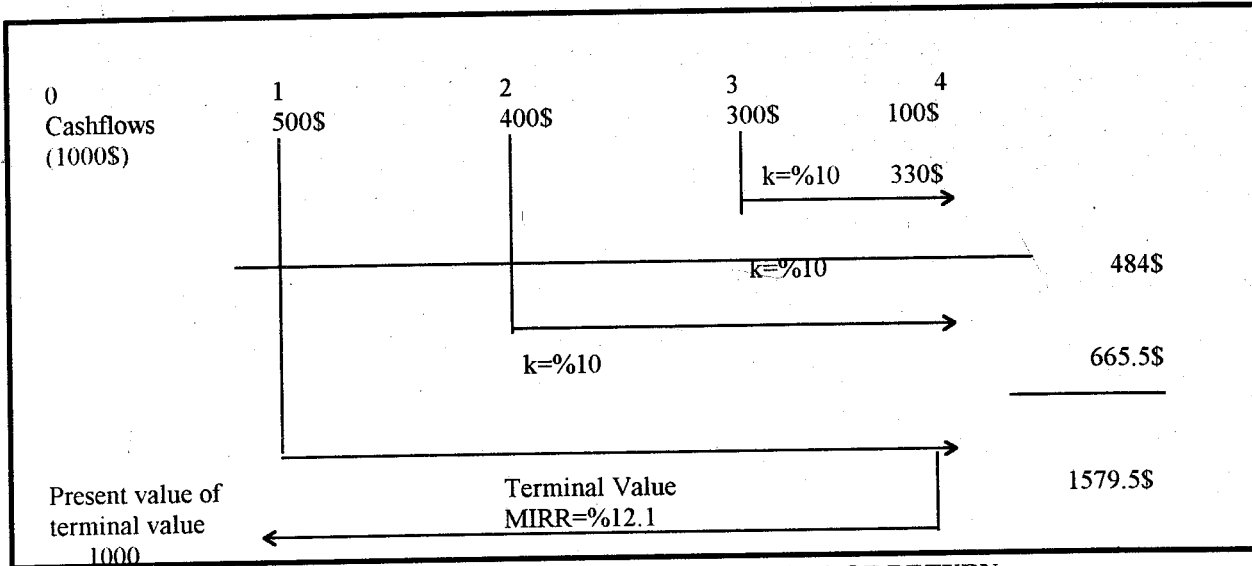
Figure.1: MODIFIED INTERNAL RATE OF RETURN

n = 4 years

COF = 1000 $

CIF = 500 $ (1st year)

       400 $ (2nd year)

       300 $ (3rd year)

       100 $ (4th year)

k=%10

II.1. ADVANTAGES OF MODIFIED RATE OF RETURN

MIRR has a very important advantage over the internal rate of return (IRR). IRR assumes that cash flows from each project are reinvested at the project's own IRR. However. MIRR assumes that cash flows from all projects are reinvested at the cost of capital as in the case of net present value (NPV) method. Reinvestment at the cost of capital is more correct, so MIRR is a better indicator of a project's true profitability[3].

Second advantage of MIRR method is that, it avoids, the problem of multiple internal rate of return. This can arise when a project is nonnormal.

A Project is nonnormal when it has negative cash flows after the project starts into operation[4]. In such situations NPV method can be easily applied, however, in IRR method it is possible to obtain more than one value for IRR. That means multiple IRR's occur. MIRR can overcome the multiple IRR problem because there is one MIRR for any set of cash flows. However if projects differ in size, then conflicts can still occur between NPV and MIRR methods. If this is the case NPV method is still better for choosing among differing sized projects, because it provides a better indicator of how much each project increases the value of the firm[5].

III.COMPARISON OF CAPITAL BUDGETING METHODS

Payback and Discounted Payback provide an indication of risk and liquidity of a project. A long Payback means that the investment is tied up for many years and the project is illiquid, and also risky.

NPV method gives a direct measure of the money benefit on a present value basis of the project. It is a best measure of profitability. However in NPV Method, there is still problems can arise The NPV contains no information about the amount of capital at risk. For example consider a project A which costs 10.000 and it gets 16.500 at the and of first year. There is another project, B, costs 100.000 and it gets 115.500 $ at the and of first year. At a 10 % cost of capital both projects have

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a NPV of 5000. So the decision makers could be indifferent between the two.

IRR measures profitability as a percentage rate of return. Besides, IRR contains information concerning a projects safety margin.

The profitability index measures the profitability per dollar of investment

Finally MIRR, corrects reinvestment rate assumption and avoids Multiple IRR problem.

IV.CONCLUSION

Different capital budgeting techniques provide different information to decision makers in making capital investment decisions. Today by the aid of computers, it is easy to generate the values for all the methods, all techniques should be considered before final decision. But weight of one method could be more than another according to the decision situation.

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