**Capital Budgeting Techniques**

**Name of Student**

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**Capital Budgeting**

The companies use the techniques in the capital budgeting to analyze the various capital projects available to be undertaken. The companies have to depend upon the capital budgeting because the success or failure of the capital projects can decide the success or failure for the companies. Many other long-term decisions regarding investments require the company to analyze the capital budgeting techniques. There are certain methods that are used in the capital budgeting as well as the investment and portfolio management. Some changes that have been put in place for the investment and portfolio management will also be applied to the capital budgeting process.

Capital budgeting saves the time and other resources for the company by filtering out those projects that are not within the resource limits of the company.

Out of the given two scenarios, I will select the second scenario and will analyze the project in the light of the techniques used for capital budgeting. First of all we will assume the following figures:

The initial outflow for the project is $ 100,000 which is negative as it is the outflow. The amounts returned for the first four years will be $ 20,000, 35,000, 45,000 and 55,000 respectively. The required rate of return for the company is assumed to be 15%.

|  |  |
| --- | --- |
| Years | Cash Flows |
| 0 | (100000) |
| 1 | 20000 |
| 2 | 35000 |
| 3 | 45000 |
| 4 | 55000 |

**Pay Back Period**

The payback period is the simplest method of the analysis undertaken for the projects. The cash inflows are added in this method and the results are matched to the cash outflows. The payback period is the time at which the simple sum of the inflows is equal to the outflows.

If we take the above example, we can see that the inflows of the first three years add up to the exact amount of the initial outflow. This means that the payback period for this project is 3 years. This method has certain drawbacks in it. This method does not take into consideration the time value of money aspects while doing the calculations. The problems also arise when the sum of the inflows does not exactly equal the outflows. In that case the partial time period will have to be calculated to arrive at the payback period.

**Net Present Value**

The net present value of any project is the difference between the present value of the inflows and present value of the outflows. Since the outflows are spent at the beginning of the project, all the inflows are discounted back to that time.

|  |  |  |  |
| --- | --- | --- | --- |
| **Years** | **CF** | **PV Factor** | **CF/PV Factor** |
| 1 | 20000 | 1.15 | 17391.30435 |
| 2 | 35000 | 1.3225 | 26465.02836 |
| 3 | 45000 | 1.520875 | 29588.23046 |
| 4 | 55000 | 1.74900625 | 31446.42851 |
|  |  |  | **104890.9917** |

In the above table we have calculated the net present value for the given project. The assumed rate of return is 15 %. The PV factor is calculated by the formula, (1+i)^n where n is the number of years. The pv factor is then divided by the cash flow to get the respective present value for the years. We see that the sum of the present values for the inflows has come up to 104890 which is more than the initial cash outflow of $100000. This means that the company will have a positive net present value from this project. Generally, the projects which have negative net present values are rejected.

**Internal Rate of Return**

The internal rate of return is the rate at which the present values of the inflows are equal to the present value of the outflows. In other words, at this rate, the net present value of the project is equal to 0. There is no certain way to calculate the internal rate of return but the excel software has a built-in function to calculate it. By putting the values of the inflows and outflow to the excel, we have found the internal rate of return to be 17%. The decision criteria for this method is that the internal rate of return should be greater than the required rate of return in order for the company to accept a project.

**Profitability Index**

This is simply a ratio between the present value of inflows and the initial cash outflow made by the company. The general rule for this method is that the profitability index greater than 1 is better for the company. In the project under consideration, we can calculate this figure as:

104890/100000

=1.0489

This value is more than 1 which shows that the project is feasible.

There are certain other considerations that the company has to take into account while deciding about the projects.

**Independent projects**

Independent projects are those which are not related to each other in any way. These projects can be taken up all at a time if they all are fulfilling the criteria for acceptance. Example may be taken if the net present value of all the projects is calculated to be positive, the company can take up all the projects at the same time. In the situation under consideration, there is only one project to be assessed, so the company will make the analysis against the benchmarks.

**Mutually Exclusive projects**

These projects are such that the company resources allow only one project to be taken at a time. Thus, the company will have to pick up the better option out of the ones available. In this case the project with the highest net present value will be chosen.

# References

Berkovitch, E. (2004). Why the NPV criterion does not maximize NPV? *The Review of Financial Studies, 17*(1), 239-255.