

III SEMESTER (Approved by Alagappa University)

36 C Strategic Financial Management

Course Content:

Module I: Capital Assets Pricing Model: Application and Limitations – Weighted Average Cost of Capital: Calculation, Application and Limitations – Capital Budgeting – Capital Structure Policy – Dividend Policy

Module II: Advanced Corporate Valuation Methods – Valuation of Mergers, Acquisitions, LBO, Defense Tactics in Hostile Takeovers – Structuring M & A, LBO Deals

Module III: Financing Strategy – International Financing – Devising Financial Risk Management Policy – Devising Working Capital Policy

Module IV: Leasing – Importance, Types, Tax Considerations, and Accounting Considerations – Evaluation of Lease from the point of view of Lessor and Lessee – Lease versus Buy Decision – Hire-Purchase – Importance, Tax Considerations, and Accounting Considerations – Evaluation of Hire-Purchase from the point of view of Hire-Purchase and Hire-Vendor

Module V: Financial Analysis and Business Planning: Preparation of long-term business plans – Appraise capital investment options – Assessment of an organisation's current financial position – Comparison of the financial health of an organisation with that of competitors

ТЕХТВООК

Financial Management and Policy 12e, James C. Van Horne and Sanjay Dhamija, Pearson (2017).

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1. Damodaran on Valuation 2e, Aswath Damodaran, Wiley (2006).

2. Corporate Financial Strategy 4e, Ruth Bender, Routledge (2013).

UNIT 1

CAPM : The Capital Asset Pricing Model

What is CAPM?

The Capital Asset Pricing Model (CAPM) is a model that describes the relationship between the expected return and risk of investing in a security. It shows that the expected return on a security is equal to the risk-free return plus a risk premium, which is based on the beta of that security. Below is an illustration of the CAPM concept.



Capital Asset Pricing Model

CAPM Formula and Calculation



Note: "Risk Premium" = (Rm – Rrf)

The CAPM formula is used for calculating the expected returns of an asset. It is based on the idea of systematic risk (otherwise known as or non-diversifiable risk) and that investors need to be compensated for it in the form of a <u>risk premium</u>. A risk premium is a rate of return greater than the risk-free rate. When investing, investors desire a higher risk premium when taking on more risky investments.

CAPM Formula

Expected Return =Risk-Free Rate + (Beta x Market Risk Premium) i.e. 12.5% = 2.5% + (1.25 x 8.0%)

Expected Return

The "Ra" notation above represents the expected return of a capital asset over time, given all of the other variables in the equation. "Expected return" is a long-term assumption about how an investment will play out over its entire life.

Risk-Free Rate

The "Rrf" notation is for the risk-free rate, which is typically equal to the yield on a 10-year US government bond. The risk-free rate should correspond to the country where the investment is being made, and the maturity of the bond should match the time horizon of the investment. Professional convention, however, is to typically use the 10-year rate no matter what, because it's the most heavily quoted and most liquid bond.

Beta

The beta (denoted as "Ba" in the CAPM formula) is a measure of a stock's risk (volatility of returns) reflected by measuring the fluctuation of its price changes relative to the overall market. In other words, it is the stock's sensitivity to market risk. For instance, if a company's beta is equal to 1.5 the security has 150% of the volatility of the market average. However, if the beta is equal to 1, the expected return on a security is equal to the average market return. A beta of -1 means security has a perfect negative correlation with the market.

Market Risk Premium

From the above components of CAPM, we can simplify the formula to reduce "expected return of the market minus the risk-free rate" to be simply the "market risk premium". <u>The market risk premium</u> represents the additional return over and above the risk-free rate, which is required to compensate investors for investing in a riskier <u>asset class</u>. Put another way, the more volatile a market or an asset class is, the higher the market risk premium will be.

Advantages of Capital Asset Pricing Model

- Capital asset pricing model is a widely used, return model that is simple and easy to calculate. Moreover, it equates the relationship between the rate of return and risk in Theoretical form, so it can be useful in empirical researches and testing.
- It is vital in calculating the Weighted Average Cost of Capital (WACC), as it calculates cost of equity, a major component of WACC.
- It is comparatively much better method of calculating cost of equity as it takes into account a company's level of systematic risk relative to the stock market as a whole. This is generally left out by other return models, like the dividend discount model (DDM).
- When exploring business opportunities, if the business mix and financing differ from the current business, then other return models, especially WACC, cannot be used but CAPM can easily be used. Thus, CAPM is superior to other return models in providing discount rate to be used in investment appraisal.

Theoretical limitations

- It prices only systematic risk or beta risk which makes it restrictive and inflexible.
- It does not consider multi-period implications. Hence, it cannot capture factors that vary over time and span several periods.

Practical limitations

- CAPM defines a true market portfolio as including assets, financial and nonfinancial. Since many assets are not investable, CAPM-defined market portfolio cannot be created. This is why CAPM cannot be tested.
- Due to a lack of true market portfolio, different practitioners use different proxies for the market portfolio which causes them to generate different return estimates for the same asset, which is a violation of one of the assumptions of CAPM.
- A long history of returns is needed to estimate beta but this might not be an accurate representation of the current or future systematic risk of the stock. Beta estimates also vary due to differences in return frequency (for example, weekly versus monthly). Hence, different beta estimates may result in different return estimates.
- Empirical studies suggest that the CAPM is a poor predictor of returns.
- The assumption that there is homogeneity in investor expectations does not hold in reality.

Weighted Average Cost of Capital

The *weighted average cost of capital* (WACC) is the minimum return a company must earn on its projects. It is calculated by weighing the cost of equity and the after-tax cost of debt by their relative weights in the capital structure.

WACC is an important input in capital budgeting and business valuation. It is the discount rate used to find out the present value of cash flows in the <u>net present value</u> technique. It is the basic <u>hurdle rate</u> to which the internal rate of returns of different projects are compared to decide whether the projects are feasible. It is also used in the free cash flow valuation model to discount the free cash flow to firm (FCFF) to find a company's intrinsic value.

Formula

For a company which has two sources of finance, namely equity and debt, WACC is calculated using the following formula:

$$\begin{array}{ccc} E & & D \\ WACC = k_e \times \underline{\qquad} & + k_d \times (1-t) \times \underline{\qquad} \\ & E+D & & E+D \end{array}$$

Where,

 k_e is the cost of equity, E is the market value of equity, k_d is the pre-tax cost of debt, t is the tax rate, D is the market value of debt, and E/(E + D) and D/(E + D) are the respective weights of equity and debt in the company's capital structure.

Cost of Equity

Cost of equity is the required rate of return on <u>common stock</u> of the company. It is the minimum rate of return which a company must earn to keep its common stock price from falling.

Cost of equity is estimated using different models, such as dividend discount model (DDM) and capital asset pricing model (CAPM).

After-Tax Cost of Debt

After-tax cost of debt represents the after-tax rate of return which the debt-holders need to earn till the maturity of the debt. <u>Cost of debt</u> of a company is calculated by finding the <u>yield to</u> <u>maturity</u> of the company's bonds and other loans. If no yield to maturity is available, the cost can be estimated using the instrument's current yield, etc.

After-tax cost of debt is included in the calculation of WACC because debt offers a tax shield i.e. interest expense on debt reduces taxes. This reduction in taxes is reflected in reduction in cost of debt capital.

Equity and Debt Weights

E/A is the weight of equity in the company's total capital. It is calculated by dividing the market value of the company's equity by sum of the market values of equity and debt.

D/A is the weight of debt component in the company's capital structure. It is calculated by dividing the market value of the company's debt by sum of the market values of equity and debt.

Ideally, WACC should be estimated using **target capital structure**, which is the capital structure the company's management intends to maintain in the long-run.

Example

Sanstreet, Inc. went public by issuing 1 million shares of common stock @ \$25 per share. The shares are currently trading at \$30 per share. Current risk free rate is 4%, market risk premium is 8% and the company has a beta coefficient of 1.2.

During last year, it issued 50,000 bonds of \$1,000 par paying 10% coupon annually maturing in 20 years. The bonds are currently trading at \$950. Yield to maturity is 10.61%

If the tax rate is 30%, calculate the weighted average cost of capital.

Solution

First we need to calculate the proportion of equity and debt in Sanstreet, Inc. capital structure.

Calculating Capital Structure Weights Current Market Value of Equity = 1,000,000 × \$30 = \$30,000,000

Current Market Value of Debt = 50,000 × \$950 = \$47,500,000

Total Market Value of Debt and Equity = \$77,500,000

Weight of Equity = \$30,000,000 ÷ \$77,500,000 = 38.71%

Weight of Debt = \$47,500,000 ÷ \$77,500,000 = 61.29%, or

Weight of Debt = 100% minus cost of equity = 100% - 38.71% = 61.29%

Now, we need estimates for cost of equity and after-tax cost of debt.

Estimating Cost of Equity

We can estimate cost of equity using either the <u>dividend discount model (DDM)</u> or <u>capital</u> <u>asset pricing model (CAPM)</u>.

Cost of equity (DDM) = Expected Dividend in 1 year ÷ Current Stock Price + Growth Rate

Cost of equity (CAPM) = Risk Free Rate + Beta Coefficient × Market Risk Premium

In the current example, the data available allow us to use only <u>CAPM</u> to calculate cost of equity.

Cost of Equity = Risk Free Rate + Beta × Market Risk Premium = $4\% + 1.2 \times 8\%$ = 13.6%

Estimating Cost of Debt

Cost of debt is equal to the yield to maturity of the bonds. The yield to maturity is 10.61%. It is calculated using hit and trial method.

For inclusion in WACC, we need <u>after-tax cost of debt</u>, which is 7.427% [= $10.61\% \times (1 - 30\%)$].

Calculating WACC

Having all the necessary inputs, we can plug the values in the WACC formula to get an estimate of 9.82%.

WACC = 38.71% × 13.6% + 61.29% × 7.427% = 9.8166%

It is called weighted average cost of capital because as you see the cost of different components is weighted according to their proportion in the <u>capital structure</u> and then summed up.

WACC represents the average risk faced by the organization. It would require an upward adjustment if it has to be used to calculate NPV of projects which are riskier than the company's average projects and a downward adjustment in case of less risky projects. Further, WACC is after all an estimation. Further, different models for calculation of cost of equity may yield different values.

Uses of WACC:

The following points will explain why WACC is important and how it is used by investors and the company for their respective purposes:

INVESTMENT DECISIONS BY THE COMPANY

WACC is widely used for making investment decisions in corporations by evaluating their projects. Let's categorize the investments in projects in the following 2 ways:

EVALUATION OF PROJECTS WITH THE SAME RISK

When the new projects have a similar risk level to existing projects of the company, it's an appropriate benchmark rate to decide the acceptance or rejection of these projects. For example, a furniture manufacturer wishes to expand its business in new locations, i.e., establishing a new factory for the same kind of furniture in a different location. To generalize this to some extent, a company entering new projects in its own industry can reasonably assume a similar risk and use WACC as a <u>hurdle rate</u> to decide whether it should enter into the project or not.

EVALUATION OF PROJECTS WITH DIFFERENT RISK

WACC is an appropriate measure to evaluate a project, provided two underlying assumptions are true. These assumptions are 'same risk' and 'same <u>capital structure</u>'. What should one do

in this situation? WACC can be used with certain modifications, with respect to the risk and target capital structure. Risk-adjusted WACC and adjusted present value etc. are the concepts to circumvent the problems of WACC assumptions.

DISCOUNT RATE IN NET PRESENT VALUE CALCULATIONS

<u>Net present value</u> (NPV) is the widely used method of evaluating projects to determine the profitability of the investment. WACC is used as discount rate or the hurdle rate for NPV calculations. All the free cash flows and terminal values are discounted using the WACC.

CALCULATE ECONOMIC VALUE ADDED (EVA)

EVA is calculated by deducting the cost of capital from the profits of the company. When calculating the EVA, WACC serves as the cost of capital of the company. This is how WACC may also be called a measure of value creation.

VALUATION OF COMPANY

Any rational investor will invest time before investing money in any company. The investor will first try to determine the valuation of the company. Based on the fundamentals, the investor will project the future cash flows and discount them using the WAC; with that, the value of the firm can be calculated. From the Value of Firm, value of debt will be deducted to find the value of equity. Value of equity will be divided by the number of <u>equity shares</u>, leading to the pershare value of the company. One can simply compare this value and the current market price (CMP) of the company to decide whether it is worth the investment or not. If the valuations are more than the CMP, the scrip is under-priced; if it is less than CMP, it is overpriced. If the value is \$25 and the CMP is \$22, the investor will invest at \$22, expecting the prices to rise to \$25, or else investment will not be made.

EFFECT OF LEVERAGE

Considering the <u>Net Income</u> Approach (NOI) by Durand, the effect of leverage is reflected in WACC. Thus, the WACC can be optimized by adjusting the debt component of the capital structure. The lower the WACC, the higher the valuations of the company. A lower WACC also widens the scope of the company by allowing it to accept low return projects and still create value.

OPTIMAL CAPITAL BUDGETS

The increase in the magnitude of capital also tends to increase the WACC. With the help of a WACC schedule and project schedule, an optimal capital budget can be worked out for the company.

DISADVANTAGES OF WEIGHTED AVERAGE COST OF CAPITAL (WACC)

The disadvantages are stemmed mainly from the assumptions of the applicability of WACC. The practicability and limitations of the assumptions are discussed below. The remedy to overcome the problem is also specified.

DIFFICULTY IN MAINTAINING THE CAPITAL STRUCTURE

The impractical assumptions of 'No Change in Capital Structure' has rare possibilities of prevailing all the time. It suggests the same capital structure for new projects. There are two possibilities for funding the project in this way.

• First is to fund it with the retained earnings. In this case, it would be reasonably correct to assume that the new project is funded with same capital structure. The limitation here is of

availability of free cash with the company. Even if the free cash is available, it will put a cap on the size of the investment. Suppose, the new project requires, \$100 million, the company has only \$70 million. What to do for the remaining \$30 million?

• Second possibility is raising fund in the same capital mix. It is not impossible to do that but at the same time getting funds at our own terms is not easily possible in the market. On the top of everything, the primary focus of management of a company would not be to maintain capital structure ratio but to reduce the cost of capital as low as possible to achieve the <u>shareholders</u> profit and <u>wealth maximization</u>.

The remedy to this problem is that the target capital structure should be taken into consideration and not the existing. and therefore, the calculation of WACC should be adjusted accordingly.

ACCEPTING BAD PROJECTS AND REJECTING GOOD PROJECTS

The impractical assumptions of 'No Change in Risk Profile of New Projects again has its inbuilt drawbacks. The risk is a very wide term and is affected by a big list of factors. Under that situation, assuming no change in the risk profile of new projects would be very unrealistic. Let us assume two situations:

- *Company Expanding in its Own Industry:* The assumption can be reasonably true if the company is expanding in its very own industry and the same business like the textile example given above. Still it is not completely true because the risk associated with installing looms in past and today may be different. The technology may be different and complicated. The quality and cost aspects may be dissimilar.
- *Company Expanding in Different Industry:* The assumption in this case would surely prove malicious. It is because FMCG and Heavy Machineries cannot have same risk profile. Having different risk profile, the cost of equity would also be different and therefore applying the same WACC pose a very high risk of rejecting good projects that will create value and accepting projects that will diminish the value of the shareholders wealth.

The remedy to this problem is that the WACC should be adjusted to take effect of the change in risk.

DIFFICULTY IN ACQUIRING CURRENT MARKET COST OF CAPITAL

The WACC used for evaluation of new projects require consideration of present day cost of capital and knowing such costs is difficult. The WACC considers mainly equity, debt and preferred. The interest <u>cost of debt</u> keeps changing in the market depending on the economic changes. The expected dividend of the preferred also keeps changing with the market sentiments and the most fluctuating is the expected cost of equity.

IMPORTANT SOURCES OF CAPITAL AVOIDED

While making WACC calculations, only equity, debt and preference shares are considered for the sake of simplicity assuming that they cover a major portion of the capital. In support of absolutely correct approach towards discounting rate, if we include convertible or callable preference shares, debt, or stock market-linked bonds, or extendable bonds, warrants, etc also which are also a claimant to the profits of the company like equity, debt and preference shares, it will make the calculations very complex. Too much complexity is a probable reason for mistakes. On the similar grounds, the short-term borrowings and the cost of trade credit are also not taken into consideration. Factors like such if introduced, will definitely change the WACC. We will not go into the magnitude of the difference these things will have on the calculations of the WACC but the impact is there.



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Capital budgeting:

Payback method :

What is the meaning of payback period?

Payback period is the time required to recover the initial cost of an investment. It is the number of years it would take to get back the initial investment made for a project. Therefore, as a technique of capital budgeting, the payback period will be used to compare projects and derive the number of years it takes to get back the initial investment. The project with the least number of years usually is selected.

Salient features of Payback period method

- Payback period is a simple calculation of time for the initial investment to return.
- It ignores the <u>time value of money</u>. All other techniques of capital budgeting consider the concept of time value of money. Time value of money means that a rupee today is more valuable than a rupee tomorrow. So other techniques discount the future inflows and arrive at discounted flows.
- It is used in combination with other techniques of capital budgeting. Owing to its simplicity the payback period cannot be the only technique used for deciding the project to be selected.

Illustrations

Let us understand the payback period method with a few illustrations.

Apple Limited has two project options. The initial investment in both the projects is Rs. 10,00,000.

Project A has even inflow of Rs. 1,00,000 every year.

Project B has uneven cash flows as follows:

Year 1 – Rs. 2,00,000 Year 2 – Rs. 3,00,000 Year 3 – Rs. 4,00,000 Year 4 – Rs. 1,00,000 Now let us apply the payback period method to both the projects. The formula for computing payback period with even cashflows is: Pay back period = **Total outflows Initial investment** or Net annual cash inflows Inflow every year **Project** A If we use the formula, **Initial investment / Net annual cash inflows** then: 10,00,000/1,00,000 = 10 years **Project B** Total inflows = 10,00,000 (2,00,000+3,00,000+4,00,000+1,00,000)Total outflows = 10,00,000Project B takes four years to get back the initial investment. Now, let us modify the cash flows of project B and see how to get the payback period: Say, cash inflows are – **SINCE 2011** Year 1 – Rs. 2,00,000 ACADEMY OF MANAGEMENT Year 2 – Rs. 3,00,000 Year 3 – Rs. 7,00,000 Year 4 – Rs. 1,50,000

The payback period can be calculated as follows:

Year	Total flow (in Lakhs)	Cumulative flow
1	2	2
2	3	5
3	7	12
4	1.5	13.5

Now to find out the payback period:

Step 1: We must pick the year in which the outflows have become positive. In other words, the year with the last negative outflow has to be selected. So, in this case, it will be year two.

Step 2: Divide the total cumulative flow in the year in which the cash flows became positive by the total flow of the consecutive year.

So that is: 5/7 = 0.71

Step 3: Step 1 + Step 2 = the payback period is 2.71 years.

Therefore, between Project A and B, solely on the payback method, Project B (in both the examples) will be selected.

The example stated above is a very simple presentation. In an actual scenario, an investment might not generate returns for the first few years. Gradually over time, it might generate returns. That too will play a major role in determining the payback period.

Note: In case an organization is replacing an existing machinery, the inflows will be considered on an incremental basis.

Calculation of PV:

Introduction to the Present Value of a Single Amount (PV)

If you received \$100 today and deposited it into a savings account, it would grow over time to be worth *more* than \$100. This fact of financial life is a result of the **time value of money**, a concept which says it's more valuable to receive \$100 *now* rather than a year from now. To put it another way, the *present value* of receiving \$100 one year from now is less than \$100.

Accountants use Present Value (PV) calculations to account for the time value of money in a number of different applications. For example, assume your company provides a service in December 2018 and agrees to be paid \$100 in December 2019. The time value of money tells us that the part of the \$100 is interest you will earn for waiting one year for the \$100. Perhaps only \$91 of the \$100 is service revenue earned in 2018 and \$9 is interest that will be earned in 2019. The calculation of present value will remove the interest, so that the amount of the service revenue can be determined. Another example might involve the purchase of land: the owners will either sell it to you for \$160,000 *today*, or for \$200,000 if you pay at the end of two years. To help analyze the alternatives, you would use a PV calculation to tell you the interest rate *implicit* in the second option.

PV calculations can also tell you such things as how much money to invest right now in return for specific cash amounts to be received in the future, or how to estimate the rate of return on your investments. Our focus will be on *single* amounts that are received or paid in the future. We'll discuss PV calculations that solve for the present value, the implicit interest rate, and/or the length of time between the present and future amounts.

Calculations for the Present Value of a Single Amount

At the outset, it's important for you to understand that PV calculations involve *cash* amounts—not *accrual* amounts.

In present value calculations, future cash amounts are *discounted* back to the present time. (Discounting means removing the interest that is imbedded in the future cash amounts.) As a result, present value calculations are often referred to as a **discounted cash flow technique**. PV calculations involve the <u>compounding of interest</u>. This means that any interest earned is reinvested and *itself* will earn interest at the same rate as the <u>principal</u>. In other words, you "*earn* interest." The compounding of interest can be very significant when the interest rate and/or the number of years is sizeable.

We will use present value (PV) to mean a single future amount such as one receipt or one payment. Here are the components of a present value (PV) calculation:

- 1. Present value amount (PV)
- 2. Future value amount (FV)
- 3. Length of time before the future value amount occurs (n)
- 4. Interest rate used for discounting the future value amount (i)

If you know any **three** of these four components, you will be able to calculate the unknown component. Accountants are often called upon to calculate this unknown component.

Calculation Using the PV Formula

The present value formula for a single amount is:

 $PV = FV (1 + i)^{-n}$ (or) $PV = FV \times [1 \div (1 + i)^{n}]$

Using the second version of the formula, the solution is:

PV = FV x [1 ÷ (1 + i)ⁿ] PV = \$100 x [1 ÷ (1 + 0.08)²] PV = \$100 x [1 ÷ (1.08)²] PV = \$100 x [1 ÷ 1.1664] PV = \$100 x [0.8573388] ← PV factor PV = <u>\$85.73</u>



The answer, **\$85.73**, tells us that receiving \$100 in two years is the same as receiving \$85.73 today, if the time value of money is 8% per year compounded annually. ("Today" is the same concept as "time period 0.")

Present	Value	of	1	Table	(PV	of	1	Table)
Present	Value	Factors	for	1.000	at	Comp	ound	Interest
Rounded		to	tl	nree	de	cimal		places.

Example:

When interest is 8% per period and it is compounded each period, receiving 1.000 at the end of the 10th period has a present value of 0.463.

n	1%	2%	3%	4%	5%	6%	8%	10%	12%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.926	0.909	0.893
2	0.980	0.961	0.943	0.925	0.907	0.890	0.857	0.826	0.797
3	0.971	0.942	0.915	0.889	0.864	0.840	0.794	0.751	0.712
4	0.961	0.924	0.888	0.855	0.823	0.792	0.735	0.683	0.636
5	0.951	0.906	0.863	0.822	0.784	0.747	0.681	0.621	0.567
6	0.942	0.888	0.837	0.790	0.746	0.705	0.630	0.564	0.507

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7	0.933	0.871	0.813	0.760	0.711	0.665	0.583	0.513	0.452	
8	0.923	0.853	0.789	0.731	0.677	0.627	0.540	0.467	0.404	
9	0.914	0.837	0.766	0.703	0.645	0.592	0.500	0.424	0.361	
10	0.905	0.820	0.744	0.676	0.614	0.558	0.463	0.386	0.322	
11	0.896	0.804	0.722	0.650	0.585	0.527	0.429	0.350	0.287	
12	0.887	0.788	0.701	0.625	0.557	0.497	0.397	0.319	0.257	
13	0.879	0.773	0.681	0.601	0.530	0.469	0.368	0.290	0.229	
14	0.870	0.758	0.661	0.577	0.505	0.442	0.340	0.263	0.205	
15	0.861	0.743	0.642	0.555	0.481	0.417	0.315	0.239	0.183	
16	0.853	0.728	0.623	0.534	0.458	0.394	0.292	0.218	0.163	
17	0.844	0.714	0.605	0.513	0.436	0.371	0.270	0.198	0.146	
18	0.836	0.700	0.587	0.494	0.416	0.350	0.250	0.180	0.130	
19	0.828	0.686	0.570	0.475	0.396	0.331	0.232	0.164	0.116	
20	0.820	0.673	0.554	0.456	0.377	0.312	0.215	0.149	0.104	
21	0.811	0.660	0.538	0.439	0.359	0.294	0.199	0.135	0.093	
22	0.803	0.647	0.522	0.422	0.342	0.278	0.184	0.123	0.083	ТМ
23	0.795	0.634	0.507	0.406	0.326	0.262	0.170	0.112	0.074	
24	0.788	0.622	0.492	0.390	0.310	0.247	0.158	0.102	0.066	
25	0.780	0.610	0.478	0.375	0.295	0.233	0.146	0.092	0.059	
26	0.772	0.598	0.464	0.361	0.281	0.220	0.135	0.084	0.053	1
27	0.764	0.586	0.450	0.347	0.268	0.207	0.125	0.076	0.047	l ENT
28	0.757	0.574	0.437	0.333	0.255	0.196	0.116	0.069	0.042	CNI
29	0.749	0.563	0.424	0.321	0.243	0.185	0.107	0.063	0.037	
30	0.742	0.552	0.412	0.308	0.231	0.174	0.099	0.057	0.033	

IRR

The Internal Rate of Return is a good way of judging an investment. The bigger the better!

The Internal	Rate	of	Return is	the	interest	rate
that makes the	Net Present Value	zero	It is an Interest Ra	ate.		

We find it by first guessing what it might be (say 10%), then work out the Net Present Value.

The **Net Present Value** is how much the investment is worth in today's money (we find how to calculate it later)

Then keep guessing (maybe 8%? 9%?) and calculating, until we get a **Net Present Value of zero**.



Example: Sam is going to start a small bakery!

Sam estimates all the costs and earnings for the next 2 years, and calculates the Net Present Value:

At 6% Sam gets a Net Present Value of \$2000

But the Net Present Value should be zero, so Sam tries 8% interest:

At 8% Sam gets a Net Present Value of -\$1600

Now it's negative! So Sam tries once more, but with 7% interest:

At 7% Sam gets a Net Present Value of \$15

Close enough to zero, Sam doesn't want to calculate any more.

The Internal Rate of Return (IRR) is about 7%

So the Internal Rate of Return is the interest rate that makes the Net Present Value zero.

And that "guess and check" method is the common way to find it (though in that simple case it could have been worked out directly).

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Formula :

$\mathbf{PV} = \mathbf{CF} / (1+\mathbf{i})^{\mathbf{n}}$

IRR:

	Internal Rate of Return											
1	Cash Flows Year 1		Cash Flows Year 2		Cash Flows Year 3		Cash Flows Year 4	١		Initial	_	0
l	(1+IRR)1	*	(1+IRR) ²	*	(1+IRR) ³	+	(1+IRR)4)	-	Investment	-	0

Let's try a example: Example: Invest \$2,000 now, receive 3 yearly payments of \$100 each, plus \$2,500 in the 3rd year. Find out IRR?

Year	CF	IRR @ 10%	PV
1	100	1.1	90.90909
2	100	1.21	82.64463
3	100	1.331	75.13148
3	2500	1.331	1878.287
		Total	
		Returns	2126.972
		Investment	2000

	126.9722

Year	CF	IRR @ 12%	PV
1	100	1.12	89.28571
2	100	1.2544	79.71939
3	100	1.404928	71.17802
3	2500	1.404928	1779.451
		Total	
		Returns	2019.634
		Investment	2000
			19.63375

		IRR @	
Year	CF	12.4.%	PV
1	100	1.124	88.96797
2	100	1.263376	79.153
3	100	1.420034624	70.42082
3	2500	1.4200346	1760.52
		Total	
		Returns	1999.062
		Investment	2000
			-0.93773

IRR = 12.4%

Capital rationing /Profitability Index:

AVIDUS ACADEMV OF MANAGEMENT Capital rationing is a strategy used by companies or investors to limit the number of projects they take on at a time. If there is a pool of available investments that are all expected to be profitable, capital rationing helps the investor or business owner choose the most profitable ones to pursue.

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Companies that employ a capital rationing strategy typically produce a relatively higher <u>return</u> <u>on investment (ROI)</u>. This is simply because the company invests its resources where it identifies the highest profit potential

Capital Rationing Example

Capital rationing is about putting restrictions on investments and projects taken on by a business. To illustrate this better, let's consider the following example:

VV Construction is looking at five possible projects to invest in, as shown below:

Project	Investment Capital	Net Present Value (NPV)
1	\$2 billion	\$2 billion
2	\$4 billion	\$4 billion
3	\$5 billion	\$3 billion
4	\$4 billion	\$2 billion
5	\$6 billion	\$5 billion

To determine which project offers the greatest potential profitability, we compute each project using the following formula:

Profitability = NPV / Investment Capital

Project	Profitability	
1	\$2 billion / \$2 billion	1
2	\$4 billion / \$4 billion	1
3	\$3 billion / \$5 billion	0.6
4	\$2 billion / \$4 billion	0.5
5	\$5 billion / \$6 billion	.83

Based on the table above, we can conclude that projects 1 and 2 offer the greatest potential profit. Therefore, VV Construction will likely invest in those two projects.

Capital structure policy :

Policies of Capital Structure with Diagram Policies of Capital Structure

All companies have their own policies of capital structure. Capital structure is a mix or combination of debt and equity. The debt-equity ratio is maintained at various levels.

The information content of **dividend** and capital structure policies are given in the diagram below.



5. Maximum Possible Debt Policy

Policies of capital structure are follows:

1. No Debt Policy

In policies of capital structure, some firms adopt zero debt policy. The entire capital is raised by Shareholder's funds. Such firms have large retained earnings, and they expand with the help of retained earnings. Some firms do not want to expand their business as they are happy with their present size. So, they use 'Stability Strategy'. If they ever need more <u>funds</u>, they do disinvestment. They sell part of their business to raise funds and do not borrow from outside.

2. Limited Debt Policy

In policies of capital structure, some firms use a limited debt policy. They borrow very least from outside. The debt-equity ratio is less than 1:1. They are similar to No debt policy. They may have retained earnings, which are used for expansion and modernization. Such firms opt, for restricted growth strategy, and thus they may require limited additional funds for expansion.

3. Debt-Equity Ratio 1:1 Policy

In policies of capital structure, firms which try to avoid the high-interest burden may adopt debt-equity ratio 1:1 policy of capital structure. For expansion such firms may use retained earnings or may issue additional shares.Firms which adopt moderate growth strategy may adopt this policy. The firms may resort to debt only to the extent of shareholder's equity.

4. Debt-Equity Ratio 2:1 Policy

In policies of capital structure, many firms adopt this policy. In this policy, the firms borrow 2 times as that of equity capital. For expansion, such firms borrow more funds by way of loans. They do not raise more funds from shareholders. Firms adopting this policy may choose internal and external growth strategies.

5. Maximum Possible Debt Policy

In policies of capital structure, the debt-equity ratio is more than 2:1. Small medium enterprises are allowed debt-equity ratio of greater than 2:1. E.g.: Under composite Loan Scheme for small industries the debt-equity ratio can be 3:1. This policy is not adopted by large firms

Dividend Policy:

A company's dividend policy dictates the amount of dividends paid out by the company to its shareholders and the frequency with which the dividends are paid out. When a company makes a profit, they need to make a decision on what to do with it. They can either retain the profits in the company (retained earnings on the <u>balance sheet</u>), or they can distribute the money to shareholders in the form of dividends.

What is a Dividend?

A dividend is the share of profits that is distributed to <u>shareholders</u> in the company and the return that shareholders receive for their investment in the company. The company's management must use the profits to satisfy its various stakeholders, but equity shareholders are given first preference as they face the highest amount of risk in the company. A few examples of dividends include:

1. Cash dividend

A dividend that is paid out in cash and will reduce the cash reserves of a company.

2. Bonus shares

Bonus shares refer to shares in the company are distributed to shareholders at no cost. It is usually done in addition to a cash dividend, not in place of it.

Examples of Dividend Policies

The dividend policy used by a company can affect the value of the enterprise. The policy chosen must align with the company's goals and maximize its value for its shareholders. While

the shareholders are the owners of the company, it is the board of directors who make the call on whether profits will be distributed or retained.

The directors need to take a lot of factors into consideration when making this decision, such as the growth prospects of the company and future projects. There are various dividend policies a company can follow such as:

1. Regular dividend policy

Under the regular dividend policy, the company pays out dividends to its shareholders every year. If the company makes abnormal profits (very high profits), the excess profits will not be distributed to the shareholders but are withheld by the company as retained earnings. If the company makes a loss, the shareholders will still be paid a dividend under the policy.

The regular dividend policy is used by companies with a steady cash flow and stable earnings. Companies that pay out dividends this way are considered low-risk investments because while the dividend payments are regular, they may not be very high.

2. Stable dividend policy

Under the stable dividend policy, the percentage of profits paid out as dividends is fixed. For example, if a company sets the payout rate at 6%, it is the percentage of profits that will be paid out regardless of the amount of profits earned for the financial year.

Whether a company makes \$1 million or \$100,000, a fixed dividend will be paid out. Investing in a company that follows such a policy is risky for investors as the amount of dividends fluctuates with the level of profits. Shareholders face a lot of uncertainty as they are not sure of the exact dividend they will receive.

3. Irregular dividend policy

Under the irregular dividend policy, the company is under no obligation to pay its shareholders and the board of directors can decide what to do with the profits. If they a make an abnormal profit in a certain year, they can decide to distribute it to the shareholders or not pay out any dividends at all and instead keep the profits for business expansion and future projects.

The irregular dividend policy is used by companies that do not enjoy a steady cash flow or lack liquidity. Investors who invest in a company that follows the policy face very high risks as there is a possibility of not receiving any dividends during the financial year.

4. No dividend policy

Under the no dividend policy, the company doesn't distribute dividends to shareholders. It is because any profits earned is retained and reinvested into the business for future growth. Companies that don't give out dividends are constantly growing and expanding, and shareholders invest in them because the value of the company stock appreciates. For the investor, the share price appreciation is more valuable than a dividend payout.

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UNIT II

Advanced Corporate valuation methods

When valuing a company as a going concern, there are three main valuation methods used by industry practitioners: (1) DCF analysis, (2) comparable company analysis, and (3) precedent transactions. These are the most common methods of valuation used in investment banking, equity research, private equity, corporate development, mergers & acquisitions (M&A), leveraged buyouts (LBO), and most areas of finance.



As shown in the diagram above, when valuing a business or asset, there are three broad categories that each contain their own methods. The Cost Approach looks at what it costs to build something and this method is not frequently used by finance professionals to value a company as a going concern. Next is the Market Approach, this is a form of *relative valuation* and frequently used in the industry. It includes Comparable Analysis Precedent Transactions. Finally, the discounted cash flow (DCF) approach is a form of *intrinsic valuation* and is the most detailed and thorough approach to valuation modeling.

Method 1: Comparable Analysis ("Comps")

Comparable company analysis (also called "trading multiples" or "peer group analysis" or "equity comps" or "public market multiples") is a relative valuation method in which you compare the current value of a business to other similar businesses by looking at trading multiples like P/E, EV/EBITDA, or other ratios. Multiples of EBITDA are the most common valuation method. The "comps" valuation method provides an observable value for the business, based on what companies are currently worth. Comps are the most widely used approach, as they are easy to calculate and always current. The logic follows that, if company

X trades at a 10-times P/E ratio, and company Y has earnings of \$2.50 per share, company Y's stock must be worth \$25.00 per share (assuming its perfectly comparable).

Market Data			Financial Data (FY+1)			Valuation (FY+1)			
Company Name	Price (\$/share)	Market Cap (\$M)	EV (SM)	Sales (\$M)	EBITDA	Earnings (\$ <i>M</i>)	EV/Sales	EV/EBITDA	P/E x
Micro Partners	\$9.45	\$945	\$1,070	\$268	\$76	\$47	2.5x	14.1x	22.8x
Junior Enterprises	\$5.68	\$7,100	\$9,100	\$4,136	\$778	\$412	2.2x	11.7x	22.1x
Minature Company	\$18.11	\$906	\$931	\$443	\$96	\$56	1.9x	9.7x	16.7x
Average Limited	\$12.27	\$7,730	\$8,080	\$1,949	\$528	\$294	2.6x	12.2x	22.4x
Bohemeth Industires	\$9.03	\$13,545	\$13,545	\$6,622	\$795	\$423	1.7x	17.0x	28.3x
Average							2.2x	12.9x	22.5x
Median							2.2x	12.2x	22.4x

Method 2: Precedent Transactions

Precedent transactions analysis is another form of relative valuation where you compare the company in question to other businesses that have recently been sold or acquired in the same industry. These transaction values include the take-over premium included in the price for which they were acquired.

These values represent the en bloc value of a business. They are useful for M&A transactions, but can easily become stale-dated and no longer reflective of the current market as time passes. They are less commonly used than Comps or market trading multiples.

Transaction				Valuation			
Date	Target	Value (\$M)	Buyers	EV/Sales	EV/EBITDA	EV/EBIT	
01/24/2017	Current Ltd	2,350	Average Limited	1.9x	9.4x	11.2x	
04/19/2016	Recent Inc	6,500	Bohemeth Industires	1.4x	8.0x	12.6x	
04/19/2014	PastCo	2,150	Other Group	1.3x	8.7x	12.1x	
11/07/2014	Historical LLP	450	Junior Enterprises	2.3x	11.1x	13.6x	
11/01/2012	Old Group	325	Minature Company	5.1x	18.8x	21.5x	
10/07/2011	Dated Enterprises	150	Micro Partners	2.1x	9.3x	13.2x	
Average				2.3x	10.9x	14.0x	
Median				2.0x	9.4x	12.9x	

Method 3: DCF Analysis

Discounted Cash Flow (DCF) analysis is an intrinsic value approach where an analyst forecasts the business' unlevered free cash flow into the future and discounts it back to today at the firm's Weighted Average Cost of Captial (WACC).

A DCF analysis is performed by building a financial model in Excel and requires an extensive amount of detail and analysis. It is the most detailed of the three approaches, requires the most assumptions, and often produces the highest value. However, the effort required for preparing a DCF model will also often result in the most accurate valuation. A DCF model allows the analyst to forecast value based on different scenarios, and even perform a sensitivity analysis.

For larger businesses, the DCF value is commonly a sum-of-the-parts analysis, where different business units are modeled individually and added together. To learn more, see CFI's DCF model infographic.

	A B	C	E	F	G	Н	1	J	К	L	M
1	Orporate Finance Institute. All rights reserved.			Historical R	esults			For	ecast Period		
2	Online Company Inc I	Model	2014	2015	2016	2017	2018	2019	2020	2021	2022
150											
151	DCF Model										
152	Assumptions										
153	Tax Rate	25%									
154	Discount Rate	12%									
155	Perpetual Growth Rate	4%									
156	EV/EBITDA Multiple	8.0x									
157	Current Price	\$11.75									
158	Shares Outstanding	50.000									
159											
160											
161	Discounted Cash Flow	Entry	2019	2020	2021	2022	2023	Exit	Те	erminal Value	
162	Date	9/30/2017	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2023	E	//EBITDA	579,263
163	Year Fraction		1.00	1.00	1.00	1.00	1.00	1.00			
164											
165	EBIT		48,970	53,062	56,958	60,478	65,983				
166	Less: Cash Taxes		12,243	13,265	14,240	15,120	16,496				
167	NOPAT		36,728	39,796	42,719	45,359	49,487				
168	Plus: D&A		9,003	10,203	11,162	11,930	12,544				
169	EBITDA		57,974	63,264	68,121	72,408	78,526				
170	Less: Capex		15,000	15,000	15,000	15,000	15,000				
171	Less: Changes in NWC		4,003	4,749	2,564	2,706	2,128				
172	Unlevered FCF		26,728	30,250	36,317	39,583	44,902	579,263			
177											
178	DCF Value			Market Value			-	Rate of Return			
179	Enterprise Value	418,525		Market Cap		587,500		IRR		10%	
180	Plus: Cash	139,550		Plus: Debt		30,000					
181	Less: Debt	30,000		Less: Cash	-	153,654					
182	Equity Value	528,075		Enterprise Value		463,846					
183	E	40.50		E							
184	Equity value/Share	10.56		Equity Value/Sha	ire	11.75					
102											

Football Field Chart (summary)

Investment bankers will often put together a football field chart to summarize the range of values for a business based on the different valuation methods used. Below is an example of a football field graph, which is typically included in an investment banking pitch book.

As you can see, the graph summarizes the company's 52-week trading range (it's stock price, assuming it's public), the range of prices analysts have for the stock, the range of values from comparable valuation modeling, the range from precedent transaction analysis, and finally the DCF valuation method. The orange dotted line in the middle represents the average valuation from all the methods.

Valuation Football Field (Company A)



Video - Link: https://www.youtube.com/watch?v=cVWpVKvX0BQ

Valuation of Merger and acquisition:

A merger is a corporate strategy to combine with another company and operate as a single legal entity. The companies agreeing to mergers are typically equal in terms of size and scale of operations.

An *acquisition* is when one company purchases most or all of another company's shares to gain control of that company.

A leveraged buyout (LBO) is the acquisition of another company using a significant amount of borrowed money to meet the cost of acquisition. The assets of the company being acquired are often used as collateral for the loans, along with the assets of the acquiring company.

Valuation Matters:

Both companies involved on either side of an M&A deal will value the target company differently. The seller will obviously value the company at the highest price as possible, while the buyer will attempt to buy it for the lowest possible price. Fortunately, a company can be objectively valued by studying comparable companies in an industry, and by relying on the following metrics:

- 1. **Comparative Ratios:** The following are two examples of the many comparative metrics on which acquiring companies may base their offers:
- 2. <u>Price-Earnings Ratio</u> (**P/E Ratio**): With the use of this ratio, an acquiring company makes an offer that is a multiple of the earnings of the target company. Examining the

P/E for all the stocks within the same industry group will give the acquiring company good guidance for what the target's P/E multiple should be.

- 3. <u>Enterprise-Value-to-Sales Ratio</u> (**EV/Sales**): With this ratio, the acquiring company makes an offer as a multiple of the revenues, again, while being aware of the <u>price-to-sales ratio</u> of other companies in the industry.
- 4. <u>Replacement Cost</u>: In a few cases, acquisitions are based on the cost of replacing the target company. For simplicity's sake, suppose the value of a company is simply the sum of all its equipment and staffing costs. The acquiring company can literally order the target to sell at that price, or it will create a competitor for the same cost. Naturally, it takes a long time to assemble good management, acquire property and purchase the right equipment. This method of establishing a price certainly wouldn't make much sense in a service industry where the key assets people and ideas are hard to value and develop.
- 5. <u>Discounted Cash Flow</u> (DCF): A key valuation tool in M&A, discounted cash flow analysis determines a company's current value, according to its estimated future cash flows. Forecasted free cash flows (net income + depreciation/amortization capital expenditures change in working capital) are discounted to a present value using the company's <u>weighted average costs of capital</u> (WACC). Admittedly, DCF is tricky to get right, but few tools can rival this valuation method.

AVIDUS ACADEMY OF MANAGEMENT What is a Hostile Takeover?

A hostile takeover, in <u>mergers and acquisitions (M&A)</u>, is the acquisition of a target company by another company (referred to as the acquirer) by going directly to the target company's shareholders, either by making a tender offer or through a <u>proxy vote</u>. The difference between a hostile and a friendly takeover is that, in a hostile takeover, the target company's <u>board of</u> <u>directors</u> do not approve of the transaction.

Example of a Hostile Takeover

For example, Company A is looking to pursue a corporate-level strategy and expand into a new geographical market.

1. Company A approaches Company B with a bid offer to purchase Company B.

- 2. The board of directors of Company B concludes that this would not be in the best interest of shareholders in Company B and rejects the bid offer.
- 3. Despite seeing the bid offer denied, Company A continues to push for an attempted acquisition of Company B.

In the scenario above, despite the rejection of its bid, Company A is still attempting an acquisition of Company B. This situation would then be referred to as a hostile takeover attempt.

Hostile Takeover Strategies

There are two commonly-used hostile takeover strategies: a tender offer or a proxy vote.

1. Tender offer

A tender offer is an offer to purchase stock shares from Company B shareholders at a premium to the market price. For example, if Company B's current market price of shares is \$10, Company A could make a tender offer to purchase shares of company B at \$15 (50% premium). The goal of a tender offer is to acquire enough voting shares to have a controlling equity interest in the target company. Ordinarily, this means the acquirer needs to own more than 50% of the voting stock. In fact, most tender offers are made conditional on the acquirer being able to obtain a specified amount of shares. If not enough shareholders are willing to sell their stock to Company A to provide it with a controlling interest, then it will cancel its \$15 a share tender offer.

2. Proxy vote

A proxy vote is the act of the acquirer company persuading existing shareholders to vote out the management of the target company so it will be easier to take over. For example, Company A could persuade shareholders of Company B to use their proxy votes to make changes to the company's board of directors. The goal of such a proxy vote is to remove the board members opposing the takeover and to install new board members who are more receptive to a change in ownership and who, therefore, will vote to approve the takeover.

Defenses against a Hostile Takeover

There are several defenses that the management of the target company can employ to deter a hostile takeover. They include the following:

- <u>Poison pill</u>: Making the stocks of the target company less attractive by allowing current shareholders of the target company to purchase new shares at a discount. This will dilute the equity interest represented by each share and, thus, increase the number of shares the acquirer company needs to buy in order to obtain a controlling interest. The hope is that by making the acquisition more difficult and more expensive, the would-be acquirer will abandon their takeover attempt.
- <u>Crown jewels defense</u>: Selling the most valuable parts of the company in the event of a hostile takeover attempt. This obviously makes the target company less desirable and deters a hostile takeover.
- **Supermajority amendment:** An amendment to the company's charter requiring a substantial majority (67%-90%) of the shares to vote to approve a merger.
- <u>Golden parachute</u>: An employment contract that guarantees expensive benefits be paid to key management if they are removed from the company following a takeover. The idea here is, again, to make the acquisition prohibitively expensive.
- <u>Greenmail</u>: The target company repurchasing shares that the acquirer has already purchased, at a higher premium, in order to prevent the shares from being in the hands of the acquirer. For example, Company A purchases shares of Company B at a premium price of \$15; the target, Company B, then offers to purchase shares at \$20 a share. Hopefully, it can repurchase enough shares to keep Company A from obtaining a controlling interest.
- <u>Pac-Man defense</u>: The target company purchasing shares of the acquiring company and attempting a takeover of their own. The acquirer will abandon its takeover attempt if it believes it is in danger of losing control of its own business. This strategy obviously requires Company B to have a lot of money to buy a lot of shares in Company A. Therefore, the Pac-Man defense usually isn't workable for a small company with limited capital resources.

M&A Deal Structure

An M&A deal structure is a <u>binding agreement</u> between parties in a <u>merger or</u> <u>acquisition (M&A)</u> that outlines the rights and obligations of both parties. It states what each party of the merger or acquisition is entitled to and what each is obliged to do under the agreement. Simply put, a deal structure can be referred to as the terms and conditions of an M&A.

Basics of an M&A Deal Structure

Mergers and acquisitions involve the coming together (synergizing) of two business entities to become one for economic, social, or other reasons. A merger or acquisition is possible only when there is a mutual agreement between both parties. The agreed upon terms on which these entities are willing to come together are known as an M&A deal structure.

Deal structuring is a part of the <u>M&A process</u>; it is one of the steps that must be taken in a merger or acquisition. It is the process of prioritizing the objectives of a merger or acquisition and ensuring that the top-priority objectives of all parties involved are satisfied, along with considering the weight of risk each party must bear. Initiating the deal structuring process requires all parties involved to state:

- Their stance on the <u>negotiation;</u>
- Observable <u>latent risks</u> and how they could be managed;
- How much risk they can tolerate; and
- Conditions under which negotiations may be canceled.

Developing a proper M&A deal structure can be quite complicated and challenging because of the number of factors to be considered. These factors include preferred financing means, corporate control, business plan, market conditions, <u>antitrust laws</u>, accounting policies, etc. Employing the right kind of financial, investment, and legal advice can make the process less complicated.

Ways of Structuring an M&A Deal

There are three well-known traditional ways of structuring a merger acquisition deal although, in recent times, business entities have engaged in other, more creative and flexible deal structuring methods. The three traditional ways of structuring an M&A deal are <u>asset</u> <u>acquisition</u>, stock purchase, and mergers. The methods can also be combined to achieve a more flexible deal structure.

1. Asset Acquisition

In an asset acquisition, the buyer purchases the assets of the selling company. An asset acquisition is usually the best deal structure for the selling company if it prefers a cash transaction. The buyer chooses which assets it wants to purchase.

Advantages of an asset acquisition may include:

- The choice of the buyer to decide which assets to buy from the seller and which not to
- The selling company is still legally recognized as a corporate entity after the sale, until it winds up completely

Disadvantages of an asset acquisition include:

- The buyer may not be able to acquire non-transferable assets, e.g., patents
- An asset acquisition may lead to high-impact tax costs for both the seller and buyer

• It may also take more time to close the deal, as compared to other deal structures

2. Stock Purchase

Unlike an asset acquisition, where there is a direct transaction of assets, assets are not directly transacted in a stock purchase. In a stock purchase acquisition, a majority amount of the seller's voting stock shares are acquired by the buyer. In essence, this means the ownership of the seller's assets and liabilities are transferred to the buyer.

Advantages of a stock purchase acquisition:

- Taxes on a stock purchase deal are minimized, especially for the seller
- Closing a stock purchase deal is less time-consuming since negotiations are relatively smooth
- May be less expensive

Disadvantages of a stock purchase acquisition:

- Legal or financial liabilities may accompany a stock purchase acquisition
- Uncooperative shareholders may also be a problem

3. Merger

Though the term "merger" is commonly used interchangeably with "acquisition," in a strict sense, a merger is the result of an agreement between two separate business entities to come together as one new entity. A merger is typically less complicated than an acquisition because all liabilities, assets, etc. become that of the new entity.

In structuring a deal, the advantages and disadvantages must be considered along with other influencing factors to reach a conclusion on which method to adopt.

Modeling Deal Structures:

Creating a Proper M&A Deal Structure

To create a great deal structure, aim for a win-win scenario, where the interests of both parties are well represented in the deal and risks are reduced to the barest minimum. Most often, winwin deal structures are more likely to lead to a sealed merger or acquisition deal and may even reduce the time required to complete the M&A process.

There are two important documents that are used to delineate the M&A deal structuring process. They are the Term Sheet and Letter of Intent (LOI).

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- **Term Sheet**: A <u>Term Sheet</u> is a document stating the terms and conditions of an intended financial investment, in this case, a merger or acquisition. On a general note, a term sheet is not intended to be legally binding unless otherwise stated by the parties involved.
- Letter of Intent (LOI): As the name implies, a Letter of Intent (LOI) is a document written to convey the intentions of the writer to the receiver, in this case, in respect to an M&A. Like the term sheet, an LOI is usually not intended to be legally binding except for the binding provisions included in the document.

Note :

Price Earnings Ratio Formula

P/E = Stock Price Per Share / Earnings Per Share

EPS = Earnings Available for share holders/ No .of Shares

P/E = Market Capitalization / Total Net Earnings

Market capitalization = No. of Shares * Market value

or

Justified P/E = Dividend Payout Ratio / R – G

Calculation of Earnings Available for share holders				
Sales	XX			
(-)Variable Cost	XX			
Contribution	XX			
(-)Fixed Cost	XX			
EBIT	XX			
(-)Interest	XX			
EBT	XX			
(-)Tax	XX			
Earnings Available for share holders	XX			

where;

R = Required Rate of Return

G = Sustainable Growth Rate

High P/E

Companies with a high Price Earnings Ratio are often considered to be growth stocks. This indicates a positive future performance, and investors have higher expectations for future earnings growth and are willing to pay more for them. The downside to this is that growth stocks are often higher in volatility and this puts a lot of pressure on companies to do more to justify their higher valuation. For this reason, investing in growth stocks will more likely be seen as a <u>risky</u> investment. Stocks with high P/E ratios can also be considered overvalued.

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Low P/E

Companies with a low Price Earnings Ratio are often considered to be value stocks. It means they are undervalued because their stock price trade lower relative to its fundamentals. This mispricing will be a great bargain and will prompt investors to buy the stock before the market corrects it. And when it does, investors make a profit as a result of a higher stock price. Examples of low P/E stocks can be found in mature industries that pay a steady rate of <u>dividends</u>.

P/E Ratio Example

If Stock A is trading at \$30 and Stock B at \$20, Stock A is not necessarily more expensive. The P/E ratio can help us determine, from a valuation perspective, which of the two is cheaper.

If the sector's average P/E is 15, Stock A has a P/E = 15 and Stock B has a P/E = 30, stock A is cheaper despite having a higher absolute price than Stock B because you pay less for every \$1 of current earnings. However, Stock B has a higher ratio than both its competitor and the sector. This might mean that investors will expect higher earnings growth in the future relative to the market. The P/E ratio is just one of the many valuation measures and financial analysis tools that we use to guide us in our investment decision, and it shouldn't be the only one.

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P/E Ratio Calculation

	Stock A	Stock B	Sector Average
Share Price Per Share	\$30	\$20	
Earnings Per Share	\$2.00	\$0.67	
P/E Ratio	15x	30x	15x
Total Outstanding Shares	250,000	280,000	
Market Capitalization	\$7,500,000	\$5,600,000	
Total Net Earnings	\$500,000	\$187,600	
P/E Ratio	15x	30x	

Enterprise value (EV) is a measure of a company's total value, often used as a more comprehensive alternative to equity market capitalization.

EBITDA

Earnings Before Interest, Taxes, Depreciation & Amortization EBITDA = E = Earnings Net Income B = Before + Taxes I = Interest + Interest Expense T = Tax + Depreciation & Amortization D = Depreciation A = Amortization A = Amortization

Capital expenditures (**CapEx**) are funds used by a company to acquire, upgrade, and maintain physical assets such as property, plants, buildings, technology, or equipment. **CapEx** is often used to undertake new projects or investments by a company.

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UNIT III

Financing Strategies

MEANING OF FINANCING STRATEGIES

A financing strategy establishes the fundamental steps of how an organization can achieve its financing targets, be it short term or long term. It involves a strategic plan as to how the organization can finance its overall operations. An ideal financing strategy must serve as a guideline for the employees of an organization in conducting the day to day finances.

EXAMPLE OF FINANCING STRATEGIES

Some of the popular examples of financing strategies for giving a head-start to your business are as follows:

DEBT FINANCING

This financing strategy lets you borrow money from banks or other lending institutions for using it in your business. The organization can repay the loan along with an interest depending on the terms of the contract.

EQUITY FINANCING

This financing strategy involves financing from investors also called as "venture capitalists". These investors agree to assist you in your business plans in lieu of ownership of a portion of your organization with their venture funding.

PERSONAL FINANCING : This is the less formal financing strategy whereby you can cater to your funding needs by asking your friends and family. This is very effective if you are a small

A financing the principle	Financing Strategies strategy is the backbone of an organization that lays down es to follow before every financing decision.
Maturity Approach	The organization matches the expected life of the current asset with the estimated life of the source of fund to raise these financial assets.
Conservative Approach	The organization relies on the long-term funds to acquire permanent assets and a part of temporary assets. For working capital financing, this financing strategy requires an organization to maintain high levels of current assets in relation to its sales.
Aggressive Approach	This is a very risky approach as there are chances that the organization might have a hard time dealing with its short-term obligations. For working capital financing, under this approach, the reliance is on short-term funds that are used for maintaining the current assets.
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FINANCING STRATEGIES FOR CURRENT ASSETS / WORKING CAPITAL

An organization can finance the <u>Current Assets</u> / <u>Working Capital</u> by using the following financing strategies:

MATCHING APPROACH CADEMY OF MANAGEMENT

As per this financing strategy, the organization matches the expected life of the current asset with the estimated life of the source of fund to raise these financial assets. For example, a machine whose life expectancy is 5 years can be funded using a loan of 5 years. The flip side of using this approach to finance your assets is that it may not be practically possible to match the life of an asset with that of its source of fund.

Similarly, for <u>working capital financing</u>, the matching approach aims to match the assets and liabilities to maturities. Thus, for every asset on the <u>balance sheet</u>, there is a corresponding liability that matures on the same day as the asset.

CONSERVATIVE APPROACH

As per this financing strategy, the organization relies on the long-term funds to acquire permanent assets and a part of temporary assets. As this financing strategy uses long-term funds, it has less risk of a shortage of immediate funds.

For working capital financing, this financing strategy requires an organization to maintain high levels of <u>current assets</u> in relation to its sales. Such surplus current assets can incorporate any changes in the sales and thus avoid disruption in the production plans.

AGGRESSIVE APPROACH

As per this financing strategy, the organization uses its short-term funds to finance a part of its permanent assets. This is a very risky approach as there are chances that the organization might have a hard time dealing with its short-term obligations. However, many organizations use this financing strategy for its advantages of lower financing cost and higher profitability.

For working capital financing, under this approach, the reliance is on short-term funds that are used for maintaining the current assets. These current assets are maintained only to meet the current liabilities and do not provide any cushion for the variation in working capital requirements.

Developing a financing strategy Introduction

A financing strategy is integral to an organisation's strategic plan. It sets out how the organisation plans to finance its overall operations to meet its objectives now and in the future.

A financing strategy summarises targets, and the actions to be taken over a three to five year period to achieve the targets. It also clearly states key policies which will guide those actions.

A suggested structure and contents for a financing strategy are outlined below.

1. Where are we now?

This section summarises where the organisation is at the start of the strategy. This includes an assessment of the key risks facing the organization and the opportunities and resources it has available.

2. Where would we like to be?

This section summarises key financial targets for three to five years' time, and is informed by the risks and opportunities identified in the first section. It will include as a minimum:

- The **desired funding mix** the balance and sources of restricted and unrestricted funds.
- **Financier dependency** linked to the funding mix, this is the realistic and appropriate level of funding to accept from financing agencies (expressed as a percentage of overall income).
- Level of general reserves usually expressed as the number of days that the organisation could continue without external funding.

3. How do we get there?

This is the 'meat' of the financing strategy. It describes what actions you will take each year to finance the strategic plan and achieve the financial targets identified in the second section.

This might include sections on:

- how to increase the mix and level of unrestricted funds
- how to finance core costs
- how to build up reserves
- how to replace and maintain fixed assets
- how to apply funds to achieve maximum benefit

For example, actions to increase the percentage of unrestricted income might include:

 increasing or introducing fees for users of services to recover some or all of the costs of providing the service;

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- introducing income-generating activities;
- making use of under-utilised resources (eg renting out office space, vehicles);
- increasing the priority given to fundraising for unrestricted funds.

4. Key policies

This section will include policies that guide the financing strategy. The examples given are for guidance only, and may not be appropriate or detailed enough for your organisation.

 Reserves policy – what level of <u>reserves</u> you aim to build up, and how surpluses will be

Example: It is our policy to maintain general reserves equivalent to 6 months of operating

expenditure. This policy is reviewed by the Board every three years. General fund surpluses in a given year will be added to this reserve. If the reserve level exceeds the policy level, we will spend it on behalf of the beneficiaries in line with our strategy.

• **Core costs policy** – what method will be used to recover <u>programme support costs</u> from projects and funders. It will also clarify the policy on subsidising 'poorer' projects and how that will be decided and managed.

Example: It is our policy to appoprtion overhead costs to projects on a monthly basis, in proportion to the direct costs incurred by each project. Each project should generate enough income to cover both its direct and apportioned indirect costs, unless the Board authorises otherwise for particular cases.

• **Pricing and cost recovery policy** – where charges are to be made to service users, this will explain the basis and formula used for the charging, and the pricing structure.

Example: It is our policy to charge users of the clinic for consultation, drugs and lab tests. The basis for thecharge is cost plus 10% to cover overhead. Patients unable to pay may apply to our 'Special Scheme' for assistance.

• Ethical policy – this will explain who the NGO will or will not accept <u>funds</u> from and what funds may or may not be used for. This will be particularly relevant to NGOs involved in advocacy work.

Example: It is our policy to consider the ethical nature of all funds offered to us before accepting. For example, we will not accept funds derived from any illegal source, or from corporates engaged in arms dealing or child labour. We will not accept funds that create a conflict of interest. We consider each case in line with our values.

International Financing

International Financing is also known as International Macroeconomics as it deals with finance on a global level. There are various sources for organizations to raise funds. To raise funds internationally is one of them. With economies and the operations of the <u>business</u> <u>organizations</u> going global, Indian companies have an access to funds in the global capital market. International finance helps organizations engage in cross-border transactions with foreign business <u>partners</u>, such as customers, investors, suppliers and lenders. Various international sources from where funds may be generated include the following.

(i) Commercial Banks

Global commercial banks all over provide loans in foreign currency to companies. They are crucial in financing non-trade international operations. The different types of loans and <u>services</u> provided by banks vary from country to country. One example of this is Standard Chartered emerged as a major source of foreign currency loans to the Indian <u>industry</u>. It is the most used source of international financing.

(ii) International Agencies and Development Banks

Many development <u>banks</u> and international agencies have come forth over the years for the purpose of international financing. These bodies are set up by the Governments of developed countries of the world at national, regional and international levels for funding various projects. The more industrious among them include International Finance Corporation (IFC), EXIM Bank and Asian Development Bank.

(iii) International Capital Markets

Emerging organizations including multinational companies depend upon fairly large <u>loans</u> in rupees as well as in foreign currency. The financial instruments used for this purpose are:

(a) American Depository Receipts (ADR's)

This a tool often used for international financing. As the name suggests, depository receipts issued by a company in the USA are known as American Depository Receipts. ADRs can be bought and sold in American markets like regular stocks. It is similar to a GDR except that it can be issued only to American citizens and can be listed and traded on a <u>stock exchange</u> of the United States of America.

(b) Global Depository Receipts (GDR's)

In the Indian context, a GDR is an instrument issued abroad by an Indian company to raise funds in some foreign currency and is listed and traded on a foreign stock exchange. A holder of GDR can at any time convert it into the number of shares it represents. The holders of GDRs do not carry any voting rights but only dividends and capital appreciation. Many renowned Indian companies such as Infosys, Reliance, Wipro, and ICICI have raised <u>money</u> through issue of GDRs.

(c) Foreign Currency Convertible Bonds (FCCB's)

Foreign currency convertible bonds are equity-linked debt securities that are to be converted into equity or depository receipts after a specific period. A holder of FCCB has the option of either converting them into equity shares at a predetermined price or exchange rate or retaining the bonds. The FCCB's are issued in a foreign currency and carry a fixed interest rate which is lower than the rate of any other similar nonconvertible debt instrument.

FCCB's resemble convertible debentures issued in India. It is true that businesses need funds but the funds required in <u>business</u> are of different types — long term, short term, fixed and fluctuating. That is the reason why business firms resort to different types of sources for raising funds.

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Choice Of The Source Of Funds

Short-term borrowings offer the benefit of reduced cost due to the reduction of idle capital, but long-term borrowings are considered a necessity on many grounds. Equally, equity capital has a role to play in the scheme for raising funds in the corporate sector.

It is recommended to use combinations of sources as no source of funds is devoid of limitations, instead of relying only on a single source. The factors that affect the choice of source of finance are discussed below:

(i) Cost

There are two types of cost, the cost of obtaining of funds and cost of utilizing the funds. Both these costs should be considered while deciding about the source of funds that will be used by an organization.

(ii) Financial Strength

In the choice of source of funds, business should be in a good financial position to be able to repay the amount and interest on the borrowed amount. When the earnings of the organization are not stable, fixed charged funds like preference shares and debentures should be carefully selected as these add to the financial strain on the organization.

(iii) A form of Organization and Reputation

Type of business organization and reputation in the market influences the choice of a source for raising money. A partnership firm, for example, cannot raise money by issue of equity shares as these can be issued only by a joint stock company.

(iv) Purpose and Duration

Business needs to plan according to the time period for which the funds are required. A short-term need can be met through borrowing funds at a low rate of interest through trade credit, commercial paper, etc. For long-term finance, sources such as the issue of shares and <u>debentures</u> required. Also, the purpose for which funds have required the need to be considered so that the source is matched with the user.

(v) Risk Involved

Business evaluates each of the source of finance in terms of the risk involved while issuing them. For example, there is the least risk in equity as the share capital has to be repaid only at the time of winding up and dividends need not be paid if no profits are available. Whereas, a loan has a repayment schedule for both the principal and the interest. The interest is required to be paid irrespective of the firm earning a profit or going through loss.

(vi) Control over Management

A particular source of the fund may affect the control and power of the owners on the management of a firm. The issue of equity shares may mean a dilution of the control. For example, as equity shareholders enjoy voting rights, financial institutions may take control of the assets or impose conditions as part of the loan agreement.

(vii) Creditworthiness

The reliability of business on particular sources may affect its creditworthiness in the market. For example, issue of secured debentures may affect the interest of unsecured creditors of the company and may adversely affect their willingness to extend further loans to the company.

(viii) Flexibility

Another important aspect affecting the choice of finance is the flexibility and ease of obtaining funds. Restrictive provisions, detailed investigation, and documentation in case of borrowings

from banks and financial institutions, for example, may be the reason that business organizations may not prefer it if other options are readily available.

(ix) Tax benefits

Various sources may also be weighed in terms of their tax benefits. For example, while the dividend on preference shares is not tax-deductible, interest paid on debentures and loan is tax deductible and may, therefore, be preferred by organizations seeking tax advantage.

Financial Risk Management:

Risk provides the basis for opportunity. The terms risk and exposure have subtle differences in their meaning. Risk refers to the probability of loss, while exposure is the possibility of loss, although they are often used interchangeably. Risk arises as a result of exposure.

Financial risk arises through countless transactions of a financial nature, including sales and purchases, investments and loans, and various other business activities. It can arise as a result of legal transactions, new projects, mergers and acquisitions, debt financing, the energy component of costs, or through the activities of management, stakeholders, competitors, foreign governments, or weather. When financial prices change dramatically, it can increase costs, reduce revenues, or otherwise adversely impact the profitability of an organization. Financial fluctuations may make it more difficult to plan and budget, price goods and services, and allocate capital.

There are three main sources of financial risk:

1. Financial risks arising from an organization's exposure to changes in market prices, such as interest rates, exchange rates, and commodity prices

2. Financial risks arising from the actions of, and transactions with, other organizations such as vendors, customers, and counterparties in derivatives transactions

3. Financial risks resulting from internal actions or failures of the organization, particularly people, processes, and systems

Financial risk management is a process to deal with the uncertainties resulting from financial markets. It involves assessing the financial risks facing an organization and developing

management strategies consistent with internal priorities and policies. Addressing financial risks proactively may provide an organization with a competitive advantage. It also ensures that management, operational staff, stakeholders, and the board of directors are in agreement on key issues of risk. Managing financial risk necessitates making organizational decisions about risks that are acceptable versus those that are not. The passive strategy of taking no action is the acceptance of all risks by default. Organizations manage financial risk using a variety of strategies and products. It is important to understand how these products and strategies work to reduce risk within the context of the organization's risk tolerance and objectives. Strategies for risk management often involve derivatives. Derivatives are traded widely among financial institutions and on organized exchanges. The value of derivatives contracts, such as futures, forwards, options, and swaps, is derived from the price of the underlying asset. Derivatives trade on interest rates, exchange rates, commodities, equity and fixed income securities, credit, and even weather. The products and strategies used by market participants to manage financial risk are the same ones used by speculators to increase leverage and risk.

Although it can be argued that widespread use of derivatives increases risk, the existence of derivatives enables those who wish to reduce risk to pass it along to those who seek risk and its associated opportunities. The ability to estimate the likelihood of a financial loss is highly desirable. However, standard theories of probability often fail in the analysis of financial markets. Risks usually do not exist in isolation, and the interactions of several exposures may have to be considered in developing an understanding of how financial risk arises. Sometimes, these interactions are difficult to forecast, since they ultimately depend on human behavior. The process of financial risk management is an ongoing one. Strategies need to be implemented and refined as the market and requirements change. Refinements may reflect changing expectations about market rates, changes to the business environment, or changing international political conditions, for example. In general, the process can be summarized as follows:

- Identify and prioritize key financial risks.
- Determine an appropriate level of risk tolerance.
- Implement risk management strategy in accordance with policy.
- Measure, report, monitor, and refine as needed.

Risk Management Process:

The process of financial risk management comprises strategies that enable an organization to manage the risks associated with financial markets. Risk management is a dynamic process that should evolve with an organization and its business. It involves and impacts many parts of an organization including treasury, sales, marketing, legal, tax, commodity, and corporate finance. The risk management process involves both internal and external analysis.

The first part of the process involves identifying and prioritizing the financial risks facing an organization and understanding their relevance. It may be necessary to examine the organization and its products, management, customers, suppliers, competitors, pricing, industry trends, balance sheet structure, and position in the industry. It is also necessary to consider stakeholders and their objectives and tolerance for risk. Once a clear understanding of the risks emerges, appropriate strategies can be implemented in conjunction with risk management policy. For example, it might be possible to change where and how business is done, thereby reducing the organization's exposure and risk. Alternatively, existing exposures may be managed with derivatives. Another strategy for managing risk is to accept all risks and the possibility of losses.

There are three broad alternatives for managing risk:

AVIDUS ACADEMY OF MANAGEMENT 1. Do nothing and actively, or passively by default, accept all risks.

2. Hedge a portion of exposures by determining which exposures can and should be hedged.

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3. Hedge all exposures possible. Measurement and reporting of risks provides decision makers with information to execute decisions and monitor outcomes, both before and after strategies are taken to mitigate them. Since the risk management process is ongoing, reporting and feedback can be used to refine the system by modifying or improving strategies. An active decision-making process is an important component of risk management. Decisions about potential loss and risk reduction provide a forum for discussion of important issues and the varying perspectives of stakeholders.

Factors that influence the level of market interest rates include: • Expected levels of inflation • General economic conditions • Monetary policy and the stance of the central bank • Foreign

exchange market activity .Foreign investor demand for debt securities • Levels of sovereign debt outstanding • Financial and political stability

Factors that influence the level of interest rates also influence exchange rates among floating or market-determined currencies.Currencies are very sensitive to changes or anticipated changes in interest rates and to sovereign risk factors. Some of the key drivers that affect exchange rates include: • Interest rate differentials net of expected inflation • Trading activity in other currencies • International capital and trade flows • International institutional investor sentiment • Financial and political stability • Monetary policy and the central bank • Domestic debt levels (e.g., debt-to-GDP ratio) • Economic fundamentals

Commodity prices may be affected by a number of factors, including: • Expected levels of inflation, particularly for precious metals • Interest rates • Exchange rates, depending on how prices are determined • General economic conditions • Costs of production and ability to deliver to buyers • Availability of substitutes and shifts in taste and consumption patterns • Weather, particularly for agricultural commodities and energy • Political stability, particularly for energy and precious metals

Identifying Major Financial Risks

Major market risks arise out of changes to financial market prices such as exchange rates, interest rates, and commodity prices. Major market risks are usually the most obvious type of financial risk that an organization faces. Major market risks include:

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• Foreign exchange risk • Interest rate risk • Commodity price risk • Equity price risk • Credit risk • Operational risk • Liquidity risk • Systemic risk

Financial Risk Management Methods and Techniques:

A firm needs to understand the intensity and types of potential risks it is prone to. **Finance** managers are supposed to thoroughly analyze the situation and they've to choose the most apt approach or process or method to check that financial risk.

1. Regression Analysis – This approach is used to study the effect on one variable when the other one changes. Let's say for instance what changes will cash inflow encounter when rate of interest increases or decreases.

2. Value at Risk (VaR) – Another popular approach in measuring and checking the financial risk is VaR analysis. VaR is measured with respect to the amount of potential loss, the probability of that amount of loss, and the time frame. For example, a financial firm is exposed to 5 per cent one month value at risk of INR 50,000. This implies that there is a 5 per cent chance that the firm has to bear a loss of INR 50,000 in any given month. Let's understand this concept with another example. Suppose another firm owns an investment portfolio on which they determine the VaR to be INR 100,000, at a 50 per cent confidence level over a 40 day holding period. Now, if no investments are infused or sold over within 40 days then there is a 50 per cent chance that the firm might lose out INR 100,000. VaR is estimate of the possible maximum loss. Actual losses may be above or below the estimated value.

3. Security Analysis – Analysis of tradable financial instruments like debts (money borrowed from market), equities (owner's fund), mixture of these two and warrants of company is known as security analysis. Sometimes futures contracts and tradable credit derivatives are also included. Security analysis is further sub-categorized into <u>fundamental analysis</u>, which works in accordance to different fundamental business factors such as financial statements, and <u>technical analysis</u>, which focuses upon price trends and momentum.

4. Scenario Analysis – Scenario analysis is another useful approach in quantifying risks. It is also known by stress tests, sensitivity tests, or 'what if?' analyses. Financial managers create more than one scenario and ask 'what if' this situation were to occur?

AVIDUS ACADEMY OF MANAGEMENT Diversification:

For many years, the riskiness of an asset was assessed based only on the variability of its returns. In contrast, modern portfolio theory considers not only an asset's riskiness, but also its contribution to the overall riskiness of the portfolio to which it is added. Organizations may have an opportunity to reduce risk as a result of risk diversification. In portfolio management terms, the addition of individual components to a portfolio provides opportunities for diversification, within limits. A diversified portfolio contains assets whose returns are dissimilar, in other words, weakly or negatively correlated with one another. It is useful to think of the exposures of an organization as a portfolio and consider the impact of changes or additions on the potential risk of the total. Diversification is an important tool in managing financial risks. Diversification among counterparties may reduce the risk that unexpected events adversely impact the organization through defaults. Diversification of customers, suppliers,

and financing sources reduces the possibility that an organization will have its business adversely affected by changes outside management's control. Although the risk of loss still exists, diversification may reduce the opportunity for large adverse outcomes.

Hedging is the business of seeking assets or events that offset, or has weak or negative correlation to, an organization's financial exposures.

A **financial swap** is a derivative contract where one party exchanges or "swaps" the cash flows or value of one asset for another. For example, a company paying a variable rate of interest may swap its interest payments with another company that will then pay the first company a fixed rate. Swaps can also be used to exchange other kinds of value or risk like the potential for a credit default in a bond.

Forward Contracts

The forward contract is an agreement between a buyer and seller to trade an asset at a future date. The price of the asset is set when the contract is drawn up. Forward contracts have one settlement date—they all settle at the end of the contract.

These contracts are private agreements between two parties, so they do not trade on an exchange. Because of the nature of the contract, they are not as rigid in their terms and conditions.

Many hedgers use forward contracts to cut down on the volatility of an asset's price. Since the terms of the agreement are set when the contract is executed, a forward contract is not subject to price fluctuations. So if two parties agree to the sale of 1000 ears of corn at \$1 each (for a total of \$1,000), the terms cannot change even if the price of corn goes down to 50 cents per ear. It also ensures that delivery of the asset, or, if specified, cash settlement, will usually take place.

Futures Contracts

Like forward contracts, futures contracts involve the agreement to buy and sell an asset at a specific price at a future date. The futures contract, however, has some differences from the forward contract.

First, futures contracts—also known as futures—are marked-to-market daily, which means that daily changes are settled day by day until the end of the contract. Furthermore, a settlement for futures contracts can occur over a range of dates.

Because they are traded on an exchange, they have clearing houses that guarantee the transactions. This drastically lowers the probability of default to almost never. Contracts are available on stock exchange indexes, commodities, and currencies. The most popular assets for futures contracts include crops like wheat and corn, and oil and gas.

The market for futures contracts is highly liquid, giving investors the ability to enter and exit whenever they choose to do so.

These contracts are frequently used by speculators, who bet on the direction in which an asset's price will move, they are usually closed out prior to maturity and delivery usually never happens. In this case, a cash settlement usually takes place.

WatchVideohttps://www.investopedia.com/ask/answers/06/forwardsandfutures.asp#:~:text=A%20forward%20contract%20is%20a,the%20end%20of%20the%20contract.

An **options contract** is an agreement between two parties to facilitate a potential transaction on the underlying security at a preset price, referred to as the strike price, prior to the expiration date.

The two types of contracts are put and call options, both of which can be purchased to speculate on the direction of stocks or stock indices, or sold to generate income.

Working Capital Policy

The <u>working capital</u> policy of a company refers to the level of investment in <u>current assets</u> for attaining their targeted sales. It can be of three types viz. restricted, relaxed, and moderate. The relaxed policy has higher and restricted has lower levels of current assets whereas moderate places itself between relaxed and restricted. Commonly, these policies are also named as aggressive, conservative and <u>hedging</u> policy.

IMPORTANT DECISIONS IN WORKING CAPITAL MANAGEMENT – LEVEL OF CURRENT ASSET AND THEIR MEANS OF FINANCING.

<u>Working capital management</u> has two main decisions at two consecutive stages. They are as follows:

1. The level of Current Assets – How much to invest in Current Assets to achieve the Targeted Revenue?

2. Means of Financing Current Assets – How should the above Current Asset Investment be financed i.e. the mix of long and short term finance?

DIFFERENCE BETWEEN WORKING CAPITAL POLICIES AND WORKING CAPITAL FINANCING STRATEGIES

Commonly, policies of working capital and strategies (approaches) of <u>working capital</u> financing are interchangeably used and which is not correct. There is a thin line of difference between the two. <u>Working capital management</u> policy deals with the first decision and working capital management strategies or approaches deal with the second decision. Working capital policies are restricted, relaxed and moderate whereas the working capital strategies are aggressive, conservative and hedging (Maturity Matching).



Sales (\$)

THREE TYPES OF WORKING CAPITAL POLICIES

Based on the attitude of the finance manager towards risk, profitability and liquidity, the working capital policies can be divided into following three types.

RESTRICTED POLICY

In restricted policy, the estimation of current assets for achieving targeted revenue is done very aggressively without considering for any contingencies and provisions for any unforeseen event. After deciding, these policies are forcefully implemented in the organization without

tolerating any deviations. In the diagram, point R represents the restricted policy which attains the same level of revenues with lowest current assets.

Adopting this policy would result in an advantage of the lower working capital requirement due to the lower level of current assets. This saves the interest cost to the company and which in turn produces higher profitability i.e. higher <u>return on investment</u> (ROI). On the other hand, there is the disadvantage in the form of high risk due to very aggressive policy. That is why; it is also called as **aggressive working capital policy**.

The biggest benefit of this policy is that it has reasonable assurance of smooth operation of working operating capital cycle with moderate profitability.

Working capital policies can be further framed for each component of <u>net working capital</u> i.e. cash, accounts receivable, inventory and accounts payable. Cash policies can be to maintain an appropriate level of cash. When the level is high, it should be invested in liquid investments for short term and vice versa. Accounts receivable policy may state about payment terms, credit period, credit limit, etc. Inventory policy may speak of minimizing the levels of inventory till the point it poses any risk to the satisfaction of customer demands. Accounts payable policies include policies of payment terms, quality terms, return policies, etc.

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WORKING CAPITAL POLICIES

The **WORKING CAPITAL POLICIES** of a company refers to the level of investment in current assets for attaining their targeted sales. Two important decisions in working capital management are – the level of current assets and the means of financing current assets

- RESTRICTED POLICY: Current Asset estimation is done very aggressively.
 Implemented without any tolerance of deviation. Saves interest cost due to lower
 working capital requirement.
- **RELAXED POLICY**: Current asset estimation is done after careful consideration of various factors. Advantage of no or low risk.
- MODERATE POLICY : Balance between the other two policies. Risk is lower than the restricted and higher than conservative. Reasonable assurance of smooth operations.

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RELAXED POLICY

Relaxed policy is just the opposite of restricted policy. In this policy, the estimation of current assets for achieving the targeted revenue is prepared after careful consideration of uncertain events such as seasonal fluctuations, a sudden change in the level of activities or sales etc. After the reasonable estimates also, a cushion to avoid any unforeseen circumstances is left to avoid the maximum possible risk. In the diagram, it represents the point Rx which uses the highest level of current assets for achieving the same level of sales.

The companies having relaxed working capital policies assume an advantage of almost no risk or low risk. This policy guarantees the entrepreneur of the smooth functioning of the operating cycle. We know that earnings are more important than higher earnings. On the other hand, there is a disadvantage of lower return on investment because higher investment in the current assets attracts higher interest cost which in turn reduces profitability. Because of its conservative nature, this policy is also called as **conservative working capital policy**.

MODERATE POLICY

Moderate policy is a balance between the two policies i.e. restricted and relaxed. It assumes characteristics of the both the policies. To strike a balance, moderate policy assumes risk which is lower than restricted and higher than conservative. In profitability front also, it lies between the two.

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UNIT IV

Leasing :

A "lease" is defined as a contract between a lessor and a lessee for the hire of a specific asset for a specific period on payment of specified rentals.

The maximum period of lease according to law is for 99 years. Previously land or real estate, mines and quarries were taken on lease. But now a day's plant and equipment, modem civil aircraft and ships are taken.

Definition:

(i) Lessor:

The party who is the owner of the equipment permitting the use of the same by the other party on payment of a periodical amount.

(ii) Lessee:

The party who acquires the right to use equipment for which he pays periodically.

Lease Rentals:

This refers to the consideration received by the lessor in respect of a transaction and includes:

(i) Interest on the lessor's investment;

(ii) Charges borne by the lessor. Such as repairs, maintenance, insurance, etc;

(iii) Depreciation;

(iv) Servicing charges.

At present there are many leasing companies such as 1st Leasing Company, 20th Century Leasing Company which are doing quite a lot of business through leasing, It has become an important financial service and a lucrative avenue of making sizable profits by leasing companies.

Importance of Leasing:

1. Lease finance is easy to get than getting loan for buying all fixed assets. 2. Monthly rent payment for lease finance will be operating expenses. It will be allowed to deduct total income. So, company can get tax benefits in lease financing. 3. It can show as invisible debt of company out of its balance sheet. You can show lease finance in the footnote of balance sheet, if you did contract directly with the owner of asset. 4. One of major important point is that it is more flexible way of finance. You can fix your financing. need of asset and it one lease through lease get

Types of Lease:

1. Financial Lease:

This type of lease which is for a long period provides for the use of asset during the primary lease period which devotes almost the entire life of the asset. The lessor assumes the role of a financier and hence services of repairs, maintenance etc., are not provided by him. The legal title is retained by the lessor who has no option to terminate the lease agreement.

The principal and interest of the lessor is recouped by him during the desired payback period in the form of lease rentals. The finance lease is also called capital lease is a loan in disguise. The lessor thus is typically a financial institution and does not render specialized service in connection with the asset.

2. Operating Lease:

It is where the asset is not wholly amortized during the non-cancellable period, if any, of the lease and where the lessor does not rely for is profit on the rentals in the non- cancellable period. In this type of lease, the lessor who bears the cost of insurance, machinery, maintenance, repair costs, etc. is unable to realize the full cost of equipment and other incidental charges during the initial period of lease.

The lessee uses the asset for a specified time. The lessor bears the risk of obsolescence and incidental risks. Either party to the lease may termite the lease after giving due notice of the same since the asset may be leased out to other willing leases.

3. Sale and Lease Back Leasing:

To raise funds a company may-sell an asset which belongs to the lessor with whom the ownership vests from there on. Subsequently, the lessor leases the same asset to the company (the lessee) who uses it. The asset thus remains with the lessee with the change in title to the lessor thus enabling the company to procure the much needed finance.

4. Sales Aid Lease:

Under this arrangement the lessor agrees with the manufacturer to market his product through his leasing operations, in return for which the manufacturer agrees to pay him a commission.

5. Specialized Service Lease:

In this type of agreement, the lessor provides specialized personal services in addition to providing its use.

6. Small Ticket and Big Ticket Leases:

The lease of assets in smaller value is generally called as small ticket leases and larger value assets are called big ticket leases.

7. Cross Border Lease:

Lease across the national frontiers is called cross border leasing. The recent development in economic liberalisation, the cross border leasing is gaining greater importance in areas like aviation, shipping and other costly assets which base likely to become absolute due to technological changes.

Merits of Leasing:

(i) The most important merit of leasing is flexibility. The leasing company modifies the arrangements to suit the leases requirements.

(ii) In the leasing deal less documentation is involved, when compared to term loans from financial institutions.

(iii) It is an alternative source to obtain loan and other facilities from financial institutions. That is the reason why banking companies and financial institutions are now entering into leasing business as this method of finance is more acceptable to manufacturing units.

(iv) The full amount (100%) financing for the cost of equipment may be made available by a leasing company. Whereas banks and other financial institutions may not provide for the same.

(v) The 'Sale and Lease Back' arrangement enables the lessees to borrow in case of any financial crisis.

(vi) The lessee can avail tax benefits depending upon his tax status.

Demerits of Leasing:

(i) In leasing the cost of interest is very high.

(ii) The asset reverts back to the owner on the termination of the lease period and the lesser loses his claim on the residual value.

(iii) Leasing is not useful in setting up new projects as the rentals become payable soon after the acquisition of assets.

(iv) The lessor generally leases out assets which are purchased by him with the help of bank credit. In the event of a default made by the lessor in making the payment to the bank, the asset would be seized by the bank much to the disadvantage of the lessee.

Accounting Considerations:

Finance Lease

In case where lease is able to secure for lessor the recovery of his capital outlays plus a reasonable return on the fund invested during the lease period is called financing lease. Finance lease in non-cancellable contract and also, lessor is not responsible for any expenses and taxes of the leased asset.

Accounting Treatment

In the books of Lessor –

- Total value of the investment plus income receivable on it will be treated as receivables in the Balance sheet.
- Direct expenses may be directly debited from the profit and Loss account in the year of expenses incurred or may be deferred up to the lease period.

In the books of Lessee -

- Initial direct cost will be treated as an asset.
- Fair value of the leased assets should be considered as an asset and a liability in the finance lease.
- It is an appropriate to show liability separately in the Balance sheet.

Tax Considerations:

Annual lease payments are tax deductible for the lessee if one crucial criterion is met: The IRS must agree that a contract truly is a lease and not just an installment loan called a lease. Before embarking on a lease transaction, all involved parties should obtain an opinion from the IRS regarding the tax status of the proposed lease. The opinion of the IRS normally revolves primarily around the following general rules:

- The remaining useful life of the equipment at the end of the lease term must be the greater of 1 year or 20 percent of its originally estimated useful life.
- Leases in excess of 30 years are *not* considered to be leases for tax purposes.
- The lease payments must provide the lessor with a fair market rate return on the investment. This profit potential must exist apart from the transaction's tax benefits.
- Renewal options must be reasonable, that is, the renewal rate must be closely related to the economic value of the asset for the renewal period.
- If the lease agreement specifies a purchase option at the end of the lease period, the purchase price must be based on the asset's fair market value at that time.
- The schedule of lease payments should not be very high early in the lease and very low thereafter. Such a payment schedule suggests that the lease structure is being used merely to avoid taxes.
- In the case of a leveraged lease, the lessor must provide a minimum of 20 percent equity.
- Limited-use property (valuable only to the lessee) may not be leased.

Evaluation of Lease from the point of view of Lessor and Lessee:

Payback method:

What is the meaning of payback period?

Payback period is the time required to recover the initial cost of an investment. It is the number of years it would take to get back the initial investment made for a project. Therefore, as a technique of capital budgeting, the payback period will be used to compare projects and derive the number of years it takes to get back the initial investment. The project with the least number of years usually is selected.

Salient features of Payback period method

- Payback period is a simple calculation of time for the initial investment to return.
- It ignores the time value of money. All other techniques of capital budgeting consider the concept of time value of money. Time value of money means that a rupee today is

more valuable than a rupee tomorrow. So other techniques discount the future inflows and arrive at discounted flows.

• It is used in combination with other techniques of capital budgeting. Owing to its simplicity the payback period cannot be the only technique used for deciding the project to be selected.

Illustrations

Let us understand the payback period method with a few illustrations.

Apple Limited has two project options. The initial investment in both the projects is Rs. 10,00,000.

Project A has even inflow of Rs. 1,00,000 every year.

Project B has uneven cash flows as follows:

Year 1 – Rs. 2,00,000 Year 2 – Rs. 3,00,000 Year 3 – Rs. 4,00,000 Year 4 – Rs. 1,00,000 Now let us apply the payback period method to both the projects. The formula for computing payback period with even cashflows is: Pay back period = **Total outflows Initial investment** or Inflow every year Net annual cash inflows **SINCE 2011** Project A AVIDUS ACADEMY OF MANAGEMENT If we use the formula, Initial investment / Net annual cash inflows then: 10,00,000/1,00,000 = 10 years **Project B** Total inflows = 10,00,000 (2,00,000+3,00,000+4,00,000+1,00,000)Total outflows = 10,00,000Project B takes four years to get back the initial investment. Now, let us modify the cash flows of project B and see how to get the payback period: Say, cash inflows are – Year 1 – Rs. 2,00,000 Year 2 – Rs. 3,00,000 Year 3 – Rs. 7,00,000 Year 4 – Rs. 1,50,000 The payback period can be calculated as follows:

Year	Total flow (in Lakhs)	Cumulative flow

1	2	2
2	3	5
3	7	12
4	1.5	13.5

Now to find out the payback period:

Step 1: We must pick the year in which the outflows have become positive. In other words, the year with the last negative outflow has to be selected. So, in this case, it will be year two.

Step 2: Divide the total cumulative flow in the year in which the cash flows became positive by the total flow of the consecutive year.

So that is: 5/7 = 0.71

Step 3: Step 1 +Step 2 = the payback period is 2.71 years.

Therefore, between Project A and B, solely on the payback method, Project B (in both the examples) will be selected.

The example stated above is a very simple presentation. In an actual scenario, an investment might not generate returns for the first few years. Gradually over time, it might generate returns. That too will play a major role in determining the payback period.

Note: In case an organization is replacing an existing machinery, the inflows will be considered on an incremental basis.

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Calculation of PV:

Introduction to the Present Value of a Single Amount (PV)

If you received \$100 today and deposited it into a savings account, it would grow over time to be worth *more* than \$100. This fact of financial life is a result of the **time value of money**, a concept which says it's more valuable to receive \$100 *now* rather than a year from now. To put it another way, the *present value* of receiving \$100 one year from now is less than \$100.

Accountants use Present Value (PV) calculations to account for the time value of money in a number of different applications. For example, assume your company provides a service in December 2018 and agrees to be paid \$100 in December 2019. The time value of money tells us that the part of the \$100 is interest you will earn for waiting one year for the \$100. Perhaps only \$91 of the \$100 is service revenue earned in 2018 and \$9 is interest that will be earned in 2019. The calculation of present value will remove the interest, so that the amount of the service revenue can be determined. Another example might involve the purchase of land: the owners will either sell it to you for \$160,000 *today*, or for \$200,000 if you pay at the end of two years. To help analyze the alternatives, you would use a PV calculation to tell you the interest rate *implicit* in the second option.

PV calculations can also tell you such things as how much money to invest right now in return for specific cash amounts to be received in the future, or how to estimate the rate of return on your investments. Our focus will be on *single* amounts that are received or paid in the future. We'll discuss PV calculations that solve for the present value, the implicit interest rate, and/or the length of time between the present and future amounts.

Calculations for the Present Value of a Single Amount

At the outset, it's important for you to understand that PV calculations involve *cash* amounts—not *accrual* amounts.

In present value calculations, future cash amounts are *discounted* back to the present time. (Discounting means removing the interest that is imbedded in the future cash amounts.) As a result, present value calculations are often referred to as a **discounted cash flow technique**.

PV calculations involve the compounding of interest. This means that any interest earned is reinvested and *itself* will earn interest at the same rate as the principal. In other words, you "*earn* interest *on* interest." The compounding of interest can be very significant when the interest rate and/or the number of years is sizeable.

We will use present value (PV) to mean a single future amount such as one receipt or one payment. Here are the components of a present value (PV) calculation:

- 5. Present value amount (PV)
- 6. Future value amount (FV)
- 7. Length of time before the future value amount occurs (n)
- 8. Interest rate used for discounting the future value amount (i)

If you know any **three** of these four components, you will be able to calculate the unknown component. Accountants are often called upon to calculate this unknown component.

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Calculation Using the PV Formula

The present value formula for a single amount is:

 $PV = FV (1 + i)^{-n}$ (or) $PV = FV \times [1 \div (1 + i)^{n}]$

Using the second version of the formula, the solution is:

PV = FV x [1 + (1 + i)ⁿ] PV = \$100 x [1 + (1 + 0.08)²] PV = \$100 x [1 + (1.08)²] PV = \$100 x [1 + 1.1664] PV = \$100 x [0.8573388] ← PV factor PV = \$85.73

The answer, **\$85.73**, tells us that receiving \$100 in two years is the same as receiving \$85.73 today, if the time value of money is 8% per year compounded annually. ("Today" is the same concept as "time period 0.")

Present	Value	of	1	Table	(PV	of	1	Table)
Present	Value	Factors	for	1.000	at	Compou	Ind	Interest
Rounded		to	tl	hree	de	cimal		places.

Example:

When interest is 8% per period and it is compounded each period, receiving 1.000 at the end of the 10th period has a present value of 0.463.

n	1%	2%	3%	4%	5%	6%	8%	10%	12%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.926	0.909	0.893	
2	0.980	0.961	0.943	0.925	0.907	0.890	0.857	0.826	0.797	
3	0.971	0.942	0.915	0.889	0.864	0.840	0.794	0.751	0.712	
4	0.961	0.924	0.888	0.855	0.823	0.792	0.735	0.683	0.636	
5	0.951	0.906	0.863	0.822	0.784	0.747	0.681	0.621	0.567	
6	0.942	0.888	0.837	0.790	0.746	0.705	0.630	0.564	0.507	
7	0.933	0.871	0.813	0.760	0.711	0.665	0.583	0.513	0.452	
8	0.923	0.853	0.789	0.731	0.677	0.627	0.540	0.467	0.404	
9	0.914	0.837	0.766	0.703	0.645	0.592	0.500	0.424	0.361	
10	0.905	0.820	0.744	0.676	0.614	0.558	0.463	0.386	0.322	
11	0.896	0.804	0.722	0.650	0.585	0.527	0.429	0.350	0.287	
12	0.887	0.788	0.701	0.625	0.557	0.497	0.397	0.319	0.257	— ТМ
13	0.879	0.773	0.681	0.601	0.530	0.469	0.368	0.290	0.229	
14	0.870	0.758	0.661	0.577	0.505	0.442	0.340	0.263	0.205	
15	0.861	0.743	0.642	0.555	0.481	0.417	0.315	0.239	0.183	
16	0.853	0.728	0.623	0.534	0.458	0.394	0.292	0.218	0.163	1
17 —	0.844	0.714	0.605	0.513	0.436	0.371	0.270	0.198	0.146	- FNT
18	0.836	0.700	0.587	0.494	0.416	0.350	0.250	0.180	0.130	
19	0.828	0.686	0.570	0.475	0.396	0.331	0.232	0.164	0.116	
20	0.820	0.673	0.554	0.456	0.377	0.312	0.215	0.149	0.104	
21	0.811	0.660	0.538	0.439	0.359	0.294	0.199	0.135	0.093	
22	0.803	0.647	0.522	0.422	0.342	0.278	0.184	0.123	0.083	
23	0.795	0.634	0.507	0.406	0.326	0.262	0.170	0.112	0.074	
24	0.788	0.622	0.492	0.390	0.310	0.247	0.158	0.102	0.066	
25	0.780	0.610	0.478	0.375	0.295	0.233	0.146	0.092	0.059	
26	0.772	0.598	0.464	0.361	0.281	0.220	0.135	0.084	0.053	
27	0.764	0.586	0.450	0.347	0.268	0.207	0.125	0.076	0.047	
28	0.757	0.574	0.437	0.333	0.255	0.196	0.116	0.069	0.042	
29	0.749	0.563	0.424	0.321	0.243	0.185	0.107	0.063	0.037	
30	0.742	0.552	0.412	0.308	0.231	0.174	0.099	0.057	0.033	

The Internal Rate of Return is a good way of judging an investment. The bigger the better!

The InternalRateofReturn istheinterestratethat makes theNet Present Valuezero. It is an Interest Rate.

We find it by first guessing what it might be (say 10%), then work out the Net Present Value.

The **Net Present Value** is how much the investment is worth in today's money (we find how to calculate it later)

Then keep guessing (maybe 8%? 9%?) and calculating, until we get a **Net Present Value of zero**.



Example: Sam is going to start a small bakery!

Sam estimates all the costs and earnings for the next 2 years, and calculates the Net Present Value:

At 6% Sam gets a Net Present Value of \$2000

But the Net Present Value should be **zero**, so Sam tries 8% interest:

At 8% Sam gets a Net Present Value of -\$1600

Now it's negative! So Sam tries once more, but with 7% interest:

At 7% Sam gets a Net Present Value of \$15

Close enough to zero, Sam doesn't want to calculate any more.

The Internal Rate of Return (IRR) is about 7%

So the Internal Rate of Return is the interest rate that makes the Net Present Value zero.

And that "guess and check" method is the common way to find it (though in that simple case it could have been worked out directly).

Formula :

 $\mathbf{PV} = \mathbf{CF} / (1+\mathbf{i})^{\mathbf{n}}$

IRR:

	Internal Rate of Return							
1	Cash Flows Year 1	Cash Flows Year 2	Cash Flows Year 3	Cash Flows Year 4	۱.	Initial	_	0
l	(1+IRR)1	(1+IRR) ²	(1+IRR) ³	(1+IRR)4)	Investment	-	0

Let's try a example: Example: Invest \$2,000 now, receive 3 yearly payments of \$100 each, plus \$2,500 in the 3rd year. Find out IRR?

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MANAGEMENT

Year	CF	IRR @ 10%	PV
1	100	1.1	90.90909
2	100	1.21	82.64463
3	100	1.331	75.13148
3	2500	1.331	1878.287
		Total	
		Returns	2126.972
		Investment	2000
			126.9722

Year	CF	IRR @ 12%	PV	
1	100	1.12	89.28571	
2	100	1.2544	79.71939	
3	100	1.404928	71.17802	
3	2500	1.404928	1779.451	
		Total		
		Returns	2019.634	naa
		Investment	2000	
			19.63375	

Α	VIDU	S ACAI	DEMY	OF
		IRR @		
Year	CF	12.4.%	PV	
1	100	1.124	88.96797	
2	100	1.263376	79.153	
3	100	1.420034624	70.42082	
3	2500	1.4200346	1760.52	
		Total		
		Returns	1999.062	
		Investment	2000	
			-0.93773	

IRR = 12.4%

Capital rationing /Profitability Index:

Capital rationing is a strategy used by companies or investors to limit the number of projects they take on at a time. If there is a pool of available investments that are all expected to be profitable, capital rationing helps the investor or business owner choose the most profitable ones to pursue.

Companies that employ a capital rationing strategy typically produce a relatively higher <u>return</u> <u>on investment (ROI)</u>. This is simply because the company invests its resources where it identifies the highest profit potental

Capital Rationing Example

Capital rationing is about putting restrictions on investments and projects taken on by a business. To illustrate this better, let's consider the following example:

VV Construction is looking at five possible projects to invest in, as shown below:

Project	Investment Capital	Net Present Value (NPV)
1	\$2 billion	\$2 billion
2	\$4 billion	\$4 billion
3	\$5 billion	\$3 billion
4	\$4 billion	\$2 billion
5	\$6 billion	\$5 billion

To determine which project offers the greatest potential <u>profitability</u>, we compute each project using the following formula:

Profitability = NPV / Investment Capital

Project	NPV / Investment Capital	Profitability
1	\$2 billion / \$2 billion	1
2	\$4 billion / \$4 billion	1
3	\$3 billion / \$5 billion	0.6
4	\$2 billion / \$4 billion	0.5
5	\$5 billion / \$6 billion	.83

Based on the table above, we can conclude that projects 1 and 2 offer the greatest potential profit. Therefore, VV Construction will likely invest in those two projects.

Lease versus Buy Decision

Capital

- Purchasing (Buying): Purchasing requires more capital (cash reserve or lender support) as you look to purchase the asset by paying its full value.
- Leasing: Initial capital requirement under leasing contracts is limited and monthly payments also account to a smaller amount.

Ownership

- Purchasing (Buying): When you buy equipment, you are the ultimate owner and are responsible for its maintenance etc.
- Leasing: Under leasing, the lessee is not the owner of the asset. He just obtains the right to use the asset for a fixed term under pre-defined lease payments.

Term

- Purchasing (Buying): Buying decision is not related to the term of the asset as the owner can use it till the end of its useful life. An asset that is bought can be replaced at any time.
- Leasing: Leasing agreements are run usually for a fixed term and at the end of the term, the lessee is required to either purchase the asset or to return it to <u>lessor</u>. Most of lease contracts cannot be terminated before the end of the term.

Risk & Rewards

- Purchasing (Buying): Given that the ownership lies with the purchaser, the buyer is responsible for all risks and rewards associated with the asset. Hence, buying an asset should be avoided in an industry or segment where there are frequent technological innovations.
- Leasing: Under <u>operating lease</u>, all the rewards associated with the asset remain with the lessor whereas most of the risks and rewards stay with the lessee under finance lease.

Tax Benefits

• Purchasing (Buying): Purchasing an asset will bring you limited tax benefit. If the asset is funded using existing cash reserves, there is likely no tax benefit at all. For a debt funded asset purchase, the owner will be able to claim tax benefit on interest on such debt. Principal amount is not deductible though.

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• Leasing: Under a lease contract, all the lease payments are fully tax deductible. This will include any lease rental payment plus the interest on any outstanding lease amount. Thus from a taxation perspective, leasing is much more beneficial

Hire-Purchase:

DEFINITION OF HIRE PURCHASE

Hire Purchase is defined as an <u>agreement</u> in which the owner of the assets lets them on hire for regular installments paid by the hirer. The hirer has the option to purchase and own the asset once all the agreed payments have been made. These periodic payments also include an interest component paid towards the use of the asset apart from the price of the asset.

The term 'Hire-Purchase' is a UK term and is synonymous to 'rent-to-own' or 'installment plan' in various other countries. Owning goods through hire and purchase lets companies improve their earnings performance. Not just beneficial to the hirer, this system is also the most effective and secure form of credit sales for the current owner of the asset.

Hire purchase is a method of purchasing or financing capital goods whereby the goods are accessible for use almost instantaneously but the payment is made in smaller parts over an agreed period. The ownership is transferred only after the paying all installments. Technically speaking, it is an agreement between the buyer (or user) of the asset and the financing company whereby the financing company purchases the asset on behalf of the buyer and the buyer utilized it for business purpose and pays back to the financing company in small installments called hire charges.

In other words, hire purchase can be defined as an option of financing or acquiring an asset for use whereby the financing company let the goods on hire to the buyer against small installments called hire charges and the buyer gets the right to use the asset with an option to purchase the asset by paying all such installments spread over a period of time. Hire purchase was very prominent for vehicle financing whether that is a personal car, commercial vehicle etc but now equipment, machinery etc are also financed with hire purchase method.

HIRE PU	<u>RCHASE</u>				
HIRE PURCHASE is an option of financing an asset for use whereby the financing company lent the goods on hire to the buyer against small installments called hire charges & the buyer gets the right to use the asset with an option to purchase the asset by paying all such installments spread over a period of time.					
 Rental payments in instalments Each rental payment considered as charge for hiring the asset. Hire-Purchase agreement contains terms and conditions Frequency of the installments as per terms agreed. Asset instantly delivered to the purchaser. Asset instantly delivered to the purchaser. Asset are passed to him after the last installment is paid. The hirer cannot pledge, sell or mortgage the assets as he is not the owner of the assets till the last payment is made. Hirer can terminate the agreement any time before the ownership rights pass to him. 					
ADVANTAGES	DISADVANTAGES				
 Immediate use without payment of entire price Best for purchase of expensive assets Fixed instalments makes budgeting easier. No obligation to buy the asset. 	 Total amount paid could be much higher than the cost of the asset due to substantially high-interest rates. Long Duration Ownership at the end of the agreement May result in penalty if asset not needed and agreement terminated. 				
<u>eFinanceMan</u>	agement.com				

FEATURES AND CHARACTERISTICS OF HIRE PURCHASE

Hire purchase is a typical transaction in which the assets are allowed to be hired and the hirer is provided an option to later purchase the same assets.

Following are the features of a regular hire purchase transaction:

- Rental payments are paid in installments over the period of the agreement.
- Each rental payment is considered as a charge for hiring the asset. This means that, if the hirer defaults on any payment, the seller has all the rights to take back the assets.
- All the required terms and conditions between both the parties involved are documented in a contract called Hire-Purchase agreement.
- The frequency of the installments may be annual, half-yearly, quarterly, monthly, etc. according to the terms of the agreement.
- Assets are instantly delivered to the hirer as soon as the agreement is signed.
- If the hirer uses the option to purchase, the assets are passed to him after the last installment is paid.
- If the hirer does not want to own the asset, he can return the assets any time and is not required to pay any installment that falls due after the return.
- However, once the hirer returns the assets, he cannot claim back any payments already paid as they are the charges towards the hire and use of the assets.
- The hirer cannot pledge, sell or mortgage the assets as he is not the owner of the assets till the last payment is made.
- The hirer, usually, pays a certain amount as an initial deposit / down payment while signing the agreement.
- Generally, the hirer can terminate the hire purchase agreement any time before the ownership rights pass to him.

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HOW THE TRANSACTION / PROCESS OF HIRE PURCHASE TAKES PLACE STEP BY STEP?

The following info graphics will explain how the transaction takes place.



ADVANTAGES OF HIRE PURCHASE

Hire Purchase has the following advantages:

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- Immediate use of assets without paying the entire amount.
- Expensive assets can be utilized as the payment is spread over a period of time.
- Fixed rental payments make <u>budgeting</u> easier as all the expenditures are known in advance.
- Easy accessibility as it is a secured financing.
- No need to worry about the asset depreciating quickly in value as there is no obligation to buy the asset.

DISADVANTAGES OF HIRE PURCHASE

Hire Purchase suffers from the following disadvantages:

- Total amount paid towards the asset could be much higher than the cost of the asset due to substantially high-interest rates.
- The long duration of the rental payments.
- Ownership only at the end of the agreement. The hirer cannot modify the asset till then.
- The addition of any covenants increases the cost.
- If the hired asset is no longer needed because of any change in the business strategy, there may be a resulting penalty.

HIRE PURCHASE IS BEST SUITABLE FOR

Small scale companies and entrepreneurs can benefit from Hire Purchase. Expensive and important assets can be hired and later owned. This ensures that they can start using the asset from very first day and use the money earned to later buy the same assets.

- Evaluation of Hire-Purchase from the point of view of Hire-Purchase and Hire-Vendor.

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UNIT IV

Leasing :

A "lease" is defined as a contract between a lessor and a lessee for the hire of a specific asset for a specific period on payment of specified rentals.

The maximum period of lease according to law is for 99 years. Previously land or real estate, mines and quarries were taken on lease. But now a day's plant and equipment, modem civil aircraft and ships are taken.

Definition:

(i) Lessor:

The party who is the owner of the equipment permitting the use of the same by the other party on payment of a periodical amount.

(ii) Lessee:

The party who acquires the right to use equipment for which he pays periodically.

Lease Rentals:

This refers to the consideration received by the lessor in respect of a transaction and includes:

(i) Interest on the lessor's investment;

(ii) Charges borne by the lessor. Such as repairs, maintenance, insurance, etc;

(iii) Depreciation;

(iv) Servicing charges.

At present there are many leasing companies such as 1st Leasing Company, 20th Century Leasing Company which are doing quite a lot of business through leasing. It has become an important financial service and a lucrative avenue of making sizable profits by leasing companies.

Importance of Leasing:

1. Lease finance is easy to get than getting loan for buying all fixed assets. 2. Monthly rent payment for lease finance will be operating expenses. It will be allowed to deduct total income. So, company can get tax benefits in lease financing. 3. It can show as invisible debt of company out of its balance sheet. You can show lease finance in the footnote of balance sheet, if you did contract directly with the owner of asset. 4. One of major important point is that it is more flexible way of finance. You can fix your financing. need of asset and it one lease through lease get

Types of Lease:

1. Financial Lease:
This type of lease which is for a long period provides for the use of asset during the primary lease period which devotes almost the entire life of the asset. The lessor assumes the role of a financier and hence services of repairs, maintenance etc., are not provided by him. The legal title is retained by the lessor who has no option to terminate the lease agreement.

The principal and interest of the lessor is recouped by him during the desired payback period in the form of lease rentals. The finance lease is also called capital lease is a loan in disguise. The lessor thus is typically a financial institution and does not render specialized service in connection with the asset.

2. Operating Lease:

It is where the asset is not wholly amortized during the non-cancellable period, if any, of the lease and where the lessor does not rely for is profit on the rentals in the non- cancellable period. In this type of lease, the lessor who bears the cost of insurance, machinery, maintenance, repair costs, etc. is unable to realize the full cost of equipment and other incidental charges during the initial period of lease.

The lessee uses the asset for a specified time. The lessor bears the risk of obsolescence and incidental risks. Either party to the lease may termite the lease after giving due notice of the same since the asset may be leased out to other willing leases.

3. Sale and Lease Back Leasing:

To raise funds a company may-sell an asset which belongs to the lessor with whom the ownership vests from there on. Subsequently, the lessor leases the same asset to the company (the lessee) who uses it. The asset thus remains with the lessee with the change in title to the lessor thus enabling the company to procure the much needed finance.

4. Sales Aid Lease:

Under this arrangement the lessor agrees with the manufacturer to market his product through his leasing operations, in return for which the manufacturer agrees to pay him a commission.

5. Specialized Service Lease:

In this type of agreement, the lessor provides specialized personal services in addition to providing its use.

6. Small Ticket and Big Ticket Leases:

The lease of assets in smaller value is generally called as small ticket leases and larger value assets are called big ticket leases.

7. Cross Border Lease:

Lease across the national frontiers is called cross border leasing. The recent development in economic liberalisation, the cross border leasing is gaining greater importance in areas like aviation, shipping and other costly assets which base likely to become absolute due to technological changes.

Merits of Leasing:

(i) The most important merit of leasing is flexibility. The leasing company modifies the arrangements to suit the leases requirements.

(ii) In the leasing deal less documentation is involved, when compared to term loans from financial institutions.

(iii) It is an alternative source to obtain loan and other facilities from financial institutions. That is the reason why banking companies and financial institutions are now entering into leasing business as this method of finance is more acceptable to manufacturing units.

(iv) The full amount (100%) financing for the cost of equipment may be made available by a leasing company. Whereas banks and other financial institutions may not provide for the same.

(v) The 'Sale and Lease Back' arrangement enables the lessees to borrow in case of any financial crisis.

(vi) The lessee can avail tax benefits depending upon his tax status.

Demerits of Leasing:

(i) In leasing the cost of interest is very high.

(ii) The asset reverts back to the owner on the termination of the lease period and the lesser loses his claim on the residual value.

(iii) Leasing is not useful in setting up new projects as the rentals become payable soon after the acquisition of assets.

(iv) The lessor generally leases out assets which are purchased by him with the help of bank credit. In the event of a default made by the lessor in making the payment to the bank, the asset would be seized by the bank much to the disadvantage of the lessee.

Accounting Considerations:

Finance Lease

In case where lease is able to secure for lessor the recovery of his capital outlays plus a reasonable return on the fund invested during the lease period is called financing lease. Finance lease in non-cancellable contract and also, lessor is not responsible for any expenses and taxes of the leased asset.

Accounting Treatment

In the books of Lessor –

- Total value of the investment plus income receivable on it will be treated as receivables in the Balance sheet.
- Direct expenses may be directly debited from the profit and Loss account in the year of expenses incurred or may be deferred up to the lease period.

In the books of Lessee -

- Initial direct cost will be treated as an asset.
- Fair value of the leased assets should be considered as an asset and a liability in the finance lease.
- It is an appropriate to show liability separately in the Balance sheet.

Tax Considerations:

Annual lease payments are tax deductible for the lessee if one crucial criterion is met: The IRS must agree that a contract truly is a lease and not just an installment loan called a lease. Before embarking on a lease transaction, all involved parties should obtain an opinion from the IRS regarding the tax status of the proposed lease. The opinion of the IRS normally revolves primarily around the following general rules:

- The remaining useful life of the equipment at the end of the lease term must be the greater of 1 year or 20 percent of its originally estimated useful life.
- Leases in excess of 30 years are *not* considered to be leases for tax purposes.
- The lease payments must provide the lessor with a fair market rate return on the investment. This profit potential must exist apart from the transaction's tax benefits.
- Renewal options must be reasonable, that is, the renewal rate must be closely related to the economic value of the asset for the renewal period.
- If the lease agreement specifies a purchase option at the end of the lease period, the purchase price must be based on the asset's fair market value at that time.
- The schedule of lease payments should not be very high early in the lease and very low thereafter. Such a payment schedule suggests that the lease structure is being used merely to avoid taxes.
- In the case of a leveraged lease, the lessor must provide a minimum of 20 percent equity.
- Limited-use property (valuable only to the lessee) may not be leased.

Evaluation of Lease from the point of view of Lessor and Lessee:

Payback method:

What is the meaning of payback period?

Payback period is the time required to recover the initial cost of an investment. It is the number of years it would take to get back the initial investment made for a project. Therefore, as a technique of capital budgeting, the payback period will be used to compare projects and derive the number of years it takes to get back the initial investment. The project with the least number of years usually is selected.

Salient features of Payback period method

- Payback period is a simple calculation of time for the initial investment to return.
- It ignores the time value of money. All other techniques of capital budgeting consider the concept of time value of money. Time value of money means that a rupee today is

more valuable than a rupee tomorrow. So other techniques discount the future inflows and arrive at discounted flows.

• It is used in combination with other techniques of capital budgeting. Owing to its simplicity the payback period cannot be the only technique used for deciding the project to be selected.

Illustrations

Let us understand the payback period method with a few illustrations.

Apple Limited has two project options. The initial investment in both the projects is Rs. 10,00,000.

Project A has even inflow of Rs. 1,00,000 every year.

Project B has uneven cash flows as follows:

Year 1 – Rs. 2,00,000 Year 2 – Rs. 3,00,000 Year 3 – Rs. 4,00,000 Year 4 – Rs. 1,00,000 Now let us apply the payback period method to both the projects. The formula for computing payback period with even cashflows is: Pay back period = **Total outflows Initial investment** or Inflow every year Net annual cash inflows **SINCE 2011** Project A AVIDUS ACADEMY OF MANAGEMENT If we use the formula, Initial investment / Net annual cash inflows then: 10,00,000/1,00,000 = 10 years **Project B** Total inflows = 10,00,000 (2,00,000+3,00,000+4,00,000+1,00,000)Total outflows = 10,00,000Project B takes four years to get back the initial investment. Now, let us modify the cash flows of project B and see how to get the payback period: Say, cash inflows are – Year 1 – Rs. 2,00,000 Year 2 – Rs. 3,00,000 Year 3 – Rs. 7,00,000 Year 4 – Rs. 1,50,000 The payback period can be calculated as follows:

Year	Total flow (in Lakhs)	Cumulative flow

1	2	2
2	3	5
3	7	12
4	1.5	13.5

Now to find out the payback period:

Step 1: We must pick the year in which the outflows have become positive. In other words, the year with the last negative outflow has to be selected. So, in this case, it will be year two.

Step 2: Divide the total cumulative flow in the year in which the cash flows became positive by the total flow of the consecutive year.

So that is: 5/7 = 0.71

Step 3: Step 1 +Step 2 = the payback period is 2.71 years.

Therefore, between Project A and B, solely on the payback method, Project B (in both the examples) will be selected.

The example stated above is a very simple presentation. In an actual scenario, an investment might not generate returns for the first few years. Gradually over time, it might generate returns. That too will play a major role in determining the payback period.

Note: In case an organization is replacing an existing machinery, the inflows will be considered on an incremental basis.

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Calculation of PV:

Introduction to the Present Value of a Single Amount (PV)

If you received \$100 today and deposited it into a savings account, it would grow over time to be worth *more* than \$100. This fact of financial life is a result of the **time value of money**, a concept which says it's more valuable to receive \$100 *now* rather than a year from now. To put it another way, the *present value* of receiving \$100 one year from now is less than \$100.

Accountants use Present Value (PV) calculations to account for the time value of money in a number of different applications. For example, assume your company provides a service in December 2018 and agrees to be paid \$100 in December 2019. The time value of money tells us that the part of the \$100 is interest you will earn for waiting one year for the \$100. Perhaps only \$91 of the \$100 is service revenue earned in 2018 and \$9 is interest that will be earned in 2019. The calculation of present value will remove the interest, so that the amount of the service revenue can be determined. Another example might involve the purchase of land: the owners will either sell it to you for \$160,000 *today*, or for \$200,000 if you pay at the end of two years. To help analyze the alternatives, you would use a PV calculation to tell you the interest rate *implicit* in the second option.

PV calculations can also tell you such things as how much money to invest right now in return for specific cash amounts to be received in the future, or how to estimate the rate of return on your investments. Our focus will be on *single* amounts that are received or paid in the future. We'll discuss PV calculations that solve for the present value, the implicit interest rate, and/or the length of time between the present and future amounts.

Calculations for the Present Value of a Single Amount

At the outset, it's important for you to understand that PV calculations involve *cash* amounts—not *accrual* amounts.

In present value calculations, future cash amounts are *discounted* back to the present time. (Discounting means removing the interest that is imbedded in the future cash amounts.) As a result, present value calculations are often referred to as a **discounted cash flow technique**.

PV calculations involve the compounding of interest. This means that any interest earned is reinvested and *itself* will earn interest at the same rate as the principal. In other words, you "*earn* interest *on* interest." The compounding of interest can be very significant when the interest rate and/or the number of years is sizeable.

We will use present value (PV) to mean a single future amount such as one receipt or one payment. Here are the components of a present value (PV) calculation:

- 9. Present value amount (PV)
- 10. Future value amount (FV)
- 11. Length of time before the future value amount occurs (n)
- 12. Interest rate used for discounting the future value amount (i)

If you know any **three** of these four components, you will be able to calculate the unknown component. Accountants are often called upon to calculate this unknown component.

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Calculation Using the PV Formula

The present value formula for a single amount is:

 $PV = FV (1 + i)^{-n}$ (or) $PV = FV \times [1 \div (1 + i)^{n}]$

Using the second version of the formula, the solution is:

PV = FV x [1 + (1 + i)ⁿ] PV = \$100 x [1 + (1 + 0.08)²] PV = \$100 x [1 + (1.08)²] PV = \$100 x [1 + 1.1664] PV = \$100 x [0.8573388] ← PV factor PV = \$85.73

The answer, **\$85.73**, tells us that receiving \$100 in two years is the same as receiving \$85.73 today, if the time value of money is 8% per year compounded annually. ("Today" is the same concept as "time period 0.")

Present	Value	of	1	Table	(PV	of	1	Table)
Present	Value	Factors	for	1.000	at	Comp	ound	Interest
Rounded		to	tl	nree	de	cimal		places.

Example:

When interest is 8% per period and it is compounded each period, receiving 1.000 at the end of the 10th period has a present value of 0.463.

n	1%	2%	3%	4%	5%	6%	8%	10%	12%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.926	0.909	0.893	
2	0.980	0.961	0.943	0.925	0.907	0.890	0.857	0.826	0.797	
3	0.971	0.942	0.915	0.889	0.864	0.840	0.794	0.751	0.712	
4	0.961	0.924	0.888	0.855	0.823	0.792	0.735	0.683	0.636	
5	0.951	0.906	0.863	0.822	0.784	0.747	0.681	0.621	0.567	
6	0.942	0.888	0.837	0.790	0.746	0.705	0.630	0.564	0.507	
7	0.933	0.871	0.813	0.760	0.711	0.665	0.583	0.513	0.452	
8	0.923	0.853	0.789	0.731	0.677	0.627	0.540	0.467	0.404	
9	0.914	0.837	0.766	0.703	0.645	0.592	0.500	0.424	0.361	
10	0.905	0.820	0.744	0.676	0.614	0.558	0.463	0.386	0.322	
11	0.896	0.804	0.722	0.650	0.585	0.527	0.429	0.350	0.287	
12	0.887	0.788	0.701	0.625	0.557	0.497	0.397	0.319	0.257	— ТМ
13	0.879	0.773	0.681	0.601	0.530	0.469	0.368	0.290	0.229	
14	0.870	0.758	0.661	0.577	0.505	0.442	0.340	0.263	0.205	
15	0.861	0.743	0.642	0.555	0.481	0.417	0.315	0.239	0.183	
16	0.853	0.728	0.623	0.534	0.458	0.394	0.292	0.218	0.163	1
17 —	0.844	0.714	0.605	0.513	0.436	0.371	0.270	0.198	0.146	- FNT
18	0.836	0.700	0.587	0.494	0.416	0.350	0.250	0.180	0.130	
19	0.828	0.686	0.570	0.475	0.396	0.331	0.232	0.164	0.116	
20	0.820	0.673	0.554	0.456	0.377	0.312	0.215	0.149	0.104	
21	0.811	0.660	0.538	0.439	0.359	0.294	0.199	0.135	0.093	
22	0.803	0.647	0.522	0.422	0.342	0.278	0.184	0.123	0.083	
23	0.795	0.634	0.507	0.406	0.326	0.262	0.170	0.112	0.074	
24	0.788	0.622	0.492	0.390	0.310	0.247	0.158	0.102	0.066	
25	0.780	0.610	0.478	0.375	0.295	0.233	0.146	0.092	0.059	
26	0.772	0.598	0.464	0.361	0.281	0.220	0.135	0.084	0.053	
27	0.764	0.586	0.450	0.347	0.268	0.207	0.125	0.076	0.047	
28	0.757	0.574	0.437	0.333	0.255	0.196	0.116	0.069	0.042	
29	0.749	0.563	0.424	0.321	0.243	0.185	0.107	0.063	0.037	
30	0.742	0.552	0.412	0.308	0.231	0.174	0.099	0.057	0.033	

The Internal Rate of Return is a good way of judging an investment. The bigger the better!

The InternalRateofReturn istheinterestratethat makes theNet Present Valuezero. It is an Interest Rate.

We find it by first guessing what it might be (say 10%), then work out the Net Present Value.

The **Net Present Value** is how much the investment is worth in today's money (we find how to calculate it later)

Then keep guessing (maybe 8%? 9%?) and calculating, until we get a **Net Present Value of zero**.



Example: Sam is going to start a small bakery!

Sam estimates all the costs and earnings for the next 2 years, and calculates the Net Present Value:

At 6% Sam gets a Net Present Value of \$2000

But the Net Present Value should be **zero**, so Sam tries 8% interest:

At 8% Sam gets a Net Present Value of -\$1600

Now it's negative! So Sam tries once more, but with 7% interest:

At 7% Sam gets a Net Present Value of \$15

Close enough to zero, Sam doesn't want to calculate any more.

The Internal Rate of Return (IRR) is about 7%

So the Internal Rate of Return is the interest rate that makes the Net Present Value zero.

And that "guess and check" method is the common way to find it (though in that simple case it could have been worked out directly).

Formula :

 $\mathbf{PV} = \mathbf{CF} / (1+\mathbf{i})^{\mathbf{n}}$

IRR:

	Internal Rate of Return							
1	Cash Flows Year 1	Cash Flows Year 2	Cash Flows Year 3	Cash Flows Year 4	۱.	Initial	-	0
l	(1+IRR)1	(1+IRR) ²	(1+IRR) ³	(1+IRR)4)	Investment	-	0

Let's try a example: Example: Invest \$2,000 now, receive 3 yearly payments of \$100 each, plus \$2,500 in the 3rd year. Find out IRR?

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Year	CF	IRR @ 10%	PV
1	100	1.1	90.90909
2	100	1.21	82.64463
3	100	1.331	75.13148
3	2500	1.331	1878.287
		Total	
		Returns	2126.972
		Investment	2000
			126.9722

Year	CF	IRR @ 12%	PV	
1	100	1.12	89.28571	
2	100	1.2544	79.71939	
3	100	1.404928	71.17802	
3	2500	1.404928	1779.451	
		Total		
		Returns	2019.634	
		Investment	2000	
			19.63375	

Α	VIDU	S ACAI	DEMY	OF
		IRR @		
Year	CF	12.4.%	PV	
1	100	1.124	88.96797	
2	100	1.263376	79.153	
3	100	1.420034624	70.42082	
3	2500	1.4200346	1760.52	
		Total		
		Returns	1999.062	
		Investment	2000	
			-0.93773	

IRR = 12.4%

Capital rationing /Profitability Index:

Capital rationing is a strategy used by companies or investors to limit the number of projects they take on at a time. If there is a pool of available investments that are all expected to be profitable, capital rationing helps the investor or business owner choose the most profitable ones to pursue.

Companies that employ a capital rationing strategy typically produce a relatively higher <u>return</u> <u>on investment (ROI)</u>. This is simply because the company invests its resources where it identifies the highest profit potental

Capital Rationing Example

Capital rationing is about putting restrictions on investments and projects taken on by a business. To illustrate this better, let's consider the following example:

VV Construction is looking at five possible projects to invest in, as shown below:

Project	Investment Capital	Net Present Value (NPV)
1	\$2 billion	\$2 billion
2	\$4 billion	\$4 billion
3	\$5 billion	\$3 billion
4	\$4 billion	\$2 billion
5	\$6 billion	\$5 billion

To determine which project offers the greatest potential <u>profitability</u>, we compute each project using the following formula:

Profitability = NPV / Investment Capital

Project	NPV / Investment Capital	Profitability
1	\$2 billion / \$2 billion	1
2	\$4 billion / \$4 billion	1
3	\$3 billion / \$5 billion	0.6
4	\$2 billion / \$4 billion	0.5
5	\$5 billion / \$6 billion	.83

Based on the table above, we can conclude that projects 1 and 2 offer the greatest potential profit. Therefore, VV Construction will likely invest in those two projects.

Lease versus Buy Decision

Capital

- Purchasing (Buying): Purchasing requires more capital (cash reserve or lender support) as you look to purchase the asset by paying its full value.
- Leasing: Initial capital requirement under leasing contracts is limited and monthly payments also account to a smaller amount.

Ownership

- Purchasing (Buying): When you buy equipment, you are the ultimate owner and are responsible for its maintenance etc.
- Leasing: Under leasing, the lessee is not the owner of the asset. He just obtains the right to use the asset for a fixed term under pre-defined lease payments.

Term

- Purchasing (Buying): Buying decision is not related to the term of the asset as the owner can use it till the end of its useful life. An asset that is bought can be replaced at any time.
- Leasing: Leasing agreements are run usually for a fixed term and at the end of the term, the lessee is required to either purchase the asset or to return it to <u>lessor</u>. Most of lease contracts cannot be terminated before the end of the term.

Risk & Rewards

- Purchasing (Buying): Given that the ownership lies with the purchaser, the buyer is responsible for all risks and rewards associated with the asset. Hence, buying an asset should be avoided in an industry or segment where there are frequent technological innovations.
- Leasing: Under <u>operating lease</u>, all the rewards associated with the asset remain with the lessor whereas most of the risks and rewards stay with the lessee under finance lease.

Tax Benefits

• Purchasing (Buying): Purchasing an asset will bring you limited tax benefit. If the asset is funded using existing cash reserves, there is likely no tax benefit at all. For a debt funded asset purchase, the owner will be able to claim tax benefit on interest on such debt. Principal amount is not deductible though.

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• Leasing: Under a lease contract, all the lease payments are fully tax deductible. This will include any lease rental payment plus the interest on any outstanding lease amount. Thus from a taxation perspective, leasing is much more beneficial

Hire-Purchase:

DEFINITION OF HIRE PURCHASE

Hire Purchase is defined as an <u>agreement</u> in which the owner of the assets lets them on hire for regular installments paid by the hirer. The hirer has the option to purchase and own the asset once all the agreed payments have been made. These periodic payments also include an interest component paid towards the use of the asset apart from the price of the asset.

The term 'Hire-Purchase' is a UK term and is synonymous to 'rent-to-own' or 'installment plan' in various other countries. Owning goods through hire and purchase lets companies improve their earnings performance. Not just beneficial to the hirer, this system is also the most effective and secure form of credit sales for the current owner of the asset.

Hire purchase is a method of purchasing or financing capital goods whereby the goods are accessible for use almost instantaneously but the payment is made in smaller parts over an agreed period. The ownership is transferred only after the paying all installments. Technically speaking, it is an agreement between the buyer (or user) of the asset and the financing company whereby the financing company purchases the asset on behalf of the buyer and the buyer utilized it for business purpose and pays back to the financing company in small installments called hire charges.

In other words, hire purchase can be defined as an option of financing or acquiring an asset for use whereby the financing company let the goods on hire to the buyer against small installments called hire charges and the buyer gets the right to use the asset with an option to purchase the asset by paying all such installments spread over a period of time. Hire purchase was very prominent for vehicle financing whether that is a personal car, commercial vehicle etc but now equipment, machinery etc are also financed with hire purchase method.

HIRE PU	RCHASE					
HIRE PURCHASE is an option of financing and the goods on hire to the buyer against small install to use the asset with an option to purchase the a period of time.	HIRE PURCHASE is an option of financing an asset for use whereby the financing company lent the goods on hire to the buyer against small installments called hire charges & the buyer gets the right to use the asset with an option to purchase the asset by paying all such installments spread over a period of time.					
 Rental payments in instalments Each rental payment considered as charge for hiring the asset. Hire-Purchase agreement contains terms and conditions Frequency of the installments as per terms agreed. Assets are passed to him after the last installment is paid. The hirer cannot pledge, sell or mortgage the assets as he is not the owner of the assets till the last payment is made. Hirer can terminate the agreement any time before the ownership rights pass to him. 						
ADVANTAGES	DISADVANTAGES					
 Immediate use without payment of entire price Best for purchase of expensive assets Fixed instalments makes budgeting easier. No obligation to buy the asset. 	 Total amount paid could be much higher than the cost of the asset due to substantially high-interest rates. Long Duration Ownership at the end of the agreement May result in penalty if asset not needed and agreement terminated. 					
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FEATURES AND CHARACTERISTICS OF HIRE PURCHASE

Hire purchase is a typical transaction in which the assets are allowed to be hired and the hirer is provided an option to later purchase the same assets.

Following are the features of a regular hire purchase transaction:

- Rental payments are paid in installments over the period of the agreement.
- Each rental payment is considered as a charge for hiring the asset. This means that, if the hirer defaults on any payment, the seller has all the rights to take back the assets.
- All the required terms and conditions between both the parties involved are documented in a contract called Hire-Purchase agreement.
- The frequency of the installments may be annual, half-yearly, quarterly, monthly, etc. according to the terms of the agreement.
- Assets are instantly delivered to the hirer as soon as the agreement is signed.
- If the hirer uses the option to purchase, the assets are passed to him after the last installment is paid.
- If the hirer does not want to own the asset, he can return the assets any time and is not required to pay any installment that falls due after the return.
- However, once the hirer returns the assets, he cannot claim back any payments already paid as they are the charges towards the hire and use of the assets.
- The hirer cannot pledge, sell or mortgage the assets as he is not the owner of the assets till the last payment is made.
- The hirer, usually, pays a certain amount as an initial deposit / down payment while signing the agreement.
- Generally, the hirer can terminate the hire purchase agreement any time before the ownership rights pass to him.

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HOW THE TRANSACTION / PROCESS OF HIRE PURCHASE TAKES PLACE STEP BY STEP?

The following info graphics will explain how the transaction takes place.



ADVANTAGES OF HIRE PURCHASE

Hire Purchase has the following advantages:

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- Immediate use of assets without paying the entire amount.
- Expensive assets can be utilized as the payment is spread over a period of time.
- Fixed rental payments make <u>budgeting</u> easier as all the expenditures are known in advance.
- Easy accessibility as it is a secured financing.
- No need to worry about the asset depreciating quickly in value as there is no obligation to buy the asset.

DISADVANTAGES OF HIRE PURCHASE

Hire Purchase suffers from the following disadvantages:

- Total amount paid towards the asset could be much higher than the cost of the asset due to substantially high-interest rates.
- The long duration of the rental payments.
- Ownership only at the end of the agreement. The hirer cannot modify the asset till then.
- The addition of any covenants increases the cost.
- If the hired asset is no longer needed because of any change in the business strategy, there may be a resulting penalty.

HIRE PURCHASE IS BEST SUITABLE FOR

Small scale companies and entrepreneurs can benefit from Hire Purchase. Expensive and important assets can be hired and later owned. This ensures that they can start using the asset from very first day and use the money earned to later buy the same assets.

- Evaluation of Hire-Purchase from the point of view of Hire-Purchase and Hire-Vendor.

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