Practice Question – FM

Q.1. Shares in ABC Co. have a beta of 0.8. The market is giving a return of 15% and the risk free rate is 8% . What will be the ABC's cost of equity ?

Q.2 . The risk-free rate is 5% and the market risk premium is 10%. The beta of Stock A is 1.4 and its standard deviation is 30%. What is the expected return of Stock A ?

Q.3. Company ABC has a capital structure of 60% equity and 40% debt. The company's equity cost is 10%, while the cost of debt is 6%. The company's tax rate is 25%. What is the WACC for the company if the market value of equity is 600,000/- and the market value of debt is Rs.400,000/-

Q.4. During FY22, PTCL generated a return of 5.5%. As per their latest annual report (Financial statment), the company has an outstanding debt of Rs.50.0 million and common equity valued at Rs.70.0 million. It also has incurred Rs.2.0 million interest expense on its debt. On the other hand, the risk-free rate of return, market return, and beta are 1.5%, 4.0%, and 1.2x, respectively.

Calculate WACC using the given information and check whether the 5.5% investment return exceeds the cost of capital if the tax rate is 32%.

CSS - 2021

Q. No. 2. Calculate payback period, required rate of return is 12% for net present value and profitability index. **(20)**

0	Initial Cash outflow	$ 1,00,000
1	Cash flows	$34,432
2	Cash flows	$39,530
3	Cash flows	$39,359
4	Cash flows	$ 32,219

CSS - 2020

Q. No. 8. Tiger Corporation is considering to invest in a given project. After tax cash flows of the projects are given below: **(20)**

Years	Project ($)
Initial Cash Flow	150,000
1	50,000
2	56,000
3	64,000
4	68,000
5	72,000

Determine Payback Period, Net Present Value and Profitability Index using 13% as required rate of return.

CSS – 2017 = Q. No. 8. Discuss the three common capital budgeting decision techniques with examples and formulas (20)

CSS- 2019 = Q. No. 5. Discuss the three common capital budgeting decision techniques with examples and formulas.(20)

CSS- 2016 = Q.No.4. Discuss the features of various types of Financial Markets (20)

DATE: __/__/____

Business Administration
Financial Management Assignment

Question 1

Beta (β) = 0.8
Market return = 15% (r_m)
Risk-free rate = 8% (r_f)

Cost of equity = $R_f + \beta(r_m - r_f)$

$= 0.08 + 0.8(0.15 - 0.08)$

$= 0.08 + 0.056$

CoE = 0.136 or 13.6%.

Question 2

Risk-free rate (r_f) = 5%
Market risk premium (RP) = 10%
Beta (β) = 1.4

Risk Premium = $r_m - r_f$
$10\% = r_m - 5\%$
$10\% + 5\% = r_m$
$r_m = 15\%$

Expected Return = $R_f + \beta(r_m - r_f)$

$= 8\% * 0.05 + 1.4(0.15 - 0.05)$

DATE: __/__/____

$= 0.05 + 1.4(0.1)$

$= 0.05 + 0.14$

expected return = 0.19 or 19%.

Question 3

	Cost	Weight
Capital/Equity	0.6	0.1
Debt	0.4	0.06

Debt = Rs. 50,000,000
Interest = Rs. 2,000,000
Risk-free return (r_f) = 1.5%
Beta (β) = 1.2
market return (r_m) = 4%
Investment return = 5.8%
tax rate (t) = 32%

Question 3

	Cost	Weight
Capital/Equity	0.1 (k_e)	0.6 (w_e)
Debt	0.06 (k_D)	0.4 (w_D)

tax rate (t) = 25%
$1 - t = 1 - 0.25 = 0.75$

$WACC = (k_e \times w_e) + [(k_D(1-t) \times w_D]$

DATE: __/__/____

$= (0.1 \times 0.6) + [(0.06 \times 0.75) \times 0.4]$

$= 0.06 + [0.045 \times 0.4]$

$= 0.06 + 0.018$

WACC = 0.078 or 7.8%

Question 4

Investment return = 5.5%
Debt = Rs. 50,000,000
Equity = Rs. 70,000,000
Interest expense = Rs. 2,000,000
Risk-free return (r_f) = 1.5%
market return (r_m) = 4%
Beta (β) = 1.2
tax rate (t) = 32%
$1 - t = 1 - 0.32 = 0.68$

Cost of Equity $= R_f + \beta(r_m - r_f)$

$= 0.015 + 1.2(0.04 - 0.015)$

$= 0.015 + 1.2(0.025)$

$= 0.015 + 0.03$

CoE = 0.045 or 4.5%

DATE: __/__/____

Debt x Cost of Debt = Interest amount

5,000,000 x (CoD) = 2,000,000

$$CoD = \frac{2,000,000}{50,000,000}$$

CoD = 0.04 or 4%.

	Cost	Weight
Equity	0.045 (k_e)	0.58 (w_e)
Debt	0.04 (k_D)	0.42 (w_D)

Weight of Equity (w_e) = Equity value / ~~Total~~ Debt + Equity

$$= \frac{70,000,000}{50,000,000 + 70,000,000}$$

$$= \frac{70,000,000}{120,000,000}$$

$$= 0.58$$

Weight of Debt = $\frac{50,000,000}{120,000,000}$ = Debt / Debt + Equity

$$= 0.42$$

DATE: __/__/____

$$WACC = (k_e \times W_e) + [(k_D \times (1-t)) \times W_D]$$

$$= (0.045 \times 0.58) + [(6.04 \times 0.68) \times 0.42]$$

$$= 0.0261 + [0.0272 \times 0.42]$$

$$= 0.0261 + 0.011424$$

$$\boxed{WACC = 0.038 \text{ or } 3.8\%}$$

The investment return of 5.5% exceeds the weighted average cost of capital of 3.8%.

CSS 2021

Year	Cash Flows	Present Value
0	(100,000)	(100,000)
1	34432	30742.86
2	39530	31513.07
3	39359	28014.96
4	32219	20475.76

Payback Period (PBP) = Years before PBP occurs + Unrecovered amount / Cash flow during the recovery year

$$= 2 + \frac{26038}{39359}$$

$$= 2 + 0.66$$

DATE: __/__/____

Payback Period = 2.66 years

Required rate of return : 12%

Present value of 1st year:

$$PV = \frac{FV}{(1+i)^n} = \frac{34432}{(1+0.12)^1} = 30742.86$$

PV in 2nd year $= \frac{FV}{(1+i)^n} = \frac{39530}{(1+0.12)^2}$

$= 31513.07$

PV in 3rd year $= \frac{FV}{(1+i)^n} = \frac{39359}{(1+012)^3}$

$= 28014.96$

PV in 4th year $= \frac{FV}{(1+i)^n} = \frac{32219}{(1+0.12)^4}$

$= 20475.76$

Net Present Value = Sum of Present value of all cash inflows − Present value of all cash outflows

$= (30742.86 + 31513.07 + 28014.96 + 20475.76) - (100,000)$

$= 110746.65 - 100,000$

DATE: __/__/____

NPV = 10746.65

Profitability Index = Present Value of future cash inflows / Initial cash outflow

= 110746.65 / 100,000

PI = 1.11

CSS 2017 and CSS 2019

Introduction to Capital Budgeting

Ideally, a business should pursue all projects that enhance shareholder value, however, as the amount of capital available at any given time for new projects is limited, management needs to use some tools to determine which project will yield the most return over a period of time. For this purpose, capital budgeting is used to determine potential return of projects. Capital Budgeting is the process of identifying, analyzing, and selecting investment projects whose returns are expected to extend beyond a year.

DATE : __/__/____

Capital Budgeting Decision Techniques

1) Net Present Value (NPV)

The net present value method is a discounted cash flow approach to capital budgeting. The NPV is the sum of present values of all expected cash inflows and outflows if a project is undertaken. The present value of future cash flows is calculated at the cost of capital which is the required return from the investment.

Formula:

NPV = Present value of the net cash inflows − Initial cash outflow

If the present value of benefits exceed the present value of costs, the NPV is positive and vice versa. If the NPV is positive, the project should be accepted, however, if negative, the project should be rejected. If NPV is 0 or when the present value of benefits equals the present value of costs, other indirect benefits of the project should be analyzed and if the project has any, the project should be accepted. If not, it should be rejected.

DATE __/__/____

Example:

Cost of capital = 10%

Year	Project A Cash flows
0	(2000)
1	1000
2	806
3	600
4	200

NPV = 157.6

As NPV is positive, the project should be accepted.

Analysis

The NPV method takes into account the timing of cash flows or the time value of money which gives the value of the project in 'today's value'. Moreover, NPV is based on cash flows, not accounting profits, hence much more suitable than for investment appraisal. Lastly, NPV gives a single figure which provides a decision rule that is consistent with the objective of maximization of shareholders' wealth.

On the other, NPV can be difficult to understand as concepts of time value

DATE: __/__/____

of money and present value are applied. Additionally, as present values of cash flows are calculated using cost of capital or discount rate, there can be some confusion as to what the appropriate rate should be used to apply on any project.

2) Payback Period

The payback period (PBP) is a method of evaluating a project by measuring the time it will take to recover the initial investment.

Formula

PBP = Years before PBP occurs + Unrecovered amount / Cash flow during the recovery year

Example 1

Years	Cash flows
0	(2000)
1	1000
2	800
3	600
4	200

$$PBP = 2 + \frac{200}{600} = 2.33 \text{ years}$$

DATE: __/__/____

Example 2

Year	Cash flow
0	(80,000)
1	20,000
2	20,000
3	20,000
4	20,000

$PBP = \frac{80,000}{20,000} = 4$ years

Analysis

Payback Period is easy to understand and apply and can be used to compare similar investments. Moreover, it analyses cash flows not accounting profits and this method can be used to eliminate projects that take too long to pay back.

However, Payback Period method has many disadvantages, such as: as a stand-alone tool for evaluating an investment, this method has no explicit criteria for decision-making; this method does not take into account time value of money or any other important considerations regarding a project; lastly, this method ignores the cash flows after the payback Period.

DATE: __/__/____

Instead of the Payback Period, Discounted Payback period should be used which uses the present value of the project's expected cash flows, hence, it addresses one of the drawback of the payback period method.

3) Profitability Index (PI)

This index calculates the potential profit of the project.

Formula

$$PI = \frac{\text{Present Value of all Cash Flows}}{\text{Initial Investment}}$$

Analysis

The general rule is that profitability index should be greater than 1 which indicates that the project should be accepted. A ratio of less than 1 means loss, and thus the project should be rejected. The index is a useful tool for ranking investment projects and shows the value the project creates per unit of investment.

DATE: __/__/____

CSS 2016

Financial Markets

A financial market is any marketplace where buyers and sellers participate in the trade of assets and financial securities, instruments and commodities at low transaction costs and at prices that reflect supply and demand. Securities include equities/stock, bonds, amencies and etc. In today's world, electronic systems are used for such trading & similar to stock exchanges.

Some financial markets are very small, while others like the New York Stock Exchange witness the trade of billions of dollars daily.

Types of Financial Markets

Financial markets bring together organizations and individuals wishing to obtain finance and ~~to~~ to invest. The classification of financial markets depend on the type of instrument traded, their maturity and needs of different market participants. The types of financial markets include:

DATE: __/__/____

1) Money Market

Money markets are where financial instruments with a much shorter maturity are traded. The maturity of instruments in a money market is not longer than one year but can be even overnight. Money Market instruments and transactions include:

a) The Interbank Market

The Interbank market is where large-scale short-term lending and borrowing between banks take place. Banks that have a short-term funding deficit will borrow from a bank that has a short-term surplus. In Pakistan, the rate at which borrowing and lending between banks is done, is called the Karachi Inter-bank Offered Rate (KIBOR).

b) Treasury bills

There exists a market for Treasury bills or other bills of exchange which are financial instruments for a short-term debt. The buyer of the bill holds the bill until its maturity or when it should be redeemed. ~~Such treas~~ ~~Treasury bill save~~

DATE: __/__/____

c) ~~Certificates of Deposits~~

Treasury bills are usually issued by the government to the general public or banks and the money then goes to the treasury of the state. In the case of Treasury bills, there is no interest rate.

c) Certificates of Deposit (CDs)

A certificate of Deposit is a financial instrument issued by a bank to the general public on which interest is earned. At the end of the deposit period, the holder of the Certificate of Deposit is entitled to take the initial deposit with interest. A market exists for the trading of these instruments.

d) Repo Market

A repo market is a market for the sale and repurchase of short-term financial instruments, especially Treasury bills and government bonds with a very short term left to maturity. A repo transaction is the simultaneous agreement to sell a quantity of financial instruments and to buy them back again at a later date at a higher price.

DATE __/__/____

2) Capital Markets

Capital Markets are where financial instruments that have a life of more than one year are traded. The capital market includes financial instruments: equities and bonds, that raise capital or long-term investments needed by companies and governments. There are two sub-groups of the Capital Market:

a) Stock Markets

Also known as the Equity Market, the stock market provides companies with access to capital in exchange for giving investors a slice of ownership. In other words, it is a marketplace for buying and selling shares in companies that are a part of the exchange. Exchange is an entity that brings together buyers and sellers in an organized manner wherein stocks or shares are listed and traded. The stock market, or exchange, is one of the most vital components of a free-market economy and its functions are:

i) provide a system in which shares can be traded in a regulated manner.
ii) enforce rules of business conduct on market

DATE: __/__/____

participants to ensure fair dealing.

iii) Ensure that there is an efficient system for providing new financial information about companies to investors in the market.

iv) Provide a system for recording information about the prices at which shares are bought and sold, and providing these price information to participants in the market.

In Pakistan, the Securities and Exchange Commission of Pakistan (SECP) is the regulatory body overseeing the stock exchange or markets.

b) Bond Markets

Bonds are debt instruments issued by governments, companies, or government agencies, for a fixed period of time after which they are redeemed by the issuer. During the time, the issuer pays interest to the bondholders at a fixed interest rate.

Other than these two subgroups, capital markets exist in two forms:

c) Secondary markets
d) Primary Markets

DATE: __/__/____

Primary Markets	Secondary Markets
Also known as New Issues Market.	Also known as Aftermarket.
Investors buy securities directly from the company issuing them	Investors buy securities directly from the Brokers** in stock exchange.
Sell new stocks and bonds for the first time through an Initial Public Offering(IPO)*	Where securities are traded after the company has sold all the stocks.
Only new securities sold	Security can be sold multiple times.
Purchasing done through applications	Purchasing done through brokers
It is a direct type of purchasing	It is an indirect type of purchasing.
Company gains the amount on the sale of shares.	Investors gain the amount on the sales of shares.
Shares are sold at a fixed price	Price of shares fluctuates depending on the demand and supply forces.

* Initial Public offering is the price offered by a ~~private~~ company when it decides to sell its stocks to the public for the first time.

** A broker acts as an intermediary between seller and buyer.