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Answer Paper	
ADVANCED FINANCIAL MANAGEMENT	Duration: 70
Details: Test 2 (Ch-4, 6 and 7)	Marks: 40

Instructions:

- All the questions are compulsory
- Properly mention test number and page number on your answer sheet, Try to upload sheets in arranged manner.
- In case of multiple choice questions, mention option number only Working notes are compulsory wherever required in support of your solution
- Do not copy any solution from any material. Attempt as much as you know to fairly judge your performance.

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Ans.1

Economic analysis is used to forecast national income with its various components that have a bearing on the concerned industry and the company in particular. Gross national product (GNP) is used to measure national income as it reflects the growth rate in economic activities and has been regarded as a forecasting tool for analyzing the overall economy along with its various components during a particular period. Some of the techniques used for economic analysis are:

a) Anticipatory Surveys: They help investors to form an opinion about the future state of the economy. It incorporates expert opinion on construction activities, expenditure on plant and machinery, levels of inventory – all having a definite bearing on economic activities. Also future spending habits of consumers are taken into account.

In spite of valuable inputs available through this method, it has certain drawbacks:

- (i) Survey results do not guarantee that intentions surveyed would materialize.
- (ii) They are not regarded as forecasts per se, as there can be a consensus approach by the investor for exercising his opinion.

Continuous monitoring of this practice is called for to make this technique popular.

b) Barometer/Indicator Approach: Various indicators are used to find out how the economy shall perform in the future.

The indicators have been classified as under:

- (i) **Leading Indicators:** They lead the economic activity in terms of their outcome. They relate to the time series data of the variables that reach high/low points in advance of economic activity.

(ii) Roughly Coincidental Indicators: They reach their peaks and troughs at approximately the same in the economy.

(iii) Lagging Indicators: They are time series data of variables that lag behind in their consequences vis-a- vis the economy. They reach their turning points after the economy has reached its own already.

All these approaches suggest direction of change in the aggregate economic activity but nothing about its magnitude. The various measures obtained from such indicators may give conflicting signals about the future direction of the economy. To avoid this limitation, use of diffusion/composite index is suggested whereby combining several indicators into one index to measure the strength/weaknesses in the movement of a particular set of indicators. Computation of diffusion indices is no doubt difficult notwithstanding the fact it does not eliminate irregular movements.

Money supply in the economy also affects investment decisions. Rate of change in money supply in the economy affects GNP, corporate profits, interest rates and stock prices. Increase in money supply fuels inflation. As investment in stocks is considered as a hedge against inflation, stock prices go up during inflationary period.

c) Economic Model Building Approach: In this approach, a precise and clear relationship between dependent and independent variables is determined. GNP model building or sectoral analysis is used in practice through the use of national accounting framework.

The steps used are as follows:

(i) Hypothesize total economic demand by measuring total income (GNP) based on political stability, rate of inflation, changes in economic levels.

(ii) Forecasting the GNP by estimating levels of various components viz. consumption expenditure, gross private domestic investment, government purchases of goods/services, net exports.

(iii) After forecasting individual components of GNP, add them up to obtain the forecasted GNP.

(iv) Comparison is made of total GNP thus arrived at with that from an independent agency for the forecast of GNP and then the overall forecast is tested for consistency. This is carried out for ensuring that both the total forecast and the component wise forecast fit together in a reasonable manner.

(5 Marks)

Ans.2

Not agreed with the statement.

In Pass Through Certificate originator (seller of the assets) transfers the entire receipt of cash in the form of interest or principal repayment from the assets sold. Thus, these securities represent direct claim of the investors on all the assets that has been securitized through SPV.

Since all cash flows are transferred the investors carry proportional beneficial interest in the asset held in the trust by SPV.

It should be noted that since it is a direct route any prepayment of principal is also proportionately distributed among the securities holders.

In contrast to Pass Through Certificate in Pay Through Security, SPV debt securities are backed by the assets and hence it can restructure different tranches from varying maturities of receivables. In other words, this structure permits de-synchronization of servicing of securities issued from cash flow generating from the asset. Further, this structure also permits the SPV to reinvest surplus funds for short term as per their requirement.

(6 Marks)

Ans.3

(i) Let the weight of stocks of Economy A be expressed as w , then

$$(1 - w) \times 20\% + w \times 30\% = 21\%$$

i.e. $w = 0.1$ or 10%.

(ii) Variance of portfolio shall be:

$$(0.9)^2 (0.16)^2 + (0.1)^2 (0.30)^2 + 2(0.9) (0.1) (0.16) (0.30) (0.30) = 0.02423$$

Standard deviation is $(0.02423)^{\frac{1}{2}} = 0.15565$ or 15.56%.

(iii) The Sharpe ratio will improve by approximately 0.09, as shown below:

$$\text{Sharpe Ratio} = \frac{\text{Expected Return} - \text{Risk Free Rate of Return}}{\text{Standard Deviation}}$$

$$\text{Investment in stock of developed countries only: } \frac{20-6}{16} = 0.875$$

$$\text{Investment with inclusion of stocks of Economy A: } \frac{21-6}{15.56} = 0.964$$

(5 Marks)

Ans.4

Blockchain, often referred to as Distributed Ledger Technology (DLT), is a decentralized, peer-to-peer system for recording and verifying transactions without the need for intermediaries. It maintains an immutable ledger of transactions, ensuring transparency and security. The technology's applications span multiple industries:

1. Financial Services: Blockchain can streamline asset transactions, including physical and digital assets like real estate, vehicles, and securities, while reducing the need for intermediaries.

2. Healthcare: It enhances data security and privacy by eliminating third-party interference, making it ideal for secure data sharing in the healthcare sector.

3. Government: Blockchain can improve transparency in government systems, such as land and vehicle registration and e-voting, ensuring better monitoring and auditing of transactions.

4. Travel Industry: Blockchain simplifies money transactions, document management (e.g., passports), and loyalty programs, transforming the travel and hospitality industry.

5. Economic Forecasts: Through decentralized prediction markets and stock trading, blockchain enables more accurate financial and economic forecasting, aiding organizations in planning and decision-making.

However, blockchain technology also comes with risks:

(i) Differing Risk Appetites: Participants in a blockchain may have varying risk appetites, leading to conflicts in control monitoring. Establishing accountability becomes challenging in a decentralized network.

(ii) Reliability: The reliability of financial transactions depends on the underlying technology. Tampering with the consensus mechanism can render financial information inaccurate.

(iii) Lack of Central Authority: The absence of a central authority to enforce protocol amendments complicates process control activities. Public blockchain users may struggle to assess the effectiveness of implemented IT controls.

(iv) Information Overload: Blockchain involves frequent updates and large data volumes, posing challenges related to information overload. Finding qualified individuals for effective monitoring controls can be difficult.

Tokenization, on the other hand, involves converting tangible and intangible assets into blockchain tokens. It resembles securitization to some extent as both inject liquidity into otherwise illiquid assets, support diversification, enable trading, and offer income-generating opportunities through fee collection.

In summary, blockchain technology offers numerous applications but also presents risks related to governance, reliability, and monitoring. Tokenization and securitization share common goals of enhancing liquidity, diversification, trading, and income generation in financial markets.

(6 Marks)

Ans.5

(a) (i)

Probability	X Ltd. (%)	Y Ltd. (%)	1X2 (%)	1X3 (%)
(1)	(2)	(3)	(4)	(5)
0.20	-5	15	- 1.00	3.00
0.50	10	25	5.00	12.50
0.30	15	-10	4.50	- 3.00
Average return			8.50	12.50

Hence the expected return from X Ltd. = 8.50% and Y Ltd. is 12.50%

Probability	(X- \bar{X})	(X- \bar{X}) ²	1X3	(Y- \bar{Y})	(Y- \bar{Y}) ²	(1)X(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0.20	-13.50	182.25	36.45	2.50	6.25	1.25
0.50	1.50	2.25	1.125	12.50	156.25	78.125
0.30	6.50	42.25	12.675	-22.50	506.25	151.875
			50.25			231.25

$$\sigma^2_X = 50.25(\%)^2 ; \sigma_X = 7.09\%$$

$$\sigma^2_Y = 231.25(\%)^2 ; \sigma_Y = 15.21\%$$

(ii) In order to find risk of portfolio of two shares, the covariance between the two is necessary here.

Probability	(X- \bar{X})	(Y- \bar{Y})	2X3	1X4
(1)	(2)	(3)	(4)	(5)
0.20	-13.50	2.50	-33.75	-6.75

0.50	1.50	12.50	18.75	9.375
0.30	6.50	-22.50	-146.25	-43.875
				-41.25

$$\sigma^2_p = (0.5^2 \times 50.25) + (0.5^2 \times 231.25) + 2 \times (-41.25) \times 0.5 \times 0.5$$

$$\sigma^2_p = 12.563 + 57.813 - 20.625$$

$$\sigma^2_p = 49.751 \text{ or } 49.75(\%)$$

$$\sigma_p = \sqrt{49.75} = 7.053\% \text{ or } 7.05\%$$

$$E(R_p) = (0.5 \times 8.50) + (0.5 \times 12.50) = 10.50\%$$

	Return	Risk	Return to Risk Ratio of CV	Ranking
X Ltd.	8.50%	7.09	1.20	2
Y Ltd.	12.50%	15.21	0.82	3
Portfolio	10.50%	7.05	1.48	1

Risk of the portfolio is reduced by combining two shares.

(iii) For constructing the minimum risk portfolio the condition to be satisfied is

$$Y = \frac{\sigma^2_X - r_{XY}\sigma_X\sigma_Y}{\sigma^2_X + \sigma^2_Y - 2r_{XY}\sigma_X\sigma_Y} \text{ or } = \frac{\sigma^2_X \text{Cov}_{XY}}{\sigma^2_X + \sigma^2_Y - 2\text{Cov}_{XY}}$$

σ_X = Std. Deviation of X Ltd.

σ_Y = Std. Deviation of Y Ltd.

r_{XY} = Coefficient of Correlation between X Ltd. and Y Ltd.

Cov_{XY} = Covariance between X Ltd. and Y Ltd.

Therefore,

$$\% Y \text{ Ltd.} = \frac{50.25 - (-41.25)}{50.25 + 231.25 - [2 \times (-41.25)]} = \frac{91.50}{364} = 0.2514 \text{ or } 25.14\% \text{ or } 25\%$$

Y Ltd. = 25.14% or 25%

X Ltd. = 74.86% or 75%

Alternatively, it can also be computed as follows:

For constructing the minimum risk portfolio the condition to be satisfied is

$$X = \frac{\sigma^2_Y - r_{XY}\sigma_X\sigma_Y}{\sigma^2_X + \sigma^2_Y - 2r_{XY}\sigma_X\sigma_Y} \text{ or } = \frac{\sigma^2_Y \text{Cov}_{XY}}{\sigma^2_X + \sigma^2_Y - 2\text{Cov}_{XY}}$$

σ_X = Std. Deviation of X Ltd.

σ_Y = Std. Deviation of Y Ltd.

r_{XY} = Coefficient of Correlation between X Ltd. and Y Ltd.

Cov_{XY} = Covariance between X Ltd. and Y Ltd.

Therefore,

$$\% X \text{ Ltd.} = \frac{231.25 - (-41.25)}{50.25 + 231.25 - [2 \times (-41.25)]} = \frac{272.50}{364} = 0.7486$$

or 74.86% or 75%

Y Ltd. = 25.14% or 25%

X Ltd. = 74.86% or 75%

(8 Marks)

Ans.6

(i)

Date	1 Nifty	2 EMA for Previous	3 1 - 2	4 3 x 0.062	5 EMA 2 ± 4
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		Day			
2	21742	21500.00	242.00	15.00	21515.00
3	21665	21515.00	150.00	9.30	21524.30
4	21517	21524.30	-7.30	-0.45	21523.85
5	21462	21523.85	-61.85	-3.83	21520.02
8	21238	21520.02	-282.02	-17.49	21502.53
9	21182	21502.53	-320.53	-19.87	21482.66
10	20997	21482.66	-485.66	-30.11	21452.55
11	20926	21452.55	-526.55	-32.65	21419.90
12	20901	21419.90	-518.90	-32.17	21387.73

(ii) Conclusion – The market is bearish. The market is likely to remain bearish for short term to medium term if other factors remain the same. On the basis of this indicator (EMA) the investors/brokers can take short position.

(5 Marks)

MCQs:-

1. C) Elliot Wave Theory; the upward movements are impulsive waves, and the downward are corrective waves

Explanation: The investor is using Elliot Wave Theory, which identifies market movements as a series of impulsive waves (in the direction of the trend) and corrective waves (against the trend).

2. B) 14.2%

Explanation: Expected return of the portfolio A and B

$$E(A) = (10 + 16) / 2 = 13\%$$

$$E(B) = (12 + 18) / 2 = 15\%$$

$$R_p = \sum_{i=1}^N X_i R_i = 0.4(13) + 0.6(15) = 14.2\%$$

3. D) Rating Agency, tasked with evaluating the creditworthiness of assets and credit support in securitized deals.

Explanation: In the process of securitization, a key participant responsible for assessing the credit quality of obligors and evaluating the creditworthiness of the assets involved is the Rating Agency. These agencies play a vital role in determining the strength of the cash flow, the mechanism for timely payment of interest and principal, the credit quality of obligors, liquidity support, and the overall strength of the legal framework.

Rating agencies provide a credit rating to the securities issued in the securitization process, which helps investors gauge the level of risk associated with investing in these securities. The credit rating empowers the marketability of the securities and provides additional comfort to investors. This assessment by the rating agency is crucial for investors to make informed investment decisions in securitized instruments.

The other options mentioned (A, B, and C) describe important participants in the securitization process, but they are not specifically responsible for assessing the credit quality of obligors and evaluating the creditworthiness of the assets, as emphasized in the context.

4. C) Tactical Asset Allocation

Explanation: Tactical Asset Allocation is an asset allocation strategy in which the investor's risk tolerance is assumed to be constant, and the asset allocation is adjusted based on

expectations about capital market conditions. This strategy involves making changes to the portfolio's asset allocation to take advantage of short-term market opportunities or to protect against potential market downturns. The allocation is adjusted tactically based on the investor's outlook for the market in the near term.

5. C) Correlation & Regression Analysis

Explanation: Since the analyst is examining the relationship between multiple variables (GDP, industry sales, and company revenue) and needs forecasted values with reliability testing, multiple regression analysis is the most suitable technique.

Trend Analysis (A) would only assess a single variable over time.

Decision Tree Analysis (B) and Simulation Techniques (D) are more useful for probabilistic scenarios rather than determining interdependencies between multiple variables.

Thus, Option C is correct.

(5 x 1 = 5 Marks)

