CBCS SCHEME

USN 1 CR 23 BA 0 0 3

22MBAFM304

Third Semester MBA Degree Examination, Dec.2024/Jan.2025
Security Analysis and Portfolio Management

Time: 3 hrs. Max. Marks: 100

Note: 1. *Answer any FOUR full questions from Q.No.1 to Q.No.7.*
2. *Question No. 8 is compulsory.*
3. *M : Marks , L: Bloom's level , C: Course outcomes.*

			M	L	C
Q.1	a.	What are derivatives? Give example.	3	L1	CO1
	b.	Distinguish between investment and speculation.	7	L1	CO4
	c.	Describe the instruments of money market.	10	L1	CO6
Q.2	a.	Define the concept of Return and Risk.	3	L2	CO1
	b.	From the given information calculate Return of portfolio and Risk of portfolio.	7	L2	CO4
	c.	The probability distribution of ABB stock is given below :	10	L2	CO4
Q.3	a.	Compute current price of a preference share if dividend rate is 18% on 100 rupees par value and expected rate of return is 10%.	3	L2	CO3
	b.	The earning of ABC Ltd. is expected to grow at 6% per annum. The dividend expected on the share is Rupees 2. What is the price of Equity share if IRR is 14%.	7	L2	CO3
	c.	Calculate the Macauley duration and price of the bond. If face value of bond is Rs.100 coupon is 15%, Time of maturity is 6 years and yield is 18%.	10	L2	CO3
Q.4	a.	Explain any four oscillators?	3	L3	CO5
	b.	What is Efficient Market Hypothesis? Mention the assumptions of Efficient Market Hypothesis.	7	L3	CO1
	c.	Explain Fundamental Analysis.	10	L3	CO5

Q.1 b.

	Security A	Security B
Returns	12 %	15%
Weights	70 %	30 %
S.D	0.1	0.2

r A.B (Correlation co-efficient) = 0.5

Q.1 c.

State of Economy	Probability	Rate of Return %
Boom	0.3	16
Normal	0.5	11
Recession	0.2	06

Compute Expected Return and Standard deviation.

Q.5	a.	Explain Markowitz Model in brief.	3	L3	CO5
	b.	Explain efficient frontier with diagram.	7	L3	CO3
	c.	From the information given for X and Y companies stock and sensex, calculate the systematic and unsystematic risk for both companies stock.	10	L3	CO5

	X stock	Y stock	Sensex
Average return	0.15	0.25	0.06
Variance of return	6.3	5.86	2.25
β	0.71	0.27	
Correlation co-efficient	0.424		
Coefficient of determination (r^2)	0.18		

Q.6	a.	What is NAV?	3	L4	CO1
	b.	Calculate Sharpe's ratio from the following information of two portfolios:	7	L4	CO3

Portfolio	Return of portfolio	Risk free return	Portfolio risk
A	32	19	21
B	28	19	19

	c.	Explain the different types of mutual funds in India.	10	L4	CO5
Q.7	a.	What is Credit Risk?	3	L1	CO1
	b.	Explain determinants of Interest Rate.	7	L2	CO5
	c.	What is CAPM model? Explain assumptions of CAPM.	10	L3	CO5
Q.8		**Case Study:**			

Assume you are a portfolio manager based on the following details, determine the securities that are over priced and under priced also suggest the stocks to be purchased using SML.

Security	Actual Return	β	σ
A	0.33	1.7	0.5
B	0.13	1.4	0.35
C	0.26	1.1	0.4
D	0.12	0.95	0.24
E	0.21	1.05	0.28
F	0.14	0.7	0.2

Nifty Index 0.13
T. bill rate 0.09

20 L3 CO5

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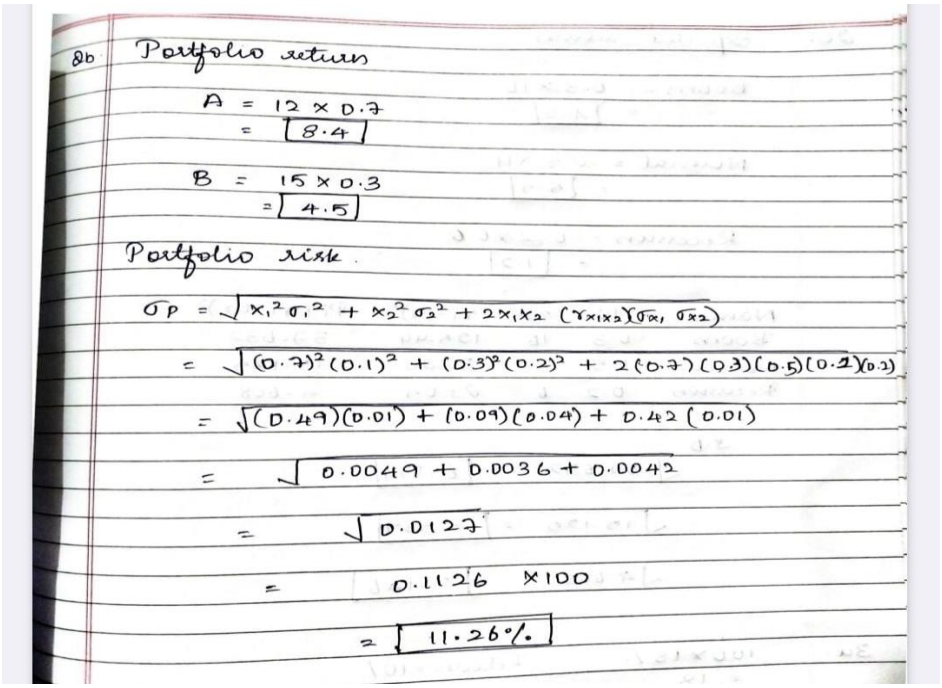
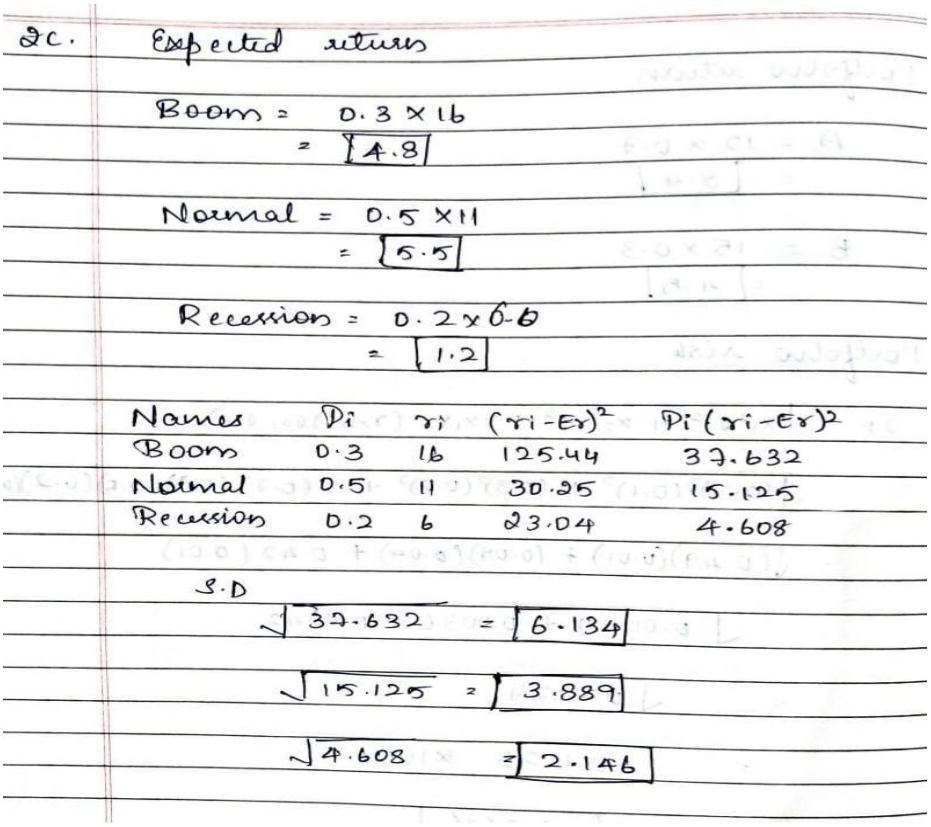
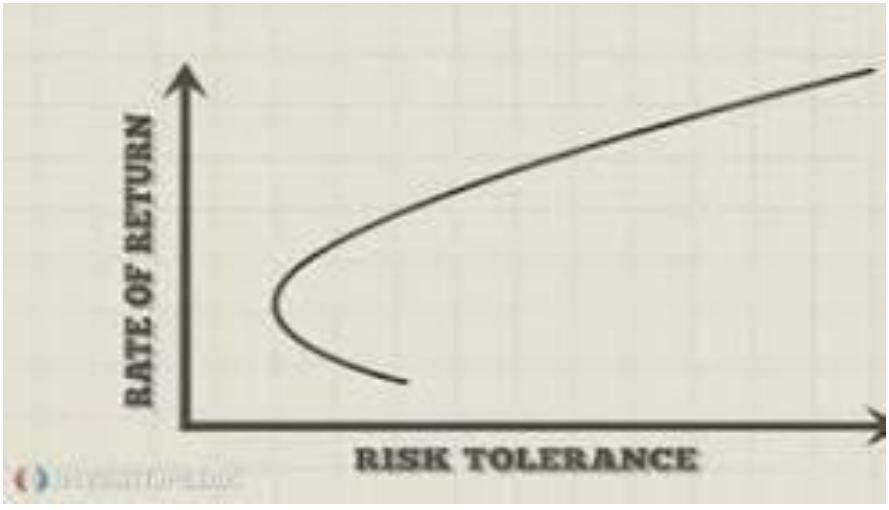
THIRD SEMESTER MBA DEGREE EXAMINATION – DEC.2024/ JAN 2025

SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT – 22MBAFM304

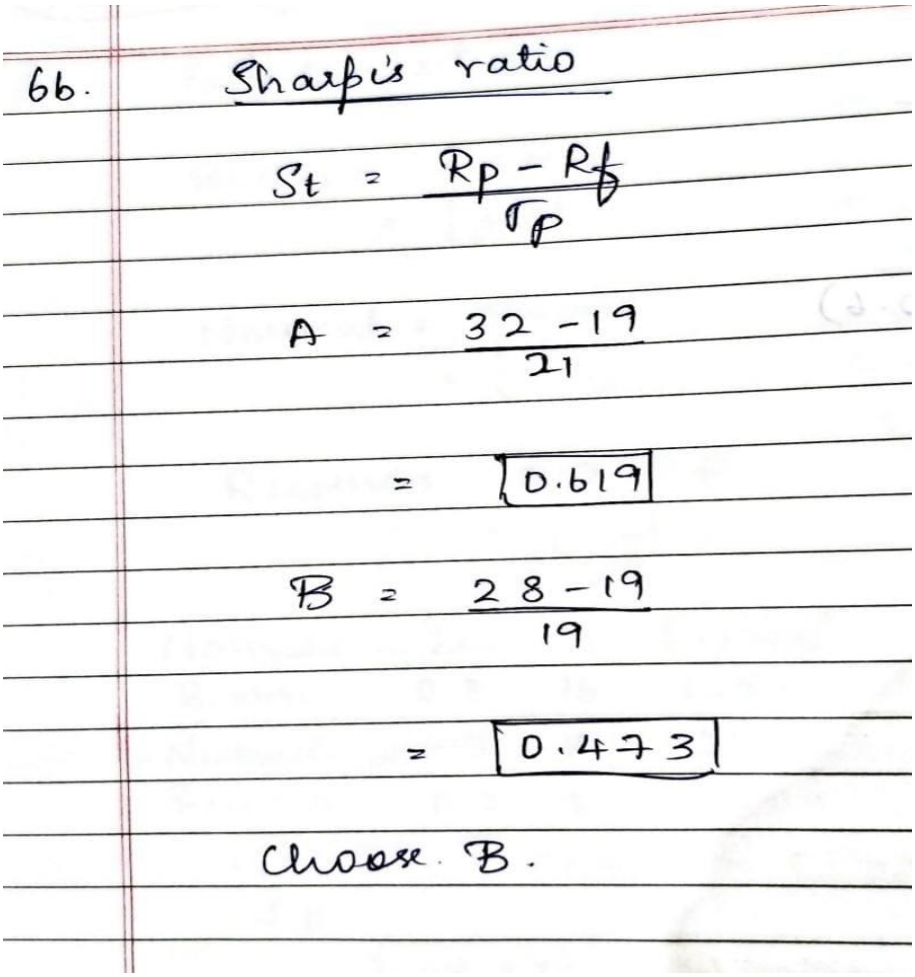
Q.NO		PARTICULARS	MARKS
1	a	Derivatives Derivative is a contract whose value is based on the price of something else, like a stock, commodity, or even an interest rate. Think of it as a bet on whether something will go up or down in price.	3
	b	Investment and Speculation Investment and speculation are both financial strategies used to generate returns, but they differ significantly in their objectives, time horizons, and risk profiles. Investment is a long-term approach aimed at growing wealth through steady returns, while speculation is a short-term strategy focused on capitalizing on market fluctuations for quick profits.	7
	c	Instruments of Money Market Money market instruments are short-term debt instruments with maturities of less than one year, designed to provide liquidity for investors and borrowers. They are traded in the money market, a financial market where these instruments are exchanged. Common money market instruments include Treasury bills, commercial paper, certificates of deposit, repurchase agreements, and bankers' acceptances.	10
2	a	Return and Risk In investing, risk and return are directly related; generally, higher returns are associated with higher risk, and lower returns are associated with lower risk. Risk refers to the possibility that an investment's actual return will differ from its expected return. Return is the profit or gain (or loss) from an investment.	3
	b	 . 8b Portfolio return A = 12 × 0.7 = 8.4 B = 15 × 0.3 = 4.5 Portfolio risk $\sigma_P = \sqrt{x_1^2\sigma_1^2 + x_2^2\sigma_2^2 + 2x_1x_2(r_{x1x2})(\sigma_{x1})(\sigma_{x2})}$ $= \sqrt{(0.7)^2(0.1)^2 + (0.3)^2(0.2)^2 + 2(0.7)(0.3)(0.5)(0.1)(0.2)}$ $= \sqrt{(0.49)(0.01) + (0.09)(0.04) + 0.42(0.01)}$ $= \sqrt{0.0049 + 0.0036 + 0.0042}$ $= \sqrt{0.0127}$ $= 0.1126 \times 100$ $= 11.26\%$	7

	c	 2c. Expected return Boom = 0.3 × 16 = 4.8 Normal = 0.5 × 11 = 5.5 Recession = 0.2 × 6.6 = 1.2 Names | Pi | ri | (ri-Er)² | Pi (ri-Er)² Boom | 0.3 | 16 | 125.44 | 37.632 Normal | 0.5 | 11 | 30.25 | 15.125 Recession | 0.2 | 6 | 23.04 | 4.608 S.D √37.632 = 6.134 √15.125 = 3.889 √4.608 = 2.146 .	10
3	a	The cost of preference shares, also known as the cost of preferred stock, is the rate of return a company pays to investors for issuing preference shares. It's calculated as the dividend paid divided by the net proceeds after deducting flotation costs. This cost is a crucial factor in determining a company's overall cost of capital. Price of Preference Shares will be Rs. 108 (118-10)	3
	b	The equity shares price of a company, like a stock, represents its current market value per share. This price is influenced by various factors, including company performance, market conditions, and investor sentiment. Price of Equity Share will be Rs. 125.	7
	c	The price of a bond is essentially the present value of its future cash flows. These cash flows include the periodic coupon payments and the face value (par value) repaid at maturity. Bond prices are influenced by factors like prevailing interest rates, time to maturity, and the creditworthiness of the issuer. Price of bond will be Rs. 1254.	10
4	a	Four Oscillators ▪ Relative Strength Index (RSI) ▪ Moving Average Convergence Divergence (MACD)	3

		▪ Stochastic Oscillator ▪ Commodity Channel Index (CCI) ▪ Williams %R.	
	b	Efficient Market Hypothesis The efficient market hypothesis (EMH), alternatively known as the efficient market theory, is a hypothesis that states that share prices reflect all available information and consistent alpha generation is impossible. According to the EMH, stocks always trade at their fair value on exchanges, making it impossible for investors to purchase undervalued stocks or sell stocks for inflated prices. Therefore, it should be impossible to outperform the overall market through expert stock selection or market timing. The only way an investor can obtain higher returns is by purchasing riskier investments. Assumptions The efficient-market hypothesis (EMH) is a hypothesis in financial economics that states that asset prices reflect all available information. A direct implication is that it is impossible to "beat the market" consistently on a risk-adjusted basis since market prices should only react to new information. 1. Rationality 2. Information is free 3. Price adjusts quickly 4. No individual investor can influence 5. No transaction cost.	7
	c	Fundamental Analysis Fundamental analysis in investment management involves evaluating an asset's intrinsic value by examining its underlying financial and economic factors. It helps investors determine if an investment is overvalued or undervalued, guiding them in making informed buy, hold, or sell decisions. Elaboration: Intrinsic Value: Fundamental analysis aims to find the "true" or "real" value of an asset, often based on a company's financial statements, economic conditions, and market trends. Assessing Company Health: It involves a deep dive into a company's financial statements (income statement, balance sheet, cash flow statement) to understand its profitability, solvency, and efficiency. Economic Factors: Beyond the company itself, fundamental analysis considers broader economic indicators like inflation, interest rates, and GDP growth, which can impact a company's performance. Market Trends: It also analyzes market conditions, including industry trends and competition, to assess the company's position within its sector. Overvalued vs. Undervalued:	10

		By comparing the intrinsic value with the current market price, investors can determine if a stock is overvalued (market price > intrinsic value) or undervalued (market price < intrinsic value). Long-Term Investments: Fundamental analysis is often favored by long-term investors who believe in the "value" of a company over time, as opposed to short-term market fluctuations. Complementing Technical Analysis: While fundamental analysis focuses on the intrinsic value of an asset, technical analysis uses price and volume data to identify patterns and predict future price movements. Investment Decisions: Ultimately, fundamental analysis helps investors make informed decisions about whether to buy, hold, or sell an investment, based on their assessment of its true worth.	
5	a	Markowitz Model The Markowitz model is a method of maximizing returns within a calculated risk. It is also called the Markowitz portfolio theory or modern portfolio theory. This model facilitates practical application; many new investors use this technique in capital markets.	3
	b	Efficient Frontier An efficient frontier is a set of investment portfolios that are expected to provide the highest returns at a given level of risk. A portfolio is said to be efficient if there is no other portfolio that offers higher returns for a lower or equal amount of risk.  	7

	c	Systematic risk = β^2 x Variance of mrt index Unsystematic risk : Total variance of security return – systematic risk Total risk = β^2 + Variance of mrt + unsystematic risk Stock X :- Systematic risk = $\beta^2 \times \sigma_m$ $= (0.71)^2 \times 2.25$ $= 1.134$ Unsystematic risk : 6.30 - 1.134 = 5.166 Total risk : 1.134 + 5.166 = 6.3 $\sigma_p^2 = \left[\left(\sum_{i=1}^{n} x_i \beta_i\right)^2 \sigma_m^2\right] + \left[\sum_{i=1}^{N} x_i^2 e_i^2\right]$ $\sigma_p^2 = \left[(0.5 \times 0.71) + (0.5 \times 0.27)\right]^2 2.25 +$ $\left[(0.5)^2 (5.166) + (0.5)^2 (5.696)\right]$ $\Rightarrow$ 3.256 Y :- Sys. risk : $(0.27)^2 \times 2.25$: 0.164 Un. risk : 5.86 - 0.164 : 5.695 Total risk : 0.164 + 5.695 : 5.859 .	10
6	a	Net Asset Value Net Asset Value (NAV) represents the per-unit value of a mutual fund, reflecting the market value of its holdings. It's calculated by subtracting the fund's liabilities from its total assets, then dividing by the number of outstanding units. This NAV is used to determine the price at which investors buy or sell fund units.	3
	b		7

		 66. Sharpe's ratio $S_t = \frac{R_p - R_f}{\sigma_p}$ $A = \frac{32 - 19}{21}$ $= \boxed{0.619}$ $B = \frac{28 - 19}{19}$ $= \boxed{0.473}$ Choose B. .	
	c	Different types of Mutual Funds Mutual funds are broadly categorized into four main types: equity funds, debt funds, hybrid funds, and money market funds. Within these broad categories, there are various sub-types and specialized funds designed for different investment objectives and risk profiles. 1. Equity Funds: Large-Cap Funds: Invest in stocks of large, established companies. Mid-Cap Funds: Invest in stocks of medium-sized companies. Small-Cap Funds: Invest in stocks of smaller, emerging companies. Multi-Cap Funds: Invest in a mix of large, mid, and small-cap stocks. Sectoral/Thematic Funds: Invest in specific sectors or industries like technology, healthcare, etc. Dividend Yield Funds: Focus on companies that pay high dividends. Value Funds: Invest in companies that are considered undervalued by the market. ELSS (Equity-Linked Savings Schemes): A type of tax-saving equity fund. 2. Debt Funds: Gilt Funds: Invest in government securities, considered safe.	10

		Corporate Debt Funds: Invest in bonds issued by companies. Credit Risk Funds: Invest in high-yield corporate debt. Liquid Funds: Invest in short-term money market instruments, like Treasury bills. Overnight Funds: Invest in very short-term debt instruments. 3. Hybrid Funds: Balanced Funds: Invest in a mix of equities and debt, aiming for a balance between growth and income. Conservative Hybrid Funds: Have a higher allocation to debt than equity. Aggressive Hybrid Funds: Have a higher allocation to equity than debt. 4. Money Market Funds: Invest in very short-term, low-risk debt instruments like Treasury bills and commercial paper.	
7	a	Credit Risk Credit risk is the financial loss a lender could face if a borrower defaults on a loan or fails to meet contractual obligations. It represents the chance that the lender will not receive the principal and interest as agreed, leading to disrupted cash flow and higher collection costs. Essentially, it's the risk of a borrower failing to repay a debt.	3
	b	Determinants of Interest Rate Interest rates are determined by the interplay of several factors, primarily the supply and demand for loanable funds, but also influenced by inflation expectations, monetary policy, and the risk associated with borrowing. Factors like creditworthiness, loan type, and term also play a role. Here's a more detailed breakdown: 1. Supply and Demand for Loanable Funds: Supply: The willingness of individuals, businesses, and governments to save and lend money influences the supply of loanable funds. Demand: The demand for loanable funds reflects the needs of businesses and individuals to borrow money for investment, consumption, or other purposes. Interaction: When demand for loanable funds exceeds supply, interest rates tend to rise, and vice versa. 2. Inflation Expectations: Impact: Higher expected inflation leads to higher interest rates because lenders want to be compensated for the erosion of purchasing power of their money.	7

		Central Banks: Central banks often adjust interest rates to manage inflation. 3. Monetary Policy: Central Bank Influence: Central banks can influence interest rates through tools like open market operations, adjusting the official policy rate, and managing reserve requirements. Impact: Changes in monetary policy can affect overall interest rate levels and the demand for credit. 4. Credit Risk: Risk Assessment: Lenders assess the risk of default when setting interest rates. Higher risk borrowers typically face higher interest rates. Factors: Factors like credit score, credit history, and employment type can impact risk assessment. 5. Other Factors: Tax Treatment: The tax implications of interest income and expense can influence interest rates. Loan Type and Term: The type of loan (e.g., mortgage, auto loan) and the loan term (e.g., 15-year mortgage vs. 30-year mortgage) can affect interest rates. Market Conditions: General economic conditions, such as the state of the economy and business confidence, can also influence interest rates.	
	c	CAPM Model 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 CAPM relies on assumptions like market efficiency, homogeneous expectations, a risk-free rate, a one-period investment horizon, and constant beta. These assumptions simplify the model and may not always reflect real-world complexities.	10

8		10

$$R_i = R_f + \beta_i (R_m - R_f)$$

$$A = 0.09 + 1.7 (0.13 - 0.09)$$

$$= 0.158$$

$$B = 0.09 + 1.4 (0.13 - 0.09)$$

$$= 0.146$$

$$C = 0.09 + 1.1 (0.13 - 0.09)$$

$$= 0.134$$

$$D = 0.09 + 0.95 (0.13 - 0.09)$$

$$= 0.128$$

$$E = 0.09 + 1.05 (0.13 - 0.09)$$

$$= 0.132$$

$$F = 0.09 + 0.70 (0.13 - 0.09)$$

$$= 0.118$$

Stk	~~Actual~~ return	Estimated return	Remark
A	0.33	0.158	Underpriced
B	0.13	0.146	Overpriced
C	0.26	0.134	Underpriced
D	0.12	0.128	Overpriced
E	0.21	0.132	Underpriced
F	0.14	0.118	Underpriced

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