



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF BUSINESS

DEPARTMENT OF ACCOUNTING & FINANCE

UNIVERSITY EXAMINATION FOR:

MASTER OF SCIENCE IN FINANCE

BFI 5102: THEORY OF FINANCE

END OF SEMESTER EXAMINATION

SERIES: APRIL 2022

TIME:3HOURS

DATE:14Apr2022

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass, and student ID

This paper consists of five questions. Attempt Question One (Compulsory) and any other **THREE** questions.

Do not write on the question paper.

QUESTION One

- a) Some Companies measure performance both “top line” growth and “bottom line” growth (i.e. growth in revenues and net income). Is this performance measure consistent with shareholder creation value? Why and why not? **(10 marks)**
- b) Suppose your production opportunity set in a world of perfect certainty consists of the following possibilities:-

| Project | Investment outlay | Rate of Return |
|---------|-------------------|----------------|
| A | \$100,000 | 8 |
| B | 100,000 | 20 |
| C | 200,000 | 4 |
| D | 300,000 | 30 |

- i. Graph the production opportunity in the $C_0 C_1$ framework. **(7marks)**
- ii. If the market rate of return is 10% draw in the capital line for the optimal investment decision. **(8marks)**

QUESTION Two

Interplanetary starship captain Jose' Ching has been pondering the investment of his recent pilot's bonus of 1000 Stenglers. His choice is restricted to two securities; Galactic steel, selling for 20 singles per Share, and Nova nutrients at 10 singles, per share. The future state of his solar system is uncertain. If there is a War with a nearby group of asteroids, Captain Ching expects Galactic steel will be worth only 4 stenglers per share. Nova Nutrients should sell at a future price of 6 stenglers per share in either eventuality.

- a) Construct the payoff table that summarizes the starship Captain's assessment of future pure securities implicit in the payoff table **(15 marks)**
- b) If the Captain buys only Nova Nutrients shares how many can he buy? **(5marks)**
- c) Suppose third security, Astro Ammo, is available and should be worth 28 stenglers per share if peace continues and 36 strengles per share if war breaks out. What would be the current price of Astro Ammo? **(5marks)**

Question Three

The Watro personal Computer Company is considering a merger to achieve better growth and profitability. It has narrowed two potential firms. The Abler Company, a producer of PBXs has a strong research department and a good record of internal profitability.

The Saben Company operates a chain of variety stores and has a high expansion rate. Data on all three firms are given below:-

| | Walter | Abler | Saben |
|--|--------|-------|-------|
| Book value per share | \$10 | \$10 | \$10 |
| Number of shares (millions) | 5 | 2.0 | 2.0 |
| Equity ratio | 1 | 1 | 1 |
| Internal profitability r (after tax) | .09 | 0.18 | .15 |
| Investment rate, K | 1.0 | 1.0 | 1.5 |
| Growth rate, $g = kr$ | 0.09 | 0.18 | .225 |
| WAAC | 9% | 11% | 12% |

Each firm pays 15% interest on its debt and has a 40% tax rate. Ten years of supernormal growth are forecast, followed by no more growth.

- What are the total assets of each firm? **(8marks)**
- What is each Company's NOI if it earns before tax $-r$ on total assets?
(7marks)

c) What is the indicated market value of each firm? **(10marks)**

QUESTION Four

Empirical studies find a forward exchange rate to be biased which means that future spots rates are different from those predicted by current forward rates. For example, if country B has a higher nominal interest rate structure than country A, this implies a higher expected future inflation in country B than in country A so that, the forward exchange rate of Country A should be at a premium over the current spot rate. The expected future spots rate should be higher than the current spot rate by the same percentage as the forward premium. Over a large number of empirical studies often the actual future spot rate is lower than the current spot rate.

a) What are some possible explanations for the forward rate bias? **(7marks)**

b) How do the forecasters seek to gain from the bias? **(8marks)**

c) You are given the prices of products in two countries as shown below:-

| | <u>Products</u> | |
|-----------|-----------------|-----|
| | X | Y |
| Company A | \$3 | \$1 |
| Company B | FC12 | FC6 |

At an exchange rate of 5 foreign currency units per dollar, describe the pattern of exports and imports between these two countries. **(10marks)**

QUESTION Five

In a study on a corporate disclosure by a special committee of the Securities and Exchange Commission, we find the following statement (177, DC)

“The efficient market hypothesis” - which asserts that the current price of a security reflects all publically available information - even if valid, does not negate the necessity of mandatory disclosure of the system. This theory is concerned with how the market reacts to disclose information and is silent to the optimum amount of information required or whether that optimum should be achieved on a mandatory or voluntary basis, market forces alone are insufficient to cause all material information to be disclosed.

Two questions that arise is:-

- a) What is the difference between efficient markets for securities and efficient market for information? **(10markst)**
- b) What criteria define “ material information” **(15marks)**



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