EC5321: Investment & Portfolio Management

Solution for Problem set 3

Q1.a) Differentiate between Value Stocks & Growth Stocks.

- Value stocks
  - are those stocks that tend to trade at lower prices relative to their fundamentals.
  (example: dividends, earnings & sales) &
  - thus considered undervalued by fundamental analysts.
  * common characteristics of such stocks including
    - → a high dividend yield
    - → low price-to-book ratio for [redacted].
    - → low price-to-earnings ratio.

- Growth stocks
  - are stocks of companies [redacted] that generate substantial & sustainable positive income & whose revenue & earnings are expected to increase at a faster rate than the average company within the same industry.

* A growth company typically has some sort of competitive advantage
  (- a new product
  - a breakthrough patent
  - overseas expansion)
  that allows it to outperform competitors.

- Usually pay smaller dividends, or no dividends at all, as the companies tend to be in the technology sector of the economy.
  For example: Amazon, Google & Tesla are growth companies, with growth stocks.

b) What is a Contrarian strategy?

- Contrarian strategy
  - is an investment style that goes against prevailing market trends by buying poorly performing assets & then selling when they perform well.
  - is the opposite of crowd behaviour
    - (buying when price is going up & selling when price is going down).

Question 2:

The risk free rate of return, r_f is 1.5%, and the return on the market, r_m is 3%.
Suppose the beta of stock A is 1.2 and the beta of stock B is 2.

a) Find the expected return according to the CAPM, on stocks A & B.

- r_f = the risk free rate of return
- r_m = return on the market
- $E(r_i)$ = the expected return

$$E(\tilde{r}_i) = r_f + \beta_i (E(\tilde{r}_M) - r_f)$$

$$E(r_A) = 1.5\% + 1.2(3-1.5)\% = 3.3\%$$
$$E(r_B) = 1.5\% + 2(3-1.5)\% = 4.5\%$$

b) Now suppose that given the traded prices of stocks A & B, you find that the actual realized returns of these two stocks are $r_A = 4.3\%$ & $r_B = 4\%$.
How should you invest in these two stocks?

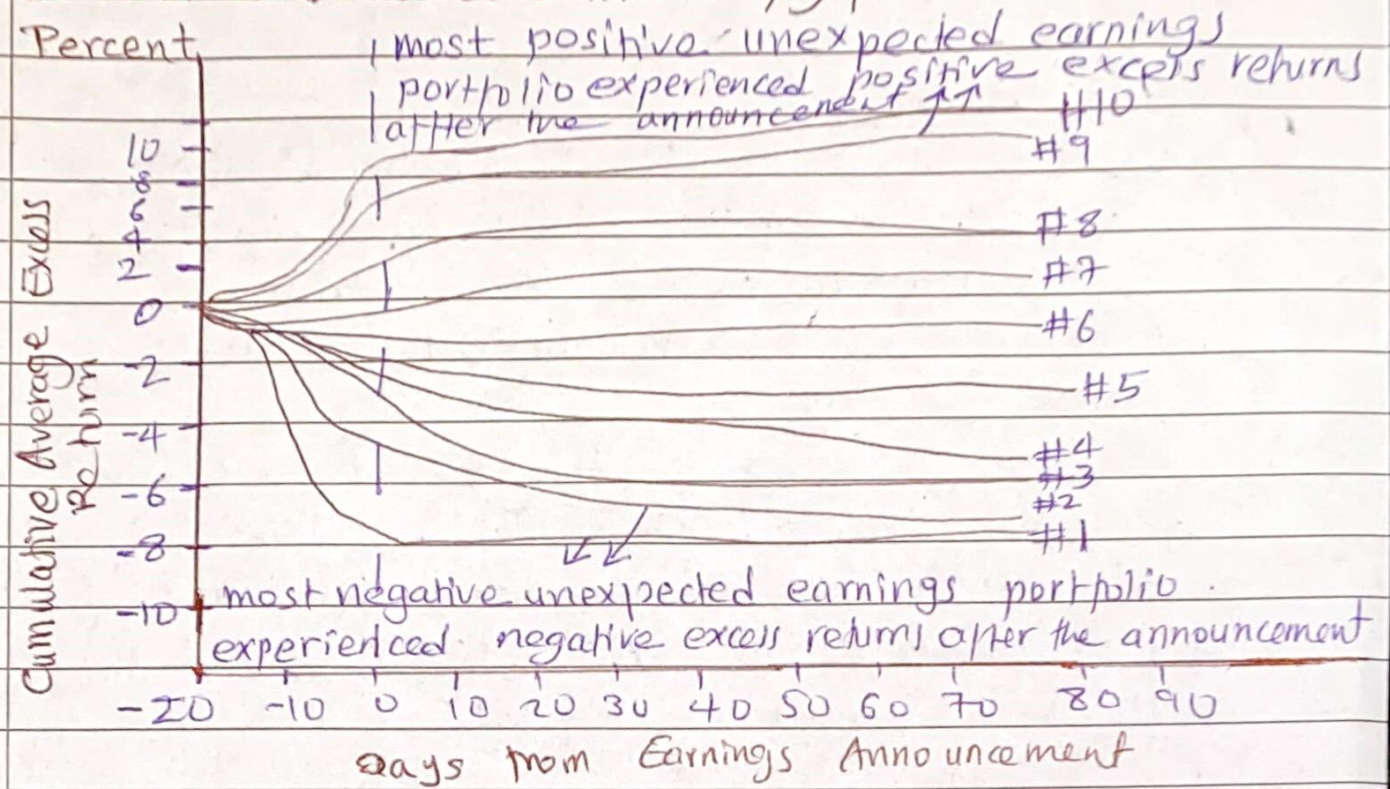
Alpha of stock A = $r_A - E(r_A) = 4.3 - 3.3 = 1\%$
- A has a positive alpha, so we should buy it

Alpha of stock B = $r_B - E(r_B) = 4 - 4.5 = -0.5\%$
- B has a negative alpha so we should short sell it, or if we have it in our portfolio, we should sell it.

Problem set 3

Question 3

Look at the figure below and interpret what is happening to returns. What does this imply for the EMH?



The figure shows the behaviour of comulative abnormal returns (CAR) in response to earnings announcements, and comes from a study by Rendleman Jr, Jones and Latane (1982).

- They find that while the market reacts to earnings surprises quickly, with prices seeing a large abnormal return on the earnings announcement day (time 0),
- they continue to move in the direction of their instantaneous change after the announcement data.
- That is, they exhibit momentum, even after earnings information become public.
- The adjustment is gradual, resulting in a sustained period of abnormal returns.
- (ie, price adjustment is sluggish; the market commonly underreacts to the quarterly earning announcements!
- This suggests the validity of an "earnings momentum" strategy (buying stocks that just had a positive earning surprise, and shorting stocks that just had a negative earnings surprise). Such predictable & persistent trends are

incompatible with the semi-strong form of the EMH. Therefore, we infer that this market is not efficient in the semi-strong form.

Question 4

Use the data in the Excel spreadsheet JKSE, which contains the daily price of the Jakarta Stock Exchange index, to carry out a runs test on price changes.
Determine whether the prices/returns follow a random walk.
See the workings in the Excel spreadsheet in Moodle, entitled 'Runs Test on JKSE'
- Pay particular attention to the function used to calculate the number of runs, R, the numbers of positive runs n1 and negatives runs n2.

Our conclusion is that the Jakarta Stock Exchange index does not show any significant pattern in price movement that allows us to make abnormal returns. Returns are random, and the stock exchange could be efficient in the weak-form.