Old Exam Questions
Market Efficiency

1. You are checking for the existence of autocorrelation as part of a test of the weak form of the Efficient Markets Hypothesis. You estimate the following regression:

$$\widehat{r_{t,i}} = -.02 + .4 \times r_{t-1,i}$$

   Assuming that all regression coefficients shown are statistically significant, what can you conclude from this regression?
      A. Autocorrelation exists: evidence of the momentum effect
      B. Autocorrelation exists: evidence of the reversal effect
      C. No autocorrelation present
      D. Need more information

2. Suppose that semi-strong form efficiency holds. Analysts believe that the price of Yellow Industries is 10% below its true value due to its inefficient management structure. The board decides to revamp the corporate hierarchy and resolve these issues in a meeting on December 11th. They decide to announce the news in a press release on the morning of December 16th. What would you expect the daily abnormal return to be on the firm's stock on December 17th?
      A. -10%
      B. 0
      C. 10%
      D. A different value

3. You are testing the semi-strong version of the Efficient Markets Hypothesis using an event study. You have three firms in your sample. On the day prior to the announcement, you observe alphas of 3%, 5%, and 1%. On the day of the announcement, you see alphas of -1%, 11%, and 8%. Using this information, what is the CAR for the announcement day?
      A. 3%
      B. 6%
      C. 9%
      D. 18%
      E. 27%

4. Which form(s) of the Efficient Markets Hypothesis include all publicly available information, such as 10-Ks and other SEC filings?
   A. All three forms
   B. Semi-strong and strong forms
   C. Semi-strong form
   D. Strong form
   E. Weak form

5. When we are testing the semi-strong form of the Efficient Markets Hypothesis, we choose to use the Fama French 3 factor model. We find conflicting evidence, but we acknowledge that our (lack of) results might have been influenced by our choice of model. This is an example of _____.
   A. Limits to arbitrage
   B. The joint hypothesis problem
   C. The luck issue
   D. The magnitude issue
   E. The selection bias issue
   F. None of the above

6. You ran a regression to test for autocorrelation. You find that:

$$\widehat{r_{t,i}} = -0.5 + 1.2r_{t-1,i}$$

What relationship in the data do these results suggest?
   A. Momentum effect
   B. Reversal effect
   C. Semi-strong form efficiency
   D. Weak form efficiency

7. You are analyzing the effect of CEO termination announcements on stock returns. You have gathered data on two firings that matched the criteria you were looking for. Using the CAPM model, you ran regressions to estimate the returns for these stocks around the sample period. From there, you calculated alphas for each stock on each day. These results are presented in the table.

Event Day	HR Depot	Slate Cutlery
-1	0%	2%
0	2%	-4%
1	6%	2%
2	8%	-12%

What is the cumulative abnormal return at day 1?
   A. 2%
   B. 4%
   C. 5%
   D. 6%
   E. A different value

8. Post earnings announcement drift suggests a violation of which form(s) of the Efficient Markets Hypothesis?
   A. Semi-strong form
   B. Strong form
   C. Weak form
   D. A and B
   E. All of these
   F. None of these

9. Technical analysis is unable to generate abnormal returns under which form(s) of the Efficient Markets Hypothesis?
   A. Semi-strong form
   B. Strong form
   C. Weak form
   D. A and B
   E. All of these
   F. None of these

10. The board of Judgy Judy's Cleaning voted to accept a takeover offer on April 30th. They plan to announce the news at a joint press conference with the bidder firm on May 10th. Under strong form efficiency, any abnormal returns should occur on _____. Under semi-strong form efficiency, any abnormal returns should occur on _____.
    A. April 30th; April 30th
    B. April 30th, May 10th
    C. May 10th; May 10th
    D. May 10th; April 30th
    E. None of these

11. Which of the following is **_NOT_** an issue that we encounter when testing for semi-strong efficiency?
    A. Joint hypothesis problem
    B. Luck issue
    C. Magnitude issue
    D. Selection bias issue
    E. All of these are issues that we encounter

12. You are testing for weak form efficiency. Your regression provides the following output:

$$\widehat{r_{t,i}} = .02 - .75r_{t-1,i}$$

What relationship in the data do these results suggest?
    A. Momentum effect
    B. Reversal effect
    C. Semi-strong form efficiency
    D. Weak form efficiency

13. You have gathered some data on firms whose CEO quit to join the circus. You have two such firms, presented in this table:

Day	LoserCo	Money Pit Holdings
-1	1%	-1%
0	-5%	-7%
1	2%	4%
2	0%	2%

What would you calculate is the cumulative abnormal return of these firms at day 1?
    A. -6%
    B. -3%
    C. 0%
    D. 3%
    E. A different value

14. Suppose that the **_strong_** form of the Efficient Markets Hypothesis holds. Consider a firm that is cutting its dividend. When would we expect to see an abnormal return?
    A. When the board votes to approve the reduced dividend
    B. When the CEO presents the plan to the board
    C. When the financial press reports that sources have indicated a cut is imminent
    D. When the firm issues a press release explaining the move

15. Post-earnings announcement drift was a violation of what form(s) of the Efficient Markets Hypothesis?
    A. Semi-strong form
    B. Strong form
    C. Weak form
    D. Both semi-strong and strong form
    E. Both semi-strong and weak form
    F. All forms

16. When discussing weak form efficiency, we saw evidence of mean reversion. In particular, we saw evidence of the _____ effect in the short term and the _____ effect in the longer term.
    A. Momentum; Random walk
    B. Momentum; Reversal
    C. Reversal; Momentum
    D. Reversal; Random walk

17. Which of the following is **_NOT_** an issue that we have to deal with when testing market efficiency?
    A. Joint hypothesis problem
    B. Luck issue
    C. Magnitude issue
    D. Selection bias
    E. All of these are issues we face

18. Why might a mispricing we find persist through time?
    A. My idiot finance prof screwed up
    B. The market is irrational
    C. The mispricing is less than the transaction costs to exploit it
    D. They don't: they always disappear once discovered

19. You are testing the weak form of the Efficient Markets Hypothesis. Your regression results are all statistically significant, and your regression equation is:

$$r_t = -.02 + .01r_{t-1} + 0$$

    What is this evidence of?
    A. Momentum
    B. Random Walk
    C. Reversal
    D. Surprise

20. The presence of mean reversion in security prices represents a violation of which form(s) of the Efficient Markets Hypothesis?
    A. Semi-strong form
    B. Strong form
    C. Weak form
    D. Both semi-strong and strong forms
    E. Both semi-strong and weak forms
    F. Both strong and weak forms
    G. Semi-strong, strong, and weak forms

21. You've gathered data on three firms who terminated their dividends. Using the 3 Factor Model, you calculated the abnormal return for each firm on each day surrounding the announcement. These abnormal returns are presented in the following table:

Day	PIG	SOO	EY
-3	4%	-2%	1%
-2	1%	0%	5%
-1	-1%	4%	3%
0	-4%	-8%	-3%
1	-5%	-2%	-2%

What is the cumulative abnormal return for day 0? Day 1?
   A. Day 0: -5%;   Day 1: -3%
   B. Day 0: -4%;   Day 1: 4%
   C. Day 0: 0%;   Day 1: -3%
   D. Day 0: 5%;   Day 1: 3%
   E. Different values

22. We argued that the market is generally efficient for "regular" people. Which of the following is a reason why they might choose to still pay attention to their portfolio?
   A. Choosing a risk level
   B. Diversification
   C. Taxes
   D. Choosing a risk level and diversification
   E. Choosing a risk level and taxes
   F. Diversification and taxes
   G. All of these

23. Suppose the market is strong form efficient. Analysts believe that the current CEO of Miles Logistics is so bad that he is dragging down the firm's stock price by 5%. The board holds a secret meeting on the evening of December 13th, where they decide to fire the CEO. They plan to announce the transition on the morning of December 20th. What would you expect the abnormal return on the firm's stock to be on December 14th?
   A. -5%
   B. 0%
   C. 2.5%
   D. 5%

24. You ran a regression to check for autocorrelation. Your results are:

$$r_{t,i} = 3 - 2r_{t-1,i} + 0$$

Suppose that all regression coefficients are statistically significant. What is this evidence of?
   A. Efficiency
   B. Momentum
   C. Reversal
   D. Something else

25. [Conceptual] Assume that the market is semi-strong efficient. BearCo's current CEO is highly skilled, and his presence increases the firm's value by approximately 10% based on analyst reports. However, his demeanor has created enemies, and BearCo's board of directors just held a closed door meeting in which they voted for his termination. They plan to announce the decision after the close of trading on April 1st. What would be the approximate abnormal return on the stock on April 2nd?
   A. -10%
   B. 0%
   C. 5%
   D. 10%
   E. None of these make sense

26. [Conceptual] You are testing weak form efficiency. You ran a regression model checking for autocorrelation. The Excel add-in you used reports that your estimated regression equation was:

$$r_{i,t} = 2$$

Assuming that all regression coefficients are statistically significant, what does this regression tell you?
   A. Evidence of mean reversion
   B. Evidence of momentum
   C. Evidence of reversal
   D. Support for weak-form efficiency

27. [Quantitative] You are attempting to find to exploit major app release announcements. You have gathered data on a handful of app developers, and you've calculated their alphas, which you've assembled in the following table:

Day	Pokey Productions	Flappy Corp.	Tinendo
-2	2%	1%	-3%
-1	4%	-2%	1%
0	8%	7%	3%
1	2%	5%	-9%

What is the cumulative abnormal return on the announcement day?
A. 0%
B. 1%
C. 6%
D. 7%
E. A different value

28. [Conceptual] The presence of mean reversion indicates evidence of _____ in the short term combined with_____ in the long term.
A. Momentum; Random walk
B. Momentum; Reversal
C. Random Walk; Momentum
D. Random walk; Reversal
E. Reversal; Momentum

29. [Conceptual] Which of the following event study results is **_LEAST_** consistent with a semi-strong efficient market? Assume that the events being studied are good news.
A. $\overline{\alpha_t} > 0$ for $t < 0$
B. $\overline{\alpha_t} > 0$ for $t = 0$
C. $\overline{\alpha_t} > 0$ for $t > 0$
D. $CAR_T > 0$ for $t < 0$
E. $CAR_T > 0$ for $t = 0$
F. $CAR_T > 0$ for $t > 0$

30. [Conceptual] When testing efficiency, we must use an asset pricing model. Since this model is most likely not correct, this casts doubt on our analysis. This best describes which issue from our class discussion?
    A. Joint hypothesis problem
    B. Luck versus skill issue
    C. Magnitude issue
    D. Selection bias problem
    E. A different problem

31. [Conceptual] Fundamental analysis would fail to generate abnormal returns under which form(s) of the Efficient Markets Hypothesis?
    A. Semi-strong form
    B. Strong form
    C. Weak form
    D. Semi-strong form and strong form
    E. Weak form and semi-strong form
    F. Weak form and strong form
    G. All of them

32. [Conceptual] You manage a $100,000 portfolio. Suppose that you wanted to implement a momentum strategy on a monthly basis. You've found that you can generate a positive alpha of 3% per month by buying the top 100 performers and shorting the lowest 100 performers in the S&P 500 from the previous month. At the beginning of each month, you liquidate the previous month's portfolio and replace it in the same manner. If you pay a flat $10 commission on every trade (buy or sell), could you exploit this mispricing?
    A. No
    B. Yes

33. [Conceptual] We argued that the market is efficient for a "regular" person. Given this, which of the following is ___NOT___ a valid reason for them to pay attention to their portfolio?
    A. Choosing a risk level
    B. Diversifying
    C. Managing tax exposure
    D. Maximizing abnormal returns
    E. All of these are reasons for them to pay attention

34. [Conceptual] You ran a regression testing for autocorrelation. You find the following regression equation:

$$r_{i,t} = -1 + .5r_{i,t-1} + 0$$

Assuming that any coefficients are statistically significant, what is this regression evidence of?
   A. Momentum
   B. Reversal
   C. Semi-strong form efficiency
   D. Strong form efficiency
   E. Weak form efficiency

35. [Conceptual] You are conducting an event study on the effect of CEOs absconding to the Caiman Islands on firm returns. You have calculated the following average daily alphas:

Day	Average Daily Alpha
-1	0%
0	5%
1	5%
2	5%
3	5%

Assume that any trends continue and are statistically significant. According to our class discussion, what would this be evidence of?
   A. Overreaction
   B. Semi-strong form efficiency
   C. Strong form efficiency
   D. Underreaction/Delayed reaction
   E. Weak form efficiency

36. [Conceptual] You find evidence of under-reactions to merger announcements. Which form(s) of the efficient market hypothesis might still be valid?
   A. Semi-strong form
   B. Strong form
   C. Weak form
   D. Both weak and semi-strong form
   E. None of them

37. [Conceptual] You are testing the weak form of the Efficient Markets Hypothesis. To do so, you estimate the following regression:

$$\widehat{r_{t,i}} = 3 - 2 \times r_{t-1,i} + 0$$

Assuming that all regression coefficients shown are statistically significant, what can you conclude from this regression?
   A. Evidence of the momentum effect
   B. Evidence of the reversal effect
   C. Evidence of semi-strong form efficiency
   D. Evidence of strong form efficiency
   E. Evidence of weak form efficiency

38. [Quantitative] You have gathered data on firms whose CEOs spontaneously combusted. You found 3 such firms. You ran a Fama French 3 factor model regression for each and calculated alphas, which are presented in the following table:

Day	MadeUp Industries	HypothetiCorp	B & S Holdings
-1	0%	1%	2%
0	-4%	-6%	-2%
1	-1%	1%	3%
2	-2%	-4%	3%
3	1%	5%	0%

What is the cumulative abnormal return on day 2?
   A. -3%
   B. -2%
   C. -1%
   D. 0%
   E. A different value

39. [Conceptual] Which of the following is **_NOT_** a reason that we might question our findings that the market is inefficient?
   A. Joint hypothesis problem
   B. Luck versus skill
   C. Magnitude issue
   D. Selection bias
   E. All of these are reasons to question our findings

40. [Conceptual] Which of the following is **_LEAST ACCURATE_** regarding using a first order auto-regressive model to represent the market?
    A. Acts similar to a random walk
    B. Allows for mean reversion
    C. More robust model of price movements
    D. Potentially reflects reality better
    E. Satisfies weak form efficiency

41. [Conceptual] Which of the following is **_MOST ACCURATE_** regarding the joint hypothesis problem?
    A. Calls our evidence of semi-strong form efficiency into question
    B. Calls our evidence of semi-strong form inefficiency into question
    C. Calls our evidence of weak form efficiency into question
    D. Calls our evidence of weak form inefficiency into question
    E. All of these are accurate

42. [Conceptual] Suppose that you found evidence contradicting weak form efficiency. Why might this persist?
    A. It is too large to take advantage of
    B. You actually found a new risk factor
    C. Your trading makes it worse
    D. All of these
    E. None of these

43. [Conceptual] You are conducting an event study on firms that cut their dividend. You have already estimated alphas and calculated the cumulative abnormal returns. You have the following data:

Day	CAR_T
-3	0%
-2	1%
-1	0%
0	-7%
1	-7%
2	-6%
3	-7%

Based on our class discussion, what does this look like evidence of?
   A. Delayed reaction
   B. Over-reaction
   C. Semi-strong efficiency
   D. Under-reaction
   E. None of these

44. [Conceptual] Under which form(s) of the Efficient Markets Hypothesis would a technical analyst be able to earn abnormal returns?
   A. Semi-strong form
   B. Strong form
   C. Weak form
   D. Semi-strong and weak form
   E. None of them

45. [Conceptual] Which form of efficiency is characterized by low transaction costs?
   A. Allocational efficiency
   B. Informational efficiency
   C. Operational efficiency
   D. Strong form efficiency
   E. Weak form efficiency

46. [Conceptual] A US-based medical device firm had a breakthrough late on the night of October 25th! They managed to create a tool that promises to revolutionize tumor excision. The firm expects royalties from the tool to increase firm value by 50%. They plan to announce the product on the morning of October 30th. If the market is strong form efficient, on what day would you expect to see a positive alpha on the firm's stock?
    A. October 25th
    B. October 26th
    C. October 30th
    D. October 31st
    E. None of these

47. [Conceptual] Mean reversion is a phenomenon consisting of reversals in the _____ and momentum in the _____.
    A. Long run; Long run
    B. Long run; Short run
    C. Short run; Long run
    D. Short run; Short run
    E. None of these

48. [Quantitative] You have gathered data on firms who announced mergers during an eclipse. You found 3 such firms. You ran a CAPM regression for each and calculated alphas, which are presented in the following table:

Day	ThorGreen	Daskyx	ColaCreek
-2	2%	0%	-1%
1	3%	2%	-1%
0	-8%	-9%	-5%
1	2%	0%	1%
2	4%	-2%	1%

What is the average daily alpha on day -1?
    A. 0%
    B. 0.33%
    C. 0.67%
    D. 1.33%
    E. A different value

49. [Conceptual] Which of the following results is **_LEAST_** consistent with semi-strong efficiency? Assume that the events being studies are bad news for the firm.

A. $\overline{\alpha_t} < 0$ for $t < 0$

B. $\overline{\alpha_t} < 0$ for $t = 0$

C. $\overline{\alpha_t} < 0$ for $t > 0$

D. $CAR_T < 0$ for $t < 0$

E. $CAR_T < 0$ for $t > 0$