Chapter 4: Market efficiency

Answers to self test questions

1. (b) The arrival of new information
2. (c) A market in which prices always fully reflect available information
3. (a) The difference between realized and expected returns
   The expected returns can be (but are not necessarily) formulated with the CAPM.
4. Correct answers are:

(a)	Excess returns have zero expectation	True
(b)	Excess returns have constant variance	False
(c)	Excess returns are identically and independently distributed (iid)	False
(d)	Expected future prices equal current prices	False
(e)	Excess returns are not autocorrelated	True

5. Correct answers are:

(a)	Excess returns have zero expectation	True
(b)	Excess returns have constant variance	False
(c)	Excess returns are identically and independently distributed (iid)	False
(d)	Expected future prices equal current prices	False
(e)	Excess returns are not autocorrelated	True

   No model implies that expected future prices equal current prices, but the martingale and random walk model (with drift) imply that *properly discounted* expected future prices equal current prices.

6. Correct answers are:

(a)	Excess returns have zero expectation	True
(b)	Excess returns have constant variance	True
(c)	Excess returns are identically and independently distributed (iid)	True
(d)	Expected future prices equal current prices	False
(e)	Excess returns are not autocorrelated	True

   No model implies that expected future prices equal current prices, but the martingale and random walk model (with drift) imply that *properly discounted* expected future prices equal current prices.

7. Correct answers are:

(a)	The market is always right	False
(b)	There should be no autocorrelation in excess returns	True
(c)	People cannot quickly get rich on the stock market	False
(d)	Security prices adjust quickly and unbiassedly to new information	True

8. Correct answers are:

(a)	Investment strategies based on historical information give no positive excess returns	True
(b)	There should not be large price fluctuations without apparent reason	False
(c)	Differences in excess returns between (groups of) investors are not persistent	True
(d)	One stock is as good any other, so selection is useless	False
(e)	There should be no autocorrelation in returns	False

9. Correct answers are:

(a)	There should be no autocorrelation in excess returns	True
(b)	Security prices adjust quickly and unbiassedly to new public information	False
(c)	Investment strategies based on historical price information give no positive excess returns	True
(d)	Differences in excess returns between (groups of) investors are not persistent	False
(e)	People cannot quickly get rich on the stock market	False
(f)	Insider trading gives no positive excess returns	False

10. Correct answers are:

(a)	There should be no autocorrelation in excess returns	True
(b)	Security prices adjust quickly and unbiassedly to new public information	True
(c)	Investment strategies based on historical price information give no positive excess returns	True
(d)	Differences in excess returns between (groups of) investors are not persistent	False
(e)	People cannot quickly get rich on the stock market	False
(f)	Insider trading gives no positive excess returns	False

Semi-strong efficiency also implies weak form efficiency.

11. Correct answers are:

(a)	There should be no autocorrelation in excess returns	True
(b)	Security prices adjust quickly and unbiassedly to new public information	True
(c)	Investment strategies based on historical price information give no positive excess returns	True
(d)	Differences in excess returns between (groups of) investors are not persistent	True
(e)	People cannot quickly get rich on the stock market	False
(f)	Insider trading gives no positive excess returns	True

Strong efficiency also implies semi-strong and weak form efficiency. Market efficiency does not imply that people cannot quickly get rich on the stock market.

12. Correct answers are:

(a)	Yearly stock returns over the past 35 years show significant autocorrelation	False
(b)	Daily stock returns over the past year show significant autocorrelation	True
(c)	Buying stocks after an x% price increase and selling after an x% decrease gives significant excess returns	True
(d)	Selling stocks after an x% price increase and buying after an x% decrease gives significant excess returns	True

The expected daily return is very close to zero, but the yearly return is not, so yearly returns are expected to be autocorrelated.

13. Correct answers are:

(a)	They go significantly up in the days before the announcement of very good quarterly earnings	False
(b)	They go significantly up in the days after the announcement of very good quarterly earnings	True
(c)	They go significantly down in the days after the announcement of very good quarterly earnings	True
(d)	They stay stable in the days after the announcement of very good quarterly earnings	False

14. Correct answers are:

(a)	About 50% of all mutual funds and pension funds outperform their proper benchmark index every year	False
(b)	On average, mutual funds and pension funds perform equally well as their proper benchmark index	False
(c)	A few mutual funds and pension funds persistently outperform their proper benchmark index	True
(d)	Investments by corporate insiders give significantly positive cumulative abnormal returns	True
(e)	Hedge fund managers perform so well that they earn billions of dollars in performance fees	False

15. (c) Not clustered but scattered over all quadrants

16. (a) Strictly insignificant regression coefficients

17. Correct answers are:

(a)	Selecting stocks that are under-researched	False
(b)	Selecting stocks that are unpopular	False
(c)	Selecting stocks that are undervalued	False
(d)	Selecting stocks that have outperformed the market (past winners)	False
(e)	Selecting stocks that have underperformed the market (past losers)	False

18. Correct answers are:

(a)	To calculate normal returns	True
(b)	To filter out the effects of other news than the event	True
(c)	To calculate abnormal returns	True

19. Correct answers are:

(a)	Sample selection bias	True
(b)	Information leaking out before the event	True
(c)	Inaccurate measurement of the event date	True
(d)	Market inefficiency	False

20. (b) 0.05
$0.08 - (0.005 + 1.25 \times 0.02) = 0.05$

21. (a) The stock market is at least not weak form efficient

22. (b) The stock market is at least not semi-strong form efficient
Semi-strong efficiency at least implies weak form efficiency.

23. Correct answers are:

(a)	Not investing in the stock marked at all, only in risk free bonds	True
(b)	Only invest in a few large, low risk and well-known companies (so called 'blue chips')	False
(c)	Only invest in index funds that replicate or track a market index	True
(d)	Invest in a combination of risk free bonds and index funds	True

(d) is the general rule, (a) and (c) are specific combinations with 0% in the index fund, which corresponds to extreme risk aversion, and 0% risk free, which corresponds to the specific situation that the preferred risk level coincides with that of the market portfolio.