Chapter 4: Marked efficiency - part 2

Exercises

1. In almost all countries there are a few people who became very rich by speculating on the stock market. This proves that excess returns can be earned and that the stock market is not efficient. Is this reasoning correct?

2. You are a student with good data skills and you decide to apply your talents to the stock market. After running a large number of regressions you find that the sign (+ or -) of the change in a company's stock price in one quarter is an accurate predictor of wether the company's earnings in the next quarter will increase or decrease.

   (a) Does this finding contradict the EMH?

   Next, you take daily return data of 100 stocks and test 10 different filter rules on each of them. You find that 27 stock-rule combinations earn significantly higher returns than a buy-and-hold strategy.

   (b) Does this finding contradict the EMH?

   You take a closer look at the stocks for which you found profitable filter rules and you see that they mainly belong to smaller, infrequently traded companies.

   (c) Is this finding relevant for the application of filter rules?

   Finally, you decide to apply an automatic function generator. You let your computer search through a very large number of functions that relate stock prices to variables in your dataset. You find that next month's stock prices are accurately predicted by the streeet number in the company's address plus the square root of the number of visitors to the company's website.

   (d) Do these results contradict the efficient market hypothesis?

3. Many (financial) newspapers around the world regularly publish a ranking of mutual funds in their countries, based on the funds' performance, together with a relevant index as a benchmark. What would be the place of the benchmark index in the ranking in an efficient marked? Distinguish between performance over short and long periods.

4. It is sometimes said that market efficiency protects unknowledgeable investors, so that it does not matter what and how you buy and sell, you always pay and get a fair price. Comment on this statement.

5. It is often reported that the price of a stock has increased over some period *before* the announcement of good news such as higher earnings, dividend increases, etc. Does this contradict the EMH?

6. There are cases in which the price of a stock *dropped* after the firm announced some good news, e.g. an increase in quarterly earnings. Does this contradict the EMH?

7. The following message is taken from the Newsweb on Oslo Stock Exchange.
   On 2009-06-18, Det norske oljeselskap ASA announced that it had discovered between 40 million and 130 million barrels of oil in the Grevling prospect. The appraisal well shows that the discovery is larger than first anticipated. Prior to drilling operations, Det norske estimated that Grevling could hold between 10 million and 80 million barrels of oil. The appraisal well also shows that the discovery is larger than indicated by the first discovery well. Det norske increased its ownership stake in Grevling from five percent to 30 percent prior to drilling operations. The company's net share of the discovery is thus between 12 million and 40 million barrels of oil, which means that Det norske's share of the discovery could match the volumes it sold in Goliat for MNOK 1,100 last autumn.

   (a) Calculate the abnormal return of Det norske oljeselskap on the announcement day. Use the market model and an estimation window of April-May 2009. The datafile (DetnorData.xls) is on the website.

8. Szewczyk et al.[1] analyzed a sample of companies announcing dividend omissions (announcements that no dividends will be paid). The CAAR (in %) on days relative to the announcement day (zero) are in the table below.

Day:	-6	-4	-2	0	2	4	6
CAAR %	.108	.032	-.483	-5.012	-5.183	-4.563	-4.685

   (a) Do the results of Szewczyk et al. contradict the Efficient Market Hypothesis (EMH)? If so, explain which form of the EMH it contradicts. Make additional assumptions if necessary.

   (b) It is sometimes argued that management of firms announcing dividend omissions know beforehand what they are going to announce, so that they could have shorted (sold short) the stock a week before. This would give them, on average, 5% return in a week $\rightarrow$ >200% a year. This would be insider trading, but that happens, it is not illegal in some case and seldom discovered anyway. The conclusion is that the market is not strong form efficient. Is this argument correct?

[1] Samuel H. Szewczyk and George P. Tsetsekos and Zaher Z. Zantout, 'Do Dividend Omissions Signal Future Earnings or Past Earnings?', The Journal of Investing, Vol.6, n.1., pp-40-53, 1997.