M86 Homework 1

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Exercise 1

Wilmott Ch. 1 Questions

Question 1.1 A company makes a three-for-one stock split. What effect does this have on the share price?

Answer The share price will decrease by a factor of three. So if the share price was \$90 before the split, it will be \$30 after the split. The total value of the shares will remain the same.

Question 1.2 A company whose stock price is currently S pays out a dividend DS, where $0 \leq D \leq 1$. What is the price of the stock just after the dividend date?

Answer The price of the stock after the dividend date will be $S' = S - DS$. So if the stock price is \$100 and the dividend is \$0.50, the price of the stock after the dividend date will be $S' = \$100 - \$0.50 = \$99.50$.

Question 1.3 The dollar sterling exchange rate (colloquially known as 'cable') is 1.83, £1 = \$1.83. The sterling euro exchange rate is 1.41, £1 = €1.41. The dollar euro exchange rate is 0.77, \$1 = €0.77. Is there an arbitrage, and if so, how does it work?

Answer Let us test if there is an arbitrage opportunity. Let's start with \$1.

$\$1 \to \pounds\frac{1}{1.83} \to \pounds\frac{1.41}{1.83} \to \$\frac{1.41}{1.83 \times 0.77} = \$\frac{1.41}{1.4091} = \$1.0006387$

So we have made a profit of \$0.0006387.