Qn 1

In a previous tutorial, you compute the Pearson coefficient between stock 0005.HK and 0011.HK. The stock prices of the two stocks are modelled as random variables and . Now let investigate whether the two stocks are related. Use

at

Compute the p-value. What can you conclude?

What underlying assumptions have you made implicitly?

1. The joint distribution is a bivariate normal distribution.
2. and have the following statistically linear relationship:

Qn 2

Given the following data

|  |  |
| --- | --- |
|  |  |
| 1 | 2 |
| 2 | 4.5 |
| 3 | 5.5 |

1. Solve for the least square regression line . Show the detailed derivations.
2. Use the Excel’s SLOPE and INTERCEPT function to compute and to verify the result.

SLOPE = 1.75 INTERCEPT = 0.5

1. Find Pearson coefficient .
2. Use Excel’s PEARSON function to verify the result.

PEARSON = 0.970725343

1. Verify that , where is the coefficient of determination. What is the physical meaning of the coefficient of determination?

The value of is often used as an indicator of how well the regression model fits the data, with a value near 1 indicating a good fit, and one near 0 indicating a poor fit.