Stock price : $47

Strike : $50

rfr : 6% annually

T : 1/12 years

option put : $2,50

Lower bound :

$$P \geq Ke^{-rt} - S_0 = 50e^{-0.06 \frac{1}{12}} - 47 = 2.75$$

Since the actual price is less than the theoretical. It creates a aibitrage opertunity.

Stratagy :

Borrow $49,50 at risk free rate

1. Buy 1 share for 47

2. Buy EU option for 2,5

After 1 mouth the repaid ammount is,

$$49,50 \cdot e^{0.06 \frac{1}{12}} = 49,75$$

Scenario 1: stock price is greater

Assume stock price is $51 = S_t, the option will expire ant you sell stock,

$$51 - 49.75 = 1.25$$

This results in $1,25 profit

Scenario 2: Stock is less than

- $S_t = 48$

- Exersize option to buy at $50

$$50 - 49.75 = 0.25$$