FIN 3080: Investment analysis and portfolio management
Project 1

Problem set 1: No arbitrage conditions

Actually, many stocks could trade in various markets at the same time. For example, stocks in Citic bank, minsheng bank and BBMG work as A-shares and H-shares to trade or to be traded in the meantime. Because A shares and H shares have same fundamentals in these stocks. If there is no arbitrage opportunity in the market, stock prices may be same or close(t-test) after adjusting the exchange rate of HONG KONG dollar and exchange rate of RMB. Let's us start from our intuition to test the 'No-Arbitrage opportunities' assumption.

1. Please download A-share and H-share historical daily price of three stocks from Wind/ CSMAR between January 2010 and June 2019. Take the overlap period of each stock's existence in the two markets. Compare prices (closing prices) to see if there is a significant difference between the two markets in this range.

2. As we all know, the structure difference between A-share market and H share market is huge. For example, A-share has 10% daily limit move. If we only focus days which A share reaching the limits, is there any change of price (closing price) in these days compared to question 1.

3. In question2, the effect of price limits structure showed. To avoid such condition, we exclude days which A share had reached price limits. And reconsider the differences between A share and H share prices. Besides, use what we learned from the course to illustrate reasons of our findings.

4. Please use intuition from question 2 to build a trading strategy. Calculate mean return and variance of this strategy.

Problem set 2:

We learned basic information of China stock fund in courses. In this project, we will discover that whether the China equity fund could win the stock market index or not?

1. Download all equity funds (pure stocks+ partial shares of mixed) from Wind between January 2010 and June 2019:
    a. Calculate monthly earning and monthly net value.
    b. Report sample mean and variance.
2. Summarize all existed stock fund in the history. (use Shanghai and Shenzhen 300 index as a benchmark):

    Compare excess return with market to draw a picture. Calculate and report excess return's mean and variance.
3. Recognize the excess return of stock funds that are still active now (June 2019) and draw a graph.

    Calculate and report excess return's mean and variance. Compared to the mean in question 2, what kind of conclusion you have?

In order to discover and explain equity funds performance, we focus on fund operating situation under different market conditions

1. Assume bull market (bear market) CSI 300 index earnings are over 25% (less than-25%) in past 12 months
    a. Calculate and report the number of equity funds issuance' s mean and variance in the range of bull and bear market.
    b. Compare the number of equity funds issuance in bull and bear period, is there any findings. Does it fit your expectation?
2. Track newly short-term equity funds (1 month to 3 months) and long-term equity funds (6 months to 3 years) performance:
    a. Report and draw: mean and variance. Do you discover anything?
    b. Combined your findings with knowledge from courses, explain your conclusion shortly.

Requirement of report:

Coding (30%)	• Correct coding • Attached as word files
Content(40%)	• Answer questions in sequence • Show your working of all questions • Clear and accurate
Table and graphs (10%)	• Professional and clear • Closely related with your content
Language (English only 5%)	• Demonstrate a clear, varied and concise use of language • Express appropriate to your analysis • No grammar spelling
Structure(10%)	• Construction paragraph • Well-structured report
Reference(5%)	• Provide reference at the last page and cited in your content

1. Please hand your project through *"project submission"* on blackboard
2. Due time should be ***00:00 24 September,2019.***
3. Please handed the report as **pdf file** and coding as **word file** respectively
4. The group leader should be responsible for submitting assignment
5. All the files only can submit once, so please check carefully before submitting.
6. Each report should have a cover with your group name, group members 'name and student number.