**SOE & WISE, Xiamen University, SEM II, AY2022-2023**
**Financial Economics/Asset Pricing**
**Homework 3 (Due on July 19, 2023)**

1. Consider the balance sheet of SureThing Corporation:

| Assets | | Liabilities and Shareholders' Equity | |
|---|---|---|---|
| Cash: | $3 million | Debt: | $3 million |
| Other Assets: | $11 million | Equity: | $11 million |
| Total: | $14 million | Total: | $14 million |

Number of shares outstanding = 440,000
Price per share = $25

If SureThing pays a cash dividend of $2.50 per share, what will the balance sheet look like afterward?

2. RU Corporation is an all equity financed firm with a total market value of $150 million. The company holds $20 million in cash and has $130 million in other assets. There are 2,500,000 shares of common stock outstanding for this company, each with a market price of $52. Consider the following decisions and the impact on RU Corporation's stock price and on number of shares outstanding.

   (a) The company pays a cash dividend of $5 per share.
   (b) The company repurchases 250,000 shares.
   (c) The company pays a 20% stock dividend.
   (d) The company has a two-for-one stock split.

3. Use the table below:

| | Historical Returns | |
|---|---|---|
| **Year** | **DinkiDi** | **SirPass** |
| 1 | 11% | 8% |
| 2 | 16% | 17% |
| 3 | –5% | –7% |
| 4 | –3% | –4% |
| 5 | 15% | 17% |
| 6 | 8% | 11% |

   (a) What is the mean return for DinkiDi? For SirPass?
   (b) What is the standard deviation for DinkiDi? For SirPass?

4. The expected rate of return on a risky asset is 0.19 and the riskless rate is 0.05. The standard deviation of the risky asset is 0.3.

(a) What happens to the slope of the trade-off line if the riskless rate decreases to 0.04 and the expected return on the risky asset increases to 0.2?
(b) What happens to the slope of the trade-off line if the riskless rate increases to 0.06 and the expected return on the risky assets increases to 0.2?

5. An investor has a $150,000 investment to allocate between a risky asset and a riskless asset. The expected rate of return for the risky asset is 0.18 and the expected rate of return for the riskless asset is 0.07. The standard deviation of the risky asset is 0.2. If the investor requires a portfolio composition corresponding to an expected rate of return of 0.15, what is the standard deviation of the portfolio?

6. Consider the portfolio of two risky assets with the following distribution of rates of return on risk assets.

| | Risky Asset 1 | Risky Asset 2 |
|---|---|---|
| Mean | 0.17 | 0.10 |
| Standard Deviation | 0.23 | 0.19 |

What are the mean and standard deviation of a portfolio that is 60% Risky Asset 1 and 40% Risky Asset 2 if the correlation coefficient is 0.3?