Ac F321 Midterm 2018 MOCK Exam Paper Solutions

Investments (Lancaster University)

LANCASTER UNIVERSITY MANAGEMENT SCHOOL
DEPARTMENT OF ACCOUNTING AND FINANCE
MIDTERM TEST LENT TERM 2019
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COURSE NUMBER: ACF 321
COURSE NAME: INVESTMENTS
EXAM DURATION: 45 MINUTES
READING TIME: 15 MINUTES
TOTAL MARKS: 25
NO. OF PAGES: 4

AUTHORISED MATERIALS:

- **Non-programmable calculators are permitted. Calculators with the ability to enter and/or retrieve text are NOT permitted.**

INSTRUCTIONS TO INVIGILATORS:

- **Writing is NOT permitted during reading time.**
- **Please check that the library card number is recorded correctly on the answer sheet.**
- **This exam paper should be collected at the end of the exam.**

INSTRUCTIONS TO STUDENTS:

- **Please write your library card number and your name in the correct place on the answer sheet.**
- **Writing is NOT permitted during reading time.**
- **ANSWER ALL QUESTIONS.**
- **The test consists of ten propositions. For each, say whether the proposition is true or false, giving a careful explanation for your answer. Each question is worth the same number of marks; marks will be awarded according to the quality of your explanation.**
- **All answers must be written in this booklet itself.**

1. Securities with a positive Jensen's alpha are overpriced.

- True
- **False**

FALSE. Securities with a positive Jensen's alpha are above the SML, and they are underpriced. Positive Jensen's alpha indicates the securities returns are greater than those predicted by CAPM, or that the securities is undervalued (its price is lower than it should be).

2. You can reduce the volatility of a portfolio through diversification, but you can never have a portfolio that has lower volatility than the least volatile share in the portfolio.

- True
- **False**

FALSE. For example if two shares are uncorrelated and have volatility of 20%,an equally weighted portfolio of the two shares will have a volatility of 14%.

3. If two shares have a beta of one, they must be positively correlated with each other.

- True
- **False**

FALSE. If their idiosyncratic risks are large enough and negatively correlated with each other, the correlation between the two shares could be negative.

4. In short-sale transaction, the lender's revenue is proportional to the profit of the short-seller.

- True
- **False**

FALSE. In a short-sale transaction, the lender's entire revenue is derived from the interest generated by the proceeds of the short sale that are deposited with the lender as a collateral.

5. Arbitrage Pricing Theory says that if there is no arbitrage then all share prices must be driven by a small number of factors.

- True
- **False**

False. The APT assumes that all share prices are driven by a small number of factors.

6. According to the Carhart four-factor model, greater the momentum of a stock, lower is its expected rate of return.

- True
- **False**

FALSE. According to the Carhart four-factor model, expected return increase with the covariance with the risk factors that the Momentum portfolio represents, and is not driven by the momentum of the stock itself.

7. You are contemplating adding another security to your pre-existing portfolio. You believe you have identified a particular foreign share, with a very low correlation with your portfolio. If you are a mean variance optimizer, you should add some of the foreign share to your portfolio because of its low correlation with your portfolio.

- True
- **False**

FALSE. The decision to add a new share is not driven by its correlation with the pre-existing portfolio, but by its Jensen's alpha. Add the security if it has a positive alpha, short it if it has a negative alpha, and ignore its alpha is equal to zero.

8. The Roll Critique (1977) says that the CAPM is wrong.

- True
- **False**

FALSE. The critique does not say the CAPM is wrong or meaningless. Instead, it states that the market portfolio that is central to the testing of CAPM is unobservable in practice. Therefore, the critique speaks to the (un) testability of CAPM, not to its theoretical validity.

9. For this question, all the assumptions of the CAPM hold apart from one: all investors over-estimate the expected future return of shares that have done well the previous year, and under-estimate the expected future return of those that have done badly. In such a world, investors would no longer hold the market portfolio plus cash or borrowing.

- True
- **False**

FALSE. They all agree on means and variances, so they all agree which equity portfolio has the highest Sharpe ratio, and they all want to hold it plus cash or borrowing. That portfolio must be the market portfolio. The composition of the market portfolio would be affected by the over estimation and under estimation of returns, but they would still all hold the market portfolio.

10. Assume that weekly volatility of stock returns is 1%. The annualized volatility will be (approximately) equal to 7.2%.

True False

TRUE. To annualise weekly volatility of returns, multiply by the square root of the number of weeks in a year. With the square root of 52 being 7.2, the annual volatility is 7.2 x 1% = 7.2%.

END OF QUESTION PAPER