Sample Midterm Exam #2

MGT 295F - Winter 2016

Empirical Methods in Finance

1 Multiple Choice Questions (10 questions, 3 points each)

1. Post earnings announcement drift is an anomaly documenting that stocks with positive (negative) earnings surprises have positive (negative) CAPM alphas in the quarter following the earnings announcement. Assume that the post earnings announcement drift is risk. Then

   a Realized returns of the stocks with positive earnings surprises should be *lower* in recessions than realized returns of the stocks with negative earnings surprises, and *the same* should be true about their expected returns

   b Realized returns of the stocks with positive earnings surprises should be *higher* in recessions than realized returns of the stocks with negative earnings surprises, and *the reverse* should be true about their expected returns

   c Realized returns of the stocks with positive earnings surprises should be *lower* in recessions than realized returns of the stocks with negative earnings surprises, and *the reverse* should be true about their expected returns

   d Realized returns of the stocks with positive earnings surprises should be *higher* in recessions than realized returns of the stocks with negative earnings surprises, and *the same* should be true about their expected returns

2. Mispricing or apparent mispricing should be stronger for

   a Volatile firms, small firms, firms with high Roll measure

   b Firms with low Amihud measure, firms with high bid-ask spread, firms with high short interest

   c Volatile firms, firms with high Amihud measure, firms with low probability to be on special

   d Small firms, firms with low residual institutional ownership, liquid firms

3. Momentum is an anomaly documenting that in the stock market past winners beat past losers not only historically, but also going forward. Assuming that momentum is caused by risk, you would expect the realized returns to the winners-minus-losers portfolio to be

   a *Positively* correlated with future unemployment and *positively* correlated with future default premium

   b *Negatively* correlated with future unemployment and *positively* correlated with future default premium

   c *Positively* correlated with future unemployment and *negatively* correlated with future default premium

   d *Negatively* correlated with future unemployment and *negatively* correlated with future default premium

4. You are creating a multifactor model with the factor that mimics the changes in unemployment. You can call this model the ICAPM

   a Only if unemployment is related to the marginal utility of consumption

   b Only if the unemployment factor earns a significant risk premium

   c Only if unemployment predicts the market risk premium

   d Only if all of the above is true

5. Consider a mutual fund with a zero CAPM alpha and negative correlation of returns with returns to high accruals firms. If high accruals firms have negative alphas, then

   a The fund is not an attractive investment irrespective of whether the accrual anomaly is risk or mispricing

   b The fund is an attractive investment if the accrual anomaly is risk, but not if it is mispricing

   c The fund is an attractive investment irrespective of whether the accrual anomaly is risk or mispricing

   d The fund is an attractive investment if the accrual anomaly is mispricing, but not if it is risk

6. A portfolio generates an annual return of 13%, a beta of 1.25 and a standard deviation of 19%. The market index return is 12% and has a standard deviation of 16%, and the risk free rate is 4%. The portfolio return is negatively correlated with future values of default premium.

   a The portfolio beats the CAPM prediction, but not necessarily the ICAPM prediction

   b The portfolio underperforms the CAPM prediction, but not necessarily the ICAPM prediction

   c The portfolio beats both the CAPM prediction and the ICAPM prediction

   d The portfolio underperforms both the CAPM prediction and the ICAPM prediction

7. Consider the economy with two stocks, A and B, with the Roll measures of 1.5% and 0.5%, respectively, and two investors, X and Y, with the investment horizons of 2 and 5 years, respectively. If the net-of-cost expected return to A and B is 11% per year, then in the equilibrium, in which one investor holds one stock

   a X holds A and receives the abnormal return of 0%

   b X holds B and receives the abnormal return of 0.25%

   c Y holds A and receives the abnormal return of 0.74%

   d Y holds A and receives the abnormal return of 0.44%

8. Consider the economy with two stocks, A and B, with the Amihud measures of 0.35% and 0.2%, respectively, and two investors, X and Y, with the usual trade size of \$5 million and \$2 million, respectively. If the net-of-cost expected return to A and B is 13% per year, then in the equilibrium, in which one investor holds one stock

   a Expected returns to A and B are 13.06% and 13.04%

   b Expected returns to A and B are 13.17% and 13.1%

   c Expected returns to A and B are 13.69% and 13.4%

   d Expected returns to A and B are 14.74% and 14%

9. In order for a positive alpha to be explained by risk, the realized returns to positive alpha firms should be

   a Positively related to changes in GDP growth and positively related to changes in VIX

   b Positively related to changes in GDP growth and negatively related to changes in VIX

   c Negatively related to changes in GDP growth and positively related to changes in VIX

   d Negatively related to changes in GDP growth and negatively related to changes in VIX

10. Distress risk puzzle refers to the puzzling tendency of healthy firms to have higher expected returns than distressed firms. What of the following suggests that liquidity risk can be an explanation of the distress risk puzzle?

   a Healthy firms gain when market illiquidity goes up

   b Healthy firms become more illiquid when market illiquidity goes up

   c Distressed firms become more liquid when market gains

   d Distressed firms covary negatively with the factor that buys illiquid firms and shorts liquid firms

2 Short Questions (5 questions, 10 points each)

1. Labor income to consumption ratio is known to be lower during recessions (people tap on their savings when they lose their jobs or receive an unusually slim paycheck). What is the expected sign of the correlation between expected market return and the lagged value of the aggregate labor income to consumption ratio to be? Explain.

2. A mutual fund with a positive CAPM alpha has a positive HML beta and a negative correlation of its abnormal returns with the unexpected changes in the inflation rate. How do both pieces of evidence impact your view of the manager's stock-picking ability?

3. The ratio of durables consumption to non-durables consumption (DND ratio) is known to be lower during recessions (consumers delay big-ticket purchases in recessions). The relative short interest (RSI) effect refers to the fact that high RSI firms have negative alphas. What should be the sign of the correlation between the returns to high RSI firms and the lagged value of the DND ratio in order to help explain the RSI effect?

4. Consider an economy with three stocks A, B and C with the Amihud measures of 0.5%, 0.3%, and 0.2%, respectively, and three investors X. Y, and Z with the average trade size of $5 million, $2 million, and $1 million, respectively. What is the equilibrium, in which each investor holds only one stock? Assume that the expected before-cost returns to A, B, and C are 10%, 11%, and 13%, respectively. *(20 points)*

5. You were estimating the Conditional CAPM for the Disp strategy that buys stocks with low analyst disagreement and shorts stocks with high analyst disagreement and got the following estimation output

$$Disp_t = \underset{(0.22)}{0.32} - \underset{(0.25)}{0.88}\,(MKT_t - RF_t) + \underset{(0.09)}{0.46}\,(MKT_t - RF_t)\cdot DIV_{t-1} - \underset{(0.10)}{0.38}\,(MKT_t - RF_t)\cdot DEF_{t-1}$$

Looking at the signs of the coefficients on $(MKT_t - RF_t) \cdot DEF_{t-1}$ and $(MKT_t - RF_t) \cdot DIV_{t-1}$, does the strategy look riskier than what the static CAPM implies? Explain.

3 Long Question (4 parts, 5 points each)

This question refers to the Conditional CAPM, estimated for the strategy that buys stocks with low idiosyncratic volatility and shorts stocks with high idiosyncratic volatility (IVol). The regression uses the data from January 1986 to December 2006. The numbers in brackets are standard errors.

$$IVol_t = \underset{(0.31)}{0.99} - \underset{(0.125)}{0.814}\,(MKT_t - RF_t) + \underset{(0.009)}{0.022}\,\Delta VIX_{t-1} \cdot (MKT_t - RF_t)$$

Does the strategy look riskier than what the static CAPM would imply? Explain.

According to the Conditional CAPM, does the strategy earn statistically significant abnormal return? Do you expect this abnormal return to be higher or lower in the static CAPM? Explain.

In October 2008, VIX increased from 39.39 to 59.89. According to the regression above, what should be the value of the market beta of the IVol strategy in November 2008?

Your colleague suggests that the alpha of the IVol strategy may be due to the fact that the beta of the IVol strategy is also correlated with past changes in the default premium. If your colleagues is right, what should be the sign of the correlation?