2022/23 Assessment

Visit Kenneth French's website[1] to download monthly data for the factors of Fama and French 5 factor model (Fama/French 5 Research Factors) which include the excess return on market portfolio, the size premium, the value premium, the profitability factor, the investment factor and the risk-free rate of the economy. Download also the 10 momentum-sorted portfolios (10 Portfolios Formed on Momentum). Use monthly data for the full sample available and in all cases use value-weighted returns. You should then proceed and estimate (for each of the ten portfolio) the Fama French 5-factor model (F-F-5M).

The word limit for this assessment is 3,000 words. References, Tables, Figures, Equations are NOT included in the word count. The assessment should be written (and submitted) in MS Word. Make sure that you use the MS Word Equation Editor in order to clearly present mathematical notation and equations. You should clearly present the results in easy-to-read Tables and Figures, which should be accompanied by clear/detailed notes that explain the content. Make sure that you number the Tables/Figures in order to easily refer to them.

The following points are meant to give you some general directions/ideas, so you do not necessarily have to apply them all, or use them to structure your document. You should include an introduction in the context of which you explain the F-F-5M (see point 1 below). In the same section, you should include a description and the main objectives of you analysis. You should then provide a clear description of your data (see point 2 below). The main part of your document should be the empirical analysis, in the context of which you estimate, test and interpret the F-F-5M, for each portfolio. You should conclude the assessment with a section that summarises the most important findings.

You will have to submit the EViews workfile you used at this folder . This file should include the data you use, as well as the equations you estimate and any other relevant output.

Guidance/Ideas

1. Write the F-F-5M as a regression model. Explain the rationale of this model in your own words and clearly define all the components (dependent and independent variables in each case) involved.

2. Clearly define and explain the data you use.

3. Present any relevant descriptive statistics and/or plots for the data you use. Such information should be clearly presented in Tables and/or Figures.

4. Estimate the F-F-5M for each of the 10 portfolios. For each of the 4a-4e aspects below, comment upon the results and any (potential) patterns that you find.

   (a) Compare the sign and magnitude of the estimates as you move from the lowest to the highest portfolio.

   (b) Compare the tests of individual significance of the factors (regressors) of each regression.

[1] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

(c) Compare the R^2 (or $\bar{R}^2$) or any other statistic relevant to the fit of each regression.

(d) Test the statistical adequacy of each regression, by running (and commenting upon) any diagnostic test you think is relevant.

(e) Test linear restrictions on the parameters of the F-F-5M that would allow you to compare it to the Fama-French 3-Factor model and the Capital Asset Pricing Model (CAPM).

5. Estimate the F-F-5M for each of the 10 portfolios, including an intercept term. This would allow you to test for abnormal returns in the context of this model. Comment upon the results and any (potential) patterns that you find.

6. For some of the 10 portfolios, test whether the F-F-5M estimation results change before and after a certain date (such as the financial crisis of 2008, or any other date linked to an event that you find important). Comment upon the results.

7. You may run any estimation/test you find relevant that is not covered by the above.

8. You may draw links with existing results in the literature, but any reference you provide should be relevant to your own results. Listing a high volume of irrelevant articles/books/studies is NOT going to increase your grade.

9. You may compare empirically the F-F-5M to the Fama-French 3 factor model and/or the CAPM model.

Avoid:

- Using screenshots for Tables, Figures, mathematical notation.
- Providing comments that are not directly relevant to the main objectives of this assessment.
- Being repetitive.
- Using long sentences that are difficult to be understood.

Marking Criteria:

- Understanding and explanation of theoretical concepts (25%)
- Validity of the statistical analysis (25%)
- Interpretation of the results (25%)
- Presentation/communication of the results (25%)