Investment II – Module 4 2023
Project

Instruction:

This project is allowed to work in groups. Submit a report with a summary for each part of the project. The report should be complete but concise. **You are required to submit your report in hardcopy in class and submit your programs (e.g., stata.do, py file) via email. This project is due on the first day of the group presentation.** No late submission will be accepted. Your project submission will be graded based on accuracy and the extent to which it is professionally executed. You should imagine yourself as an analyst who will submit a report to your director or client. In addition to getting the answer right, you want to make a good impression. Be concise, straight to the point, yet thorough and professional in your report, and have the firepower in your data and programs to back it up.

Required Readings:

- Fama, Eugene and Kenneth French, "Multifactor Explanations of Asset Pricing Anomalies," Journal of Finance, 1996, 51, 55-84.
- * Harvey, Campbell, Yan Liu and Heqing Zhu, "...and the Cross-Section of Expected Returns," Review of Financial Studies, 2016, 29, 5-68.
- * McLean, David and Jeff Pontiff, "Does Academic Publication Destroy Stock Return Predictability?" Journal of Finance, 2016, 71, 5-32.
- * Fama, Eugene and Kenneth French, "Size, value, and momentum in international stock returns," Journal of Financial Economics, 2012, 105, 457- 472.
- * Israel, Ronen and Tobias Moskowitz "The Role of Shorting, Size, and Time on Market Anomalies," Journal of Financial Economics, 2013, 108, 275–301.
- * Novy-Marx, Robert, "The Other Side of Value: The Gross Profitability Premium," Journal of Financial Economics, 2013, 108, 1–28.
- Fama, Eugene F. and French, Kenneth R., A Five-Factor Asset Pricing Model (September 2014). Fama-Miller Working Paper, Available at SSRN: https://ssrn.com/abstract=2287202 or http://dx.doi.org/10.2139/ssrn.2287202
- Thaler, R. H. (1987). Anomalies: the January effect. Journal of Economic Perspectives, 1(1), 197-201.
- Thaler, R. (1987). Anomalies: seasonal movements in security prices II: weekend, holiday, turn of the month, and intraday effects. *Journal of Economic Perspectives*, *1*(2), 169-177.

Part 1

Returns, Risk, and Factors – Replication

1. Obtain all publicly traded stock price data from CSMAR or CRSP from 01/01/2000 to 01/01/2024.
2. Download risk factors (Rm-Rf, SMB, HML, RMW, CMA) from Fama-French Data Library https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html
3. Report summary statistics of stock risk and returns.

4. Replicate multi-factor models including Rm-Rf, SMB, HML, RMW, CMA factors (see Fama French five-factor asset pricing models) and calculate abnormal returns.
5. Report regression analysis results from the predictive model and discuss your findings.

Part 2

Testing Anomaly – January Effects and Monday Effects

1. Use the data you have from Part 1 to test January Effects and report your findings.
2. Use the data you have from Part 1 to test Monday Effects and report your findings.

Part 3

Detecting Anomaly and Form Your Own Trading Strategy

1. Choose one anomaly from the **Internet Appendix** of McLean Pontiff (2016). Discuss the underlying mechanisms of how your anomaly leads to difference in stock returns.
   *** Each group should work on a unique anomaly (not the same as other groups). You can also detect or test other anomalies not listed in the paper.**

2. Construct portfolios based on testing anomaly. From the regression analysis, report the alpha of the anomaly, and the loadings of other risk factors.
3. From a trading strategy (long-short portfolio investment) and report annualized trading profits you expect to get for this anomaly.
4. Re-examine the out-of-sample predictability of your anomaly (i.e., If you sample period spans from 2000 to 2020, then you should test the anomaly in 2021-2024). Discuss why your results hold or not hold in the out-of-sample period.

Group Presentation:

1. Report your analysis results from the project (Part 1-3).