6.5 Fama and French Dissecting Anomalies Questions

The point of this paper is to look at momentum, and a bunch of additional variables that appeared since the size and B/M work. Are they real? Are they subsumed in size, B/M? Are they all independent, or are some subsumed by others? (1654 “which have information about average returns that is missed by the others.”) The paper also looks at what anomalies are there in big stocks, vs. what is just a feature of microcaps, which can’t really be exploited. Take some time with this paper to really digest Table 2 and 4. Finally, the paper agonizes about functional form. Is expected return really related to a firm’s B/M, to the log of B/M, to which decile of B/M a firm is in, etc.? Note the entire object of the paper is to extend Table 1 panel A of multifactor anomalies, the description of expected returns as a function of characteristics. Many of the variables have inspiration as cashflow forecasts – variables which forecast cash flows should help B/M to forecast returns. My questions go through the tables and facts first, then come back to the introduction.

1. How do FF define “Microcap” and “small” stocks? What percentage of stocks are “Micro”? What fraction of market value do “micro” stocks comprise? How can the percentile breakpoint that defines tiny be different from the fraction of tiny stocks in the sample?

2. Do small and micro stocks have different mean and standard deviation of returns than bigger stocks? Why are the VW and EW average returns in Table I so different?

3. Are the average returns in Table II raw, excess, or adjusted somehow? Do they represent returns, or alphas, or something else?

4. Explain the first row of Momentum and then Net stock issues (Market) in Table II. What do the numbers mean?

5. Why are the t-statistics for the High-Low portfolio so much better than for the individual portfolios?

6. Which anomalies produce strong average hedge returns for all three size groups? What numbers in Table II document your answer? (Hint: start by reading the H-L returns, then the H-L t stats, then look at the remaining columns)

7. Which anomalies seem only to work in tiny stocks in Table II?

8. Which anomaly gives the highest Sharpe ratio in Table II? (Help, there are no Sharpe ratios in Table II! Hint: how is a t statistic computed? You can translate from t to Sharpe ratios.)

9. The Profitability sort seems not to work in Table II. (Point to numbers). How did people think it was there? (Hint: 1663 pp2) ns, not each variable at a time.

10. Explain why the numbers in Table III jump so much between 4 and high.

Note on the way to Table IV. Table IV has “Fama-MacBeth regressions”. We’ll study those in detail a bit later. For now, you can think of them as regressions across individual stocks i, to determine how average returns depend on characteristics like size and book/market,

\[ E \left( R^i \right) = a + b_1 \log(MC_i) + b_2 \log(B/M_i) + b_3 Mom_i + \ldots + \varepsilon_i; \ i = 1, 2, \ldots N. \]

If all works well, this regression gives the same information as splitting things into 5 groups and looking at group means. But the paper is all about the pitfalls of each method vs. the
other. One reason for doing regressions is there is no way to split things into groups based on 2, 3, 4, etc. variables, to see whether, for example, momentum is still important after accounting for size and B/M. 1666 below III, “which anomalies are distinct and which have little marginal ability to predict returns?” But regressions need to take more of a stand on functional form, which FF worry about a lot. (“pervasive” is also about functional form though. It’s only “pervasive” if expected returns are linear in the portfolio number.)

Sorted portfolios and cross-sectional regressions.

A warning on OLS equally-weighted cross-sectional regressions

11. Explain what the first two rows of MC and B/M columns mean in Table IV.

12. “The novel evidence is that the market cap (MC) result draws[size effect] much of its power from microcaps.” (p. 1667) What numbers in Table IV are behind this conclusion?

13. Should the intercept be zero in the regressions of Table IV?

14. What is a “good” pattern of results in Table IV? Which variables have it, and which do not?
15. Overall, do any of the anomaly variables drive the other ones out in a multiple regression sense, or does each seem to give a separate piece of information about expected returns?

16. In the conclusions p. 1675, FF say “The evidence..is consistent with the standard valuation equation which says that controlling for B/M, higher expected net cashflows..imply higher expected stock returns” and “Holding the current book-to-market ratio fixed, firms with high expected future cash flows must have high expected returns” Isn’t this the fallacy that “profitable companies have higher stock returns” , or “confusing good companies with good stocks”? (Hint: “controlling for B/M” is important! Think about our present value identity.)

17. FF start out comparing regressions and sorts (1654, top). How is a regression the same thing as a sort? What regression would you run to achieve the same thing as a BM sort?

18. FF point out dangers of the common practice of sorting stocks by some variable, and then looking at the average returns of the 1-10 spread portfolio. What don’t they like about this practice?

19. FF continue by pointing out advantages and disadvantages of cross sectional regressions vs. portfolio sorts. What are they?

   Note: If you can’t directly answer the following questions from the paper, at least think about what else you need to know in order to figure out the answer.

20. Do these new average returns correspond to new dimensions of common movement across stocks, as B/M and size corresponded to B/M and size factors?

21. What is the highest Sharpe ratio you can get from exploiting one of these anomalies? (Choose any one).

22. What is the highest Sharpe ratio you can get from combining all these anomalies and exploiting them as much as possible?

23. It seems we get better returns and higher t statistics the finer we chop portfolios. Can you make anything look good by making 100 portfolios and then looking at the 1-100 spread? (FF don’t talk about this, it’s a puzzle for you. An accurate answer takes a few equations, but just think through the issue and guess what would happen as you subdivide finer and finer.)

6.6 Discount rates multivariate sections questions

These questions cover p. 1053-1058 and 1058-1064, and 1098-1099

1. Does cay help to forecast market returns?

2. In the context of the present value identity, how can cay help to forecast returns given that dividend yields reveal the market’s return forecast?

3. In what way do the first two columns of Figure 5 differ from the impulse-response function based only on returns and dp that you calculated?

4. In the final column of Figure 5, which components of the present value identity also change so that cay can help to forecast one-year returns without changing the dividend yield
5. On the top of p. 1062 I advocate running some regressions. Which Fama French table runs regressions like these?

6. How does the “cross-sector” log(B/M) coefficient in Table AIII compare to the coefficients in FF’s Table IV? (Roughly). Why is the “portfolio dummies” coefficient so much larger?