**Term Project of Value Strategy（价值投资)**

The term project includes the mid-term proposal and final term paper. You have to present the final term paper. The final class is the final presentation of your B-score strategy.

1. **Please read the following three papers:**

胡熠, 顾明, 巴菲特的阿尔法-来自中国股票市场的实证研究, **管理世界**, 2018(8): 41-54.

MCLEAN and PONTIFF, 2015, Does Academic Research Destroy Stock Return Predictability?, forthcoming, Journal of Finance (Table IA.III on page 51)

Campbell, Liu, and Zhu, 2015, . . . and the Cross-Section of Expected Returns, forthcoming, Review of Financial Studies ( table 6 on page 37)

Hu and Gu (2018) use China A-share stock data from 2005 to 2016 and test whether Warren Buffett’s investing style strategy is profitable in the Chinese stock market. They construct a comprehensive measure **B-score** to capture the characteristics of Buffett-style strategy in three dimensions, including **safety**, **cheapness,** and **quality**. They find that the B-score has a strong explanatory power for cross-sectional stock returns.

Two US studies summarize many papers and hundreds of factors attempting to predict the cross-section of expected returns. From the provided list, please choose three predicting factors to measure **safety**, **cheapness,** and **quality,** respectively. Then follow the strategy of Hu and Gu (2018) to construct the alternative B-score and examine whether the alternative B-score can predict cross-sectional stock returns.

1. **The mid-term proposal**

A research proposal is an outline of your proposed project that is designed to

* Define a clear question and approach to answering it
* Explain how it adds to, develops (or challenges) existing literature in the field.
* Why choose these three factors to represent **safety**, **cheapness,** and **quality?**

1. **The final term paper**

You are required to construct the alternative B-score and examine whether the alternative B-score can predict cross-sectional stock return based on the mid-term proposal. You have to show the source of abnormal profits from the investment strategy and provide relevant empirical evidence. It is understandable that the proposed strategy may not generate profits. The emphasis is on the empirical design and tests you learn from this class. Statistical software such as EXCEL, SAS, R, Python, Matlab, and Stata are all welcome.

1. **The format**

You have to employ portfolio sorting and Fama-MacBeth regression to show whether your B-score has the return predictive power. Please include at least **three tables** as follows:

* 1. The statistics of indicators ---Refers to Panels A and B of Table 1 of Hu and Gu (2018)

**表1 描述性统计**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Panel A 描述性统计 | | | | | |
| 变量 | 均值 | 标准差 | p25 | p50 | p75 |
| BETA | 1.097 | 0.322 | 0.914 | 1.087 | 1.266 |
| IVOL | 0.019 | 0.008 | 0.014 | 0.018 | 0.023 |
| BM | 0.452 | 0.295 | 0.286 | 0.427 | 0.600 |
| ADV | 0.034 | 0.051 | 0.007 | 0.019 | 0.040 |
| RD | 0.048 | 0.054 | 0.021 | 0.035 | 0.058 |
| GPOA | 0.136 | 0.100 | 0.073 | 0.114 | 0.173 |
| ACC | -0.019 | 0.381 | -0.061 | -0.017 | 0.025 |
| NOA | 0.372 | 0.420 | 0.271 | 0.398 | 0.522 |

Panel B相关性矩阵

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B-score | Safety | Cheapness | Quality |
| B-score | 1.00 | 0.57 | 0.66 | 0.66 |
| Safety |  | 1.00 | 0.06 | 0.06 |
| Cheapness |  |  | 1.00 | 0.21 |
| Quality |  |  |  | 1.00 |

* 1. Portfolio sorting--- refers to Table 2 of Hu and Gu (2018)

**单变量分组检验**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Panel A 未经风险调整的收益率 | | | | | | | | |
|  | 等额加权 | | | |  | 市值加权 | | | |
|  | Safety | Cheapness | Quality | B-score |  | Safety | Cheapness | Quality | B-score |
| P1 | 1.55 | 2.02 | 2.25 | 1.76 |  | 1.26 | 1.48 | 1.75 | 1.27 |
| P2 | 2.15 | 2.23 | 2.34 | 2.24 |  | 1.80 | 1.57 | 1.76 | 1.77 |
| P3 | 2.44 | 2.42 | 2.32 | 2.29 |  | 1.93 | 1.97 | 1.77 | 1.76 |
| P4 | 2.76 | 2.52 | 2.38 | 2.57 |  | 2.21 | 2.02 | 1.81 | 1.99 |
| P5 | 2.89 | 2.59 | 2.50 | 2.93 |  | 1.99 | 2.22 | 1.95 | 2.25 |
| P5-P1 | 1.34\*\*\* | 0.57\*\* | 0.25 | 1.17\*\*\* |  | 0.73 | 0.75\*\* | 0.19 | 0.99\*\*\* |
| t值 | (4.37) | (2.51) | (1.24) | (4.88) |  | (1.62) | (2.13) | (0.59) | (2.76) |
|  | Panel B Fama-French三因子调整收益率 | | | | | | | | |
|  | 等额加权 | | | |  | 市值加权 | | | |
|  | Safety | Cheapness | Quality | B-score |  | Safety | Cheapness | Quality | B-score |
| P1 | -0.93 | -0.20 | -0.31 | -0.72 |  | -0.87 | -0.09 | -0.44 | -0.84 |
| P2 | -0.34 | -0.17 | -0.08 | -0.20 |  | -0.27 | -0.30 | -0.23 | -0.08 |
| P3 | 0.00 | 0.03 | -0.03 | -0.11 |  | -0.07 | -0.04 | -0.02 | -0.18 |
| P4 | 0.38 | 0.07 | 0.07 | 0.20 |  | 0.36 | 0.05 | 0.03 | 0.21 |
| P5 | 0.79 | 0.15 | 0.25 | 0.71 |  | 0.56 | 0.27 | 0.41 | 0.66 |
| P5-P1 | 1.72\*\*\* | 0.35\*\* | 0.56\*\*\* | 1.43\*\*\* |  | 1.43\*\*\* | 0.36 | 0.85\*\*\* | 1.50\*\*\* |
| t值 | (6.21) | (1.99) | (3.25) | (6.46) |  | (3.78) | (1.55) | (3.40) | (4.91) |

注释：圆括号里的数字为t值；\*、\*\*、\*\*\*分别代表在10%、5%、1%的程度上显著。

* 1. Fama-MacBeth regression --refers to Table 4 of Hu and Gu (2018)

**Fama-Macbeth回归**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| B-score | 0.40\*\*\* |  |  |  | 0.20\*\*\* |  |
|  | (4.75) |  |  |  | (2.94) |  |
| Safety |  | 0.48\*\*\* |  |  |  | 0.17\* |
|  |  | (4.43) |  |  |  | (1.83) |
| Cheapness |  |  | 0.21\*\*\* |  |  | 0.18\*\* |
|  |  |  | (2.73) |  |  | (2.52) |
| Quality |  |  |  | 0.08 |  | 0.01 |
|  |  |  |  | (1.15) |  | (0.15) |
| SIZE |  |  |  |  | -0.61\*\*\* | -0.60\*\*\* |
|  |  |  |  |  | (-3.07) | (-3.03) |
| BM |  |  |  |  | 0.10 | 0.31 |
|  |  |  |  |  | (0.30) | (0.66) |

**5. Timeline**

The mid-term proposal is due in the class of week 10. I will comment on each proposal during the class on week 10.

The final paper is due four weeks after the mid-term proposal. Students have to present their results in week 14.