Anomalies: to be or not to be?

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A vast classical literature tends to find out the anomalies: some factors could create abnormal returns that CAPM cannot capture in its beta factor.

Value premium Lakonishok, Shleifer, and Vishny (1994) show that firms with high fundamental relative to price (such as high B/M, high C/P, high E/P, and low SG) tend to outperform the growth or glamour stocks. He proposes two explanations:

- Mispricing: extrapolation the past success too far into the future. It is also consistent with overconfidence of investors who tend to attribute their ability of stock selection skills for the high growth stocks. This view is consistent with behaviorists such as Thaler and Kahneman.
- Risk-return: value stocks have high risks.

However, the past success tend to be reverted in the future, glamour stocks have lower operating performance than value stocks in future. In addition, they find that value stocks are not riskier than glamour stocks.

Other explanations for value premium could be:

- Survivorship bias: studies include only successful firms into their sample, while skip most of the unsuccessful firms (no existing records for these failed firms). Thus, the result will overstate the average returns and tend to support anomaly.

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- Data mining: Fama (2001) tend to argue that statistical bias could overstate the anomalies. In McLean and Pontiff (2016), the upper bound of statistical bias could be up to 26% of the average predictors' returns.

Price premium Jegedeesh and Titman (1993) find a short term momentum as follows:

- Sort/rank stocks based on past returns (3-12 months) into 10 portfolios
- Equal-weighted portfolio returns in each portfolio
- Buy winner decile and sell loser decile
- Hold portfolio for 3-12 months, with or without a break of one week between ranking and holding

The momentum strategy could earn positive returns. However, it is a short-term strategy and the momentum return peaks at the 12 months then begin to decline.

How to explain momentum?

- Behavioral finance:
  - Conservatism: investors are conservative when react to new information, leading to underreaction
  - Representative bias: extrapolate past perform too far into future
  - Hong and Stein (1999): news watchers use fundamental and ignore stock price, while trend traders use technical analysis but ignore fundamental. Thus, trend traders push price above fundamental price (overreaction), while news watchers is underreaction.
  - Overconfidence/self-attribution bias: they overestimate the information signal and attribute their good performance to stock selection skills so push up the price. In contrast, underreaction leads to delay of response to information.
- Risk:
  - Conrad and Kaul (1998) argue that momentum is due to cross-sectional difference in expected return of stocks, so momemtum persist.

In the test of Jegadeesh and Titmen (2001), they support the behavioral finance. However, Hou, Xue, Zhang (2015) find that momentum is related to profitability factor in q-factor model. Thus, momentum strategy earns profits because it buy high profitable firms and sell unprofitable firms. A final conclusion is an open question.

Earning momentum Earning momentum is when the *post-earning announcement drifts*. The strategy forming is similar to price momentum. Chan, Jegadeesh, and Lakonishok (CJL-1996) find that *earning momentum* is persistent than price momentum (more than one year), but a bit smaller magnitude.

There are two hypotheses:

- Overreaction to information by trend-chasers: we should see a reversal in returns
- Underreaction to information: we should see both price and earning momentum

The results support the underreaction.

This earning momentum is quite similar to ***PEAD*** (post-earning announcement drift) of Bernard and Thomas (1989). They consider the standardized unexpected earnings (SUE): $SUE = EPS - E(EPS)$ and then split sample into 10 deciles of SUE for window $[-60; 60]$. They find a drift in long run for each decile: highest positive SUE go up steadily, while highest negative SUE go down steadily. They call this pattern is drift. The explanation is a *delay in response to information*.

Capital expenditure/Revenue Titman, Wei, Xie (2004) find that increase capital expenditure subsequently leads to negative returns. It is consistent with underreaction to empire building implication. Managers tend to invest free cash flows to earn private benefit rather than shareholders' benefits. They measure abnormal capital expenditure as difference from last year ($t-1$) and average of previous three years ($t-2$ to $t-4$).

$$CI = \frac{CE_{t-1}}{(CE_{t-2} + CE_{t-3} + CE_{t-4})/3} - 1$$

Then they split to 5 quintiles of CI and compare alpha of different models. They always find highest group of CI has negative returns, while the lowest group of CI earn positive returns.

Similar evidence

- Pontiff and Woodgate (2008) confirm same idea for net share issue: $ISSUE = ln(AdjShare_t) - ln(AdjShare_{t-1})$. Firms issue more stocks will earn lower returns.
- Cooper et al. (2008) find similar evidence for asset growth. High AG decile earn lower return than low AG decile.
- Chan, Lakonishok, Sougiannis (CLS-2001): R&D expense scaled by ME. High R&D firms seem to experience high abnormal returns. Possible explanations: underreaction to R&D benefits. Eberhart (2004, 2008) confirm this finding but use R&D expense scaled by sales and total assets.

References