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“Autoregressive Regressions for Contrarian and Trend-Chasing Strategies”

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มหาวิทยาลัยธรรมศาสตร์ ท่าพระจันทร์

Autoregressive Regressions for Contrarian and Trend-Chasing Strategies

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Topics

- Contrarian Strategies
- Trend-Chasing Strategies
- Autoregressive (AR) Model
- Application using AR Model
- Limitations and Notes
- Extension

Contrarian Strategies

- From Chan (1988), contrarian strategy is by going long in stocks in period *n* that have performed relatively poorly (**loser stocks**) in period (*n*-1), and by short-selling stocks in period n that have performed relatively well (**winner stocks**) in period (*n*-1).
- Possible explanations:
  - Overreaction Hypothesis (De Bondt and Thaler,1985)
  - Seasonality effects, e.g. January effects, Chinese New Year effects
  - Size effects
  - Lead-lag explanations among stocks, e.g. some stocks react to information more quickly than others.
  - Changes in risk biases

Contrarian Strategies

- Value investing
  - Buying stocks that have low prices relative to earnings, dividends, book assets, or other measures of fundamental value.
  - These strategies are ***contrarian*** to "naive“ strategies followed by other investors.

Winning and Losing Portfolios

- Use *l* periods data of returns (average/excess) for ranking stocks.
  - For example, 12 months, 24 months, 36 months etc.
  - Intraday data was also used.
- Select *m* number of stocks to form *s* portfolios from low to high ranking.
  - The lowest ranking portfolio is called “losing portfolio”
  - The highest ranking portfolio is called “winning portfolio”
- Then hold the losing portfolio and short the winning portfolio for *k* periods.

Empirical Results

- Results are **mixed.**
- Empirical results seems to be highly dependent on
  - variations in methodology,
  - meaning length of ranking and holding periods,
  - market of interest,
  - choice of pricing models and assumptions

Extension to other Asset Classes

- Mutual funds
- Foreign exchange rate

Trend-Chasing Strategies

- Momentum strategies/ positive feedback strategies
- Buying (selling) when the stock price is rising (falling) and the market for the stock has excess buyers (sellers).
- Possible explanations:
  - "Disposition effect" when investors hold losing stocks too long and sell winning stocks too quickly.
  - Trends will occur if information is used imperfectly. This can occur if enough people are irrational or rational but unable to interpret all information quickly and correctly.
  - The manifestation of the trade behavior of market participants who condition trades on prior price movements.
    - Feedback takes place because past price changes generate expectations of further price changes. This explanation relies on adaptive expectations.

Winning and Losing Portfolios

- Hold the winning portfolio and short the losing portfolio for *k* periods.

Autoregressive Regressions (AR)

- Values of a series of financial data at particular points in time might be highly correlated with the value which precede and succeed them.
- AR (*p*) Model:

$$y_t = b_0 + \sum_{i=1}^{p} b_i y_{t-i} + e_t$$

- AR (1) Model:

$$y_t = b_0 + b_1 y_{t-1} + e_t$$

- It can be used for forecasting.
  - It can also conditional on GARCH family model.

Application using AR Model

$$r_t = b_0 + b_1 r_{t-1} + \epsilon_t$$

- If $b_1 > 0$, use trend chasing strategy
- If $b_1 < 0$, use contrarian strategy

Limitations and Notes

- Use different ranking and holding periods.
- If the b_1 is very small, will the suggested strategy be profitable?
- Will this trend continue in the future?

More Sophisticated Extension

- Price trend model by Kahra and Schadewitzy (2005)

We follow Taylor [11] and assume that returns X_t have stationary mean μ such that

$$X_t = \mu + (\mu_t - \mu) + e_t. \quad (3)$$

In the return process e_t is the response to quickly reflected information and $\mu_t - \mu$ is the response to slowly reflected information. By definition e_t is a zero mean uncorrelated irregular component, the error or disturbance. The μ_t have mean μ and they are autocorrelated such that $\{\mu_t\}$ is an AR(1) process

$$\mu_t - \mu = p(\mu_{t-1} - \mu) + \zeta_t \quad (4)$$

having autocorrelations p^τ. The error term ζ_t represents the effect of all the slowly reflected news first available on day t.

- Use Maximum Likelihood to estimate.

References

- Chan, K. C.,1988, On the Contrarian Investment Strategy, *Journal of Business*, 147-163.
- De Bondt, W. F. M. and R. Thaler, 1985, Does the Stock Market Overreact? *Journal of Finance*, 793-805.
- Farmer, J.D. and S. Joshi, 2002, The Price Dynamics of Common Trading Strategies, *Journal of Economic Behavior & Organization*, 149–171.
- Kahra, H. A. and H. J. Schadewitzy, 2005, Chasing Trends down Wall Street, *working paper*.
- Keim, D. B., 2003, The Cost of Trend Chasing and The Illusion of Momentum Profits, *working paper*.
- Lakonishok, J., A. Shleifer and R. W. Vishny, 1994, Contrarian Investment, Extrapolation, and Risk, *Journal of Finance*, 1541-1578.