

Financial Anomalies

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Preface

The article is designed to study financial anomalies

1 Introduction

Fama and MacBeth (1973) show two-parameter regression model estimates average risk-return relationships based on efficient market portfolio (m), that is, the market prices fully reflect the available information. The asset are constructed based on Equation 1 for an asset (i) proposed by @Black (1972).

$$x_{im} \equiv \frac{\text{total market value of all units of assets } i}{\text{total market value of all assets}} \quad (1.1)$$

where asset(i)in the portfolio(m)

Excepted return of a security (i) is $E(\tilde{R}_0)$, the expected return on a security that is riskless in the portfolio m , plus a risk premium that is β_i times the difference between expected return of the portfolio ($E(\tilde{R}_m)$) and riskless portfolio ($E(\tilde{R}_0)$). is calculated by Equation 1, β_i is the risk of the asset i of the portfolio m , measured relative to $\sigma^2(\tilde{R}_m)$

$$E(\tilde{R}_i) = [E(\tilde{R}_m) - S_m \sum \tilde{R}_m] + S_m \sigma(\tilde{R}_m) \beta_i,$$

where,

$$\beta_i \equiv \frac{\text{cov}(\tilde{R}_i, \tilde{R}_m)}{\sigma^2(\tilde{R}_m)} = \frac{\sigma_{j=1}^N x_{jm} \sigma_{ij}}{\sigma^2(\tilde{R}_m)} = \frac{\text{cov}(\tilde{R}_i, \tilde{R}_m) / \sigma(\tilde{R}_m)}{\sigma(\tilde{R}_m)}$$

$$S_m = \frac{E(\tilde{R}_m) - E(\tilde{R}_0)}{\sigma(\tilde{R}_m)}$$

hence

$$E(\tilde{R}_i) = E(\tilde{R}_0) + [E(\tilde{R}_m) - E(\tilde{R}_0)] \beta_i \quad (1.2)$$

For each period of t , the cross sectional regression is given by

$$R_{pt} = \tilde{\gamma}_{0t} + \tilde{\gamma}_{1t} \tilde{\beta}_{p,t-1} + \tilde{\gamma}_{2t} \tilde{\beta}_{p,t-1}^2 + \tilde{\gamma}_{3t} \bar{s}_{p,t-1} \tilde{\epsilon}_i + \tilde{\eta}_{pt}, \quad (1.3)$$

$p = 1, 2, \dots, t$

Equation 1 the independent variable $\tilde{\beta}_{p,t-1}$ is the average of the $\tilde{\beta}_i$ for securities in portfolio p , $\tilde{\beta}_{p,t-1}^2$ is the average of the squared values of these $\tilde{\beta}_i$, $\bar{s}_{p,t-1}\tilde{\epsilon}_i$ is the average of $s\tilde{\epsilon}_i$ for portfolio p_i

Gupta and Ofer (1975) examines investors growth expectations reflected in the stock prices. A change in the expectation is reflected in the price movement. The study defines the earnings price ratio is a function of risk characteristics of the security and the expected growth in the earnings in Equation 1. The risk component are measured by: - the beta coefficient - the firm asset size (natural logarithm of total asset) - dividend payout ratio - leverage ratio of liabilities and preferred stocks to the common stock outstanding - earnings variability (standard deviation of earnings to price ratio calculated over period of seven years)

$$EP = f(RS, EG) \quad (1.4)$$

where:

EP = earnings price ratio- ,

RS = risk characteristics of the security

EG = the expected growth rate in the earnings

(1.5)

$$\Delta P_i^t = \frac{P_{it} - P_{it-1}}{P_{it-1}} \times 100 \quad (1.6)$$

where:

ΔP_i^t is the percent change of the security i during the period $t - 1$ to t

The average yearly percentage of the prices change for portfolio j (ΔP_j) is given by

$$\Delta P_j = \frac{\sum_{t=1}^{14} \frac{\sum_{r_t=10j-9}^{10j} \Delta P_{rt}^t}{14}}{14}, r_t = 1, \dots, 190$$

where:

r_t = the relative ranking of a security at time t according to its prediction error at that year. (1.7)

$\Delta P_t^{r_t}$ = percentage price change during the period $t - 1$ to t for a security that has the rank of r_t at time t (1.8)

Basu (1977): to determine empirically whether the investment performance of the common stocks is related to the P/E ratios.

P/E is the ratio of market value of the common stock (market price times the number of shares outstanding) as of December 31 to reporting annual earnings (before extraordinary items) available for common stockholders.

2 Summary

In summary, this book has no content whatsoever.

References

- Basu, Sanjoy. 1977. "Investment Performance of Common Stocks in Relation to Their Price-Earnings Ratios: A Test of the Efficient Market Hypothesis." *The Journal of Finance* 32 (3): 663–82.
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