

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)

ΔP_t^{rt} = 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)

2 Summary

In summary, this book has no content whatsoever.

References

- Black, Fischer. 1972. "Capital Market Equilibrium with Restricted Borrowing." *The Journal of Business* 45 (3): 444–55.
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- Gupta, Manak C, and Aharon R Ofer. 1975. "INVESTORS' EXPECTATIONS OF EARNINGS GROWTH, THEIR ACCURACY AND EFFECTS ON THE STRUCTURE OF REALIZED RATES OF RETURN." *The Journal of Finance* 30 (2): 509–23.