

Financial Anomalies

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Preface

The article is desgied 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

$$(1.8)$$

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. According to the paper, due the exaggerated investor expectations, P/E ratio may be the indicator of future investment performance. The paper shows that P/E is not fully reflected in security prices in as rapid a manner as postulated by the semi-strong form of the efficient market hypothesis. Instead, it seems that disequilibrium persisted in the capital market during the period studied. The results suggests that market efficiency does not exist due to lags and frictions in the price adjustment process.

Litzenberger and Ramaswamy (1979):

$$\tilde{R} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (d_{it} - r_{ft}) + \tilde{\epsilon}_{it}, i = 1, 2, \dots, N, t = 1, 2, \dots, T \quad (1.9)$$

where :

\tilde{R}_{it} Return of the security i in period t , β_{it} and d_{it} are the systemic risk and the dividend yield of security i in period t , $\tilde{\epsilon}_{it}$, a disturbance term is $\tilde{R} - E(\tilde{R}_{it})$, the deviation of the realized return from the expected value.

$$\text{coefficients } \gamma_0, \gamma_1, \gamma_2 \quad (1.10)$$

Banz (1981): studies “size effect” by using market indices - Market Index, CRSP value weighted, CRSP equal weighted indexes, US Bond Index, Corporate Bond Index to estimate the relationship between the return and market value based on Equation 1. The study suggests the CAPM is misspecified.

$$R_{it} = \gamma_{0t} + \gamma_{1t}\beta_{1t} + \gamma_{2t}[(\phi_{1t} - \phi_{mt})] + \epsilon_{it}, i = 1, \dots, N \quad (1.11)$$

where:

R_i = return on security i

γ_0 = return on a zero-beta portfolio

γ_1 = return on market risk premium

ϕ_i = market value security i

ϕ_m = average market value

γ_2 constant measuring the contribution of ϕ_i to the expected return of a security

(1.12)

Figlewski (1981) estimates “The test methodology we will use is a familiar one. We construct ten portfolios to which stocks are assigned according to their average short interest during the previous six months, and calculate the portfolios’ excess returns.”

Basu (1983): The empirical findings reported in this paper indicate that, at least during the 1963-80 time period, the returns on the common stock of NYSE firms appear to have been related to earnings’ yield and firm size.

De Bondt and Thaler (1985): “This study of market efficiency investigates whether such behavior affects stock prices. The empirical evidence, based on CRSP monthly return data, is consistent with the overreaction hypothesis. Substantial weak form market inefficiencies are discovered. The results also shed new light on the January returns earned by prior “winners” and “losers.” Portfolios of losers experience exceptionally large January returns as late as five years after portfolio formation. To repeat, our goal is to test whether the overreaction hypothesis is predictive. Specifically, two hypotheses are suggested: (1) Extreme movements in stock prices will be followed by subsequent price movements in the opposite direction. (2)

The more extreme the initial price movement, the greater will be the subsequent adjustment. Both hypotheses imply a violation of weak-form market efficiency.”

Bhandari (1988): “The expected returns on common stocks are positively related to the debt/equity ratio (DER), controlling for the beta and firm size, both including and excluding January. This relationship is not sensitive to variations in the market proxy, estimation technique, etc. The evidence suggests that the”premium” associated with the debt/equity ratio is not likely to be just some kind of “risk premium””

$$E(\tilde{r}_i) = E(\tilde{\gamma}_0) + E(\tilde{\gamma}_1)LTEQ_i + E(\tilde{\gamma}_2)BETA_i + E(\tilde{\gamma}_3) + DER_i, i = 1, \dots, N \quad (1.13)$$

where:

Natural Logarithm of Total Common Equity (LETQ) where total common equity

is the number of shares outstanding times (month-end) price per share

$$\text{Debt to Equity Ratio (DER)} = \frac{\text{book value of total assets} - \text{book value of common equity}}{\text{market value of common equity}}$$

BETA, the risk measure

Amihud and Mendelson (1986): “Illiquidity can be measured by the cost of immediate execution. An investor willing to transact faces a tradeoff: He may either wait to transact at a favorable price or insist on immediate execution at the current bid or ask price. The quoted ask (offer) price includes a premium for immediate buying, and the bid price similarly reflects a concession required for immediate sale. Thus. a natural measure of illiquidity is the spread between the bid and ask prices, which is the sum of the buying premium and the selling concession.’ Indeed. the relative spread on stocks has been found to be negatively correlated with liquidity characteristics such as the trading volume, the number of shareholders. the number of market makers trading the stock and the stock price continuity.”

Amihud and Mendelson (1989):

The percentage bid-ask spread (= dollar spread divided by the stock price)

$$R_{pm} = \gamma_0 + \gamma_1\beta_{pn} + \gamma_2\sigma_{pn} + \gamma_3SZ_{pn} + \gamma_4S_{pn} + \sum_{n=1}^{19} d_n DY_n + \epsilon_{pn} \quad \text{where:}$$

p is the portfolio

β_{pn} portfolio beta

σ_{pn} residual standard deviation

S_{pn} the portfolio average spread

SZ_{pn} average market value of the portfolio

(1.14)

Ou and Penman (1989): “Implements multivariate LOGIT analysis in financial statements. Fundamental analysis extracts value measures from financial statements and compares them to prices to identify mispriced stocks. The evidence here suggests that financial statements capture fundamentals that are not reflected in prices.”

Jegadeesh (1990): “This paper documents strong evidence of predictable behavior of security returns. The results here show that the monthly returns on individual stocks exhibit significantly negative first-order serial correlation and significantly positive higher-order serial correlation. The pattern of serial correlation exhibits seasonality, with the pattern in January significantly different from that in the other months.”

Jegadeesh and Titman (1993):

Loughran and Ritter (1995) : “Investing in firms issuing stock is hazardous to your wealth. Firms issuing stock during 1970 to 1990, whether an IPO or an SEO, have been poor long-run investments for investors. s. The average annual return during the five years after issuing

is only 5 percent for firms conducting IPOs, and only 7 percent for firms conducting SEOs. Investing an equal amount at the same time in a nonissuing firm with approximately the same market capitalization, and holding it for an identical period, would have produced an average compound return of 12 percent per year for IPOs and 15 percent for SEOs. The magnitude of the underperformance is large: it implies that 44 percent more money would need to be invested in the issuers than in the nonissuers to be left with the same wealth five years later.”

Michaely, Thaler, and Womack (1995): “Market reaction to the dividend initiations.”

La Porta (1996): ” Contrarian strategies that use analysts’ expectations to form portfolios yield high returns. Specifically, when stocks are sorted by the expected growth rate in earnings, low $E\{g\}$ stocks beat high $E\{g\}$ stocks by twenty percentage points.. Finally, event study evidence suggests that the market was overly pessimistic about the earnings of the low $E\{g\}$ portfolio and excessively optimistic about the earnings of the high $E\{g\}$ portfolio”

Lev and Sougiannis (1996): “To address these concerns, we estimate the R&D capital of a large sample of public companies and find these estimates to be statistically reliable and economically meaningful. We then adjust the reported earnings and book values of sample firms for the R&D capitalization and find that such adjustments are value-relevant to investors.”

Sloan (1996): “This paper investigates whether stock prices reflect information about future earnings contained in the accrual and cash flow components of current earnings. The persistence of earnings performance is shown to depend on the relative magnitudes of the cash and accrual components of earnings. However, stock prices act as if investors fail to identify correctly the different properties of these two components of earnings”

Womack (1996): ” An analysis of new buy and sell recommendations of stocks by security analysts at major U.S. brokerage firms shows significant, systematic discrepancies between prerecommendation prices and eventual values. The initial return at the time of the recommendations is large, even though few recommendations coincide with new public news or provide previously unavailable facts. However, these initial price reactions are incomplete. For buy recommendations, the mean postevent drift is modest (+2.4%) and short-lived, but for

sell recommendations, the drift is larger (-9.1%) and extends for six months. Analysts appear to have market timing and stock picking abilities”

Brennan, Chordia, and Subrahmanyam (1998): “We examine the relation between stock returns, measures of risk, and several non-risk security characteristics, including the book-to-market ratio, firm size, the stock price, the dividend yield, and lagged returns. Our primary objective is to determine whether non-risk characteristics have marginal explanatory power relative to the arbitrage pricing theory benchmark, with factors determined using, in turn, the Connor and Korajczyk (CK; 1988) and the Fama and French (FF; 1993b) approaches. Fama—MacBeth-type regressions using risk adjusted returns provide evidence of return momentum, size, and book-to-market effects, together with a significant and negative relation between returns and trading volume, even after accounting for the CK factors. When the analysis is repeated using the FF factors, we find that the size and book-to-market effects are attenuated, while the momentum and trading volume effects persist. In addition, Nasdaq stocks show significant underperformance after adjusting for risk using either method”

Brennan, Chordia, and Subrahmanyam (1998): Regardless of the method used to risk-adjust returns, we find a strong negative relation between average returns and trading volume, which is consistent with a liquidity premium in asset prices. In addition, the size and book-to-market ratio effects are strong in the CK method of risk-adjustment, while the FF factors attenuate both the magnitude and significance of these effects.

Dichev (1998): ” Several studies suggest that a firm distress risk factor could be behind the size and the book-to-market effects. A natural proxy for firm distress is bankruptcy risk. If bankruptcy risk is systematic, one would expect a positive association between bankruptcy risk and subsequent realized returns. However, results demonstrate that bankruptcy risk is not rewarded by higher returns. Thus, a distress factor is unlikely to account for the size and book-to-market effects. Surprisingly, firms with high bankruptcy risk earn lower than average returns since 1980. A risk-based explanation cannot fully explain the anomalous evidence.”

- MV is log of fiscal-year-end price times number of shares outstanding

- BIM is common equity divided by fiscal-year-end price times number of shares outstanding
- Z risk (bankruptcy risk, Altman (1968)) comprised of
 - Working capital/Total assets
 - Retained Earnings/Total assets
 - Earnings before interest and taxes/Total assets
 - Market value equity/Book value of total debt
 - Sales/Total assets
- O risk
 - $SIZE = \log(\text{total assets}/\text{GNP price-level index})$.
 - * TLTA = Total liabilities divided by total assets.
 - WCTA Working capital divided by total assets.
 - CLCA Current liabilities divided by current assets.
 - OENEG = One if total liabilities exceeds total assets, zero otherwise.
 - NITA Net income divided by total assets.
 - FUTL = Funds provided by operations divided by total liabilities.
 - INTWO = One if net income was negative for the last two years, zero otherwise.
 - $CHIN = (NI_t - NI_{t-1})/(|NI_t| + |NI_{t-1}|)$ where NI_t is net income for the most recent period.

Datar, Naik, and Radcliffe (1998): “In this paper, we provide an alternative test of A&M’s model using the turnover rate as a proxy for liquidity and found strong support for A&M’s model. In particular, we find that the stock returns are strongly negatively related to their turnover rates confirming the notion that illiquid stocks provide higher average returns.” - Monthly Returns - turnover rate of every stock = monthly trading volume (the average number of shares traded during the previous three months, i.e., during months t- 3, t-2 and t-1) and divide it by the number of shares outstanding of that firm - turnover rate of every stock - book-to-market ratio, - firm size - firm beta

Moskowitz and Grinblatt (1999): "This paper documents a strong and prevalent momentum effect in components of stock returns which accounts for much of the individual stock return anomaly. Specifically, momentum investment strategies, which buy past winning stocks and sell past losing stocks, are significantly less profitable than industry momentum. By contrast, industry momentum investments which buy stocks from past winning industries and sell stocks from past losing industries, appear highly profitable, even after controlling for size, book-to-market equity, individual stock momentum, the cross-sectional dispersion in returns and potential microstructure."

Lee and Swaminathan (2000): "This study shows that past trading volume provides an important link between 'momentum' and 'value' strategies. Specifically, we find that firms with high (low) past turnover ratios exhibit many glamour (value) characteristics, earn lower (higher) future returns, and have consistently more negative (positive) earnings surprises over the next eight quarters. Past trading volume also predicts both the magnitude and persistence of price momentum. Specifically, price momentum effects reverse over the next five years, and high (low) volume winners (losers) experience faster reversals. Collectively, our findings show that past volume helps to reconcile intermediate-horizon 'underreaction' and long-horizon 'overreaction' effects"

Asness, Porter, and Stevens (2000): "Better proxies for the information about future returns contained in firm characteristics such as size, book-to-market equity, cash flow-to-price, percent change in employees, and various past return measures are obtained by breaking these explanatory variables into two industry-related components."

Piotroski (2000):

Chordia, Subrahmanyam, and Anshuman (2001): "A body of literature starting with Amihud and Mendelson (1986) has found that investors demand a premium for less liquid stocks, so that expected returns should be negatively related to the level of liquidity. In this paper, we document negative and significant cross-sectional relationships between average stock returns and the level as well as the second moment of measures of trading activity such as dollar volume and share turnover. Given the evidence that the level of liquidity affects asset returns,

a reasonable hypothesis is that the second moment of liquidity should be positively related to asset returns, provided agents care about the risk associated with fluctuations in liquidity. Motivated by this observation, we analyze the relation between expected equity returns and the level as well as the volatility of trading activity, a proxy for liquidity. We document a result contrary to our initial hypothesis, namely, a negative and surprisingly strong cross-sectional relationship between stock returns and the variability of dollar trading volume and share turnover, after controlling for size, book-to-market ratio, momentum, and the level of dollar volume or share turnover. This effect survives a number of robustness checks, and is statistically and economically significant. Our analysis demonstrates the importance of trading activity-related variables in the crosssection of expected stock returns.”

Lamont, Polk, and Saaá-Requejo (2001): “We test whether the impact of financial constraints on firm value is observable in stock returns. We form portfolios of firms based on observable characteristics related to financial constraints and test for common variation in stock returns. Financially constrained firms’ stock returns move together over time, suggesting that constrained firms are subject to common shocks. Constrained firms have low average stock returns in our 1968–1997 sample of growing manufacturing firms. We find no evidence that the relative performance of constrained firms reflects monetary policy, credit conditions, or business cycles. We construct various zero-cost portfolios that are long financially constrained firms and short less constrained firms and find three results. First, these portfolios capture common variation in stock returns not captured by other sources of return comovements. Thus we conclude that there is a financial constraints factor, an identifiable independent common source of economic shocks to firm value. The evidence suggests that financial constraints do affect firm value and that the severity of constraints varies over time. Second, our investigation of the role of financial constraints in asset pricing reveals the surprising result that constrained firms earn lower returns than unconstrained firms, a result not explainable using existing asset-pricing models. Third, financially constrained firms do not have returns that are significantly more cyclical than average. Thus, the source of the common economic shocks to financially constrained firms remains an open question. The proxies are constructed based

on Kaplan and Zingales (1995)”

Elgers, Lo, and Pfeiffer Jr (2001): “The paper documents that the weighting of analysts annual earnings forecasts implicit in security prices is lower than the historical relation between the financial analysts forecasts and realized earnings. Our evidence that analysts the beginning of the year annual earnings forecasts are associated with abnormal security returns subsequently accumulated over the earnings year is consistent with the delayed price reaction to the value-relevant information in the positions in the securities in the bottom (top) deciles of the cross-sectional distribution of the analysts earnings forecasts early in the earnings year, generates statistically significant trading profits in the year after portfolio formation for firms with relatively low analysts coverage.”

P. A. Gompers and Metrick (2001): “We analyze the investors preferences for the stock and the implications that these preferences have for stock-market prices and returns. We find that large institutional investors- a category including all managers with greater than \$100 million under discretionary control –have nearly doubled their share of the common stock from 1980 to 1996, with most of this increase driven by the growth in the holdings of the largest one hundred institutions.”

Griffin and Lemmon (2002): “This paper examines the relationship between book-to-market equity, distress risk, and stock returns. Among firms with the highest distress risk as proxied by Ohlson (1980) 0-score, the difference in returns between high and low book-to-market securities is more than twice as large as that in other firms. This large return differential cannot be explained by the three-factor model or by differences in economic fundamentals. Consistent with mispricing arguments, firms with high distress risk exhibit the largest return reversals around earnings announcements, and the book-to-market effect is largest in small firms with low analyst coverage.”

Diether, Malloy, and Scherbina (2002): “We provide evidence that stocks with higher dispersion in analysts’ earnings forecasts earn lower future returns than otherwise similar stocks. This effect is most pronounced in small stocks and stocks that have performed poorly over the

past year. Interpreting dispersion in analysts' forecasts as a proxy for differences in opinion about a stock, we show that this evidence is consistent with the hypothesis that prices will reflect the optimistic view whenever investors with the lowest valuations do not trade. By contrast, our evidence is inconsistent with a view that dispersion in analysts' forecasts proxies for risk."

J. Chen, Hong, and Stein (2002): "In this paper, we bring new evidence to bear on an asset-pricing hypothesis which has been around for a long while, but which has thus far not received much empirical support. The idea, which dates back to Miller, has to do with the combined effects of short-sales constraints and differences of opinion on stock prices. We develop a model of stock prices in which there are both differences of opinion among investors as well as short-sales constraints. The key insights that emerge in that breadth of ownership is a valuation indicator. When the breadth is low- when investors have long positions in the stock- this signals that the short-sales constraint is binding tightly, implying that prices are high relative to fundamentals and that expected returns are therefore low."

P. Gompers, Ishii, and Metrick (2003): "Shareholder rights vary across firms. Using the incidence of 24 governance rules, we construct a "Governance Index" to proxy for the level of shareholder rights at about 1500 large firms during the 1990s. An investment strategy that bought firms in the lowest decile of the index (strongest rights) and sold firms in the highest decile of the index (weakest rights) would have earned abnormal returns of 8.5 percent per year during the sample period. We find that firms with stronger shareholder rights had higher firm value, higher profits, higher sales growth, lower capital expenditures, and made fewer corporate acquisitions."

Doyle, Lundholm, and Soliman (2003): "We investigate the informational properties of pro forma earnings. This increasingly popular measure of earnings excludes certain expenses that the company deems non-recurring, non-cash, or otherwise unimportant for understanding the future value of the firm. We find, however, that these expenses are far from unimportant. Higher levels of exclusions lead to predictably lower future cash flows. We also find that investors do not fully appreciate the lower cash flow implications at the time of the earnings

announcement. A trading strategy based on the excluded expenses yields a large positive abnormal return in the years following the announcement, and persists after controlling for various risk factors and other anomalies.”

Doyle, Lundholm, and Soliman (2003):

Watkins (2003): “I analyze the degree to which return consistency in the past predicts future returns. It is discovered here that consistency is a strong predictive measure for future stock returns. In a portfolio context, positively consistent stocks exhibit positive future risk-adjusted returns, and negatively consistent stocks exhibit negative future risk-adjusted returns. The results are economically and statistically significant over multiple sub-periods. Also, odd return behavior persists for nearly two years after portfolio formation. Stocks that have been consistently positive (negative) for longer time horizons have higher(lower) risk-adjusted returns during the following month than those which have been consistent for shorter time periods. Finally, it is determined that high consistency enhances momentum when the two factors are allowed to interact. Thus, there appears to be strong path dependence in the momentum effect, and consistency in stock returns appears to be an important component of return predictability.”

Eberhart, Maxwell, and Siddique (2004): “We examine a sample of 8,313 cases, between 1951 and 2001, where firms unexpectedly increase their research and development (R&D) expenditures by a significant amount. We find consistent evidence of a misreaction, as manifested in the significantly positive abnormal stock returns that our sample firms’ shareholders experience following these increases. We also find consistent evidence that our sample firm experience significantly positive long-term abnormal operating performance follow their R&D increases. Our findings suggest that R&D increases are beneficial in themselves, and that the market is slow to recognize the extent of this benefit (consistent with investor underreaction).” George and Hwang (2004): “When coupled with a stock’s current price, a readily available piece of information 52-week high price-explains a large portion of the profits from momentum investment. Nearness to the 52-week high dominates and improves upon the forecasting power past returns (both individual and industry returns) for future returns. Future return forecast using the 52-week high do not

reverse in the long run. These results indicate that short-term momentum and long-term reversals are largely separate phenomena which presents a challenge to current theory that models these aspects of security returns as integrated components of the market's response"

Jegadeesh et al. (2004)

Titman, Wei, and Xie (2004)

K. M. Cremers and Nair (2005)

Acharya and Pedersen (2005):

Measure of Illiquidity (based on Amihud, 2002):

$$ILLIQ_t^i = \frac{1}{Days_i} \sum_{d=1}^{Days_t^i} \frac{|R_{td}^i|}{V_{td}^i} \quad (1.15)$$

Hou and Moskowitz (2005) Nagel (2005) Asquith, Pathak, and Ritter (2005) Mohanram (2005) Whitely and Wu (2006) Ang et al. (2006) Anderson and Garcia-Feijoo (2006) Daniel and Titman (2006) Fama and French (2006) Bradshaw, Richardson, and Sloan (2006) Franzoni and Marin (2006) Narayanamoorthy (2006) Avramov et al. (2007) Kumar et al. (2008) Guo and Savickas (2008) Campbell, Hilscher, and Szilagyi (2008) Garlappi, Shu, and Yan (2008) Cooper, Gulen, and Schill (2008) Pontiff and Woodgate (2008) Cohen and Frazzini (2008) Fabozzi, Ma, and Oliphant (2008) Soliman (2008) Avramov et al. (2009) Hahn and Lee (2005) Rozeff and Zaman (1988) Lebedeva, Maug, and Schneider (2012) Fishman and Hagerty (1995) Cao, Field, and Hanka (2004) Pagano and Roell (1996) Chemmanur and Yan (2019) Gow and Taylor (2009) Dechow and Sloan (1997) Tuzel (2010) Menzly and Ozbas (2010) Xing, Zhang, and Zhao (2010) Bali, Cakici, and Whitelaw (2011) Yan (2011) Eissfeldt and Papanikolaou (2013) Callen, Khan, and Lu (2013) Drake, Rees, and Swanson (2011) Hafzalla, Lundholm, and Matthew Van Winkle (2011) Landsman et al. (2011) K. K. Li (2011) Thomas and Zhang

(2011) Johnson and So (2012) Palazzo (2012) Bazdreh, Belo, and Lin (2009) Cohen and Lou (2012) Hirshleifer, Hsu, and Li (2013) Prakash and Sinha (2013) Cohen, Diether, and Malloy (2013) Novy-Marx (2013) Frazzini and Pedersen (2014) Valtu (2016) Da and Warachka (2009) Hou, Karolyi, and Kho (2011) Barber et al. (2001) Harvey and Siddique (2000) Spiess and Affleck-Graves (1999) Ang, Chen, and Xing (2006) Chordia and Shivakumar (2006) Kishore et al. (2008) Hawkins, Chamberlin, and Daniel (1984) Adrian, Etula, and Muir (2014) Frankel and Lee (1998) Abarbanell and Bushee (1998) Ali, Hwang, and Trombley (2003) Vanden (2006) Vanden (2004) K. C. Chan, Chen, and Hsieh (1985) Arbel, Carvell, and Strebel (1983) Campbell (1996) Dittmar (2002) Liu (2006) Pastor and Stambaugh (2003) Hirshleifer and Jiang (2010) Black (1972) Carhart (1997) Black (1972) Kraus and Litzenberger (1976) Lintner (1965) Sharpe (1964) Heckerman (1972) Heckerman (1972) Fama and MacBeth (1973) Mossin (1966) Jagannathan and Wang (1996) Ferson and Harvey (1991) Fogler, John, and Tipton (1981) Boudoukh et al. (2007) Hou, Xue, and Zhang (2015) Holthausen and Larcker (1992) Easley, Hvidkjaer, and O'hara (2010) Chopra, Lakonishok, and Ritter (1992) Kelly, Moskowitz, and Pruitt (2021) L. Chen, Novy-Marx, and Zhang (2011) Foster, Olsen, and Shevlin (1984) Spiess and Affleck-Graves (1995) Daniel and Titman (1997) Fama and French (1993) Fama and French (1992) Lo and Wang (2006) Mayshar (1981) Brennan and Subrahmanyam (1996) Jiang, Lee, and Zhang (2005) Lev, Sarath, and Sougiannis (2005) Bali and Hovakimian (2009) Boyer, Mitton, and Vorkink (2010) J. An, Bhojraj, and Ng (2010) Hameed and Mian (2015) Simutin (2010) Opler et al. (1999) Huang et al. (2012) Balachandran and Mohanram (2012) Conrad, Dittmar, and Ghysels (2013) Conrad, Dittmar, and Ghysels (2013) Burlacu et al. (2012) Durnev and Mangen (2009) Vassalou and Xing (2004) Adrian and Rosenberg (2008) Wahlen and Wieland (2011) Penman and Zhang (2002) Lev, Nissim, and Thomas (2016) Cen, Wei, and Zhang (2006) Baik and Ahn (2007) Li Gu and Ye (2009) (**huangalanguoming2009tcs0?**) (**papanastasopoulosgeorgios2010tior?**) (**dazhi2011dsrr?**)

Patatoukas (2012)

McLean and Pontiff (2016)

Baltussen, Van Bakkum, and Van der Grint (2012)

B.-J. An et al. (2014) X. Li (2010)
 So (2013)
 Beneish, Lee, and Nichols (2013)
 Brennan, Huh, and Subrahmanyam (2013)
 Boguth and Kuehn (2013)
 Chordia, Huh, and Subrahmanyam (2009)
 Baker and Wurgler (2006)
 M. Cremers, Halling, and Weinbaum (2010)
 K. M. Cremers, Nair, and John (2009)
 Beneish (1997)
 Amihud and Mendelson (1986)
 Chang, Christoffersen, and Jacobs (2013)
 Gu (2005)
 Gokcen (2009)
 Korniotis and Kumar (2009)
 Douglas (1967)
 Shu (2007)
(head2009stock?)
 Armstrong, Banerjee, and Corona (2011)
 Hess, Kreutzmann, and Pucker (2010)
 Brown and Rowe (2007)
 Ackert and Athanassakos (1997)

Ortiz-Molina and Phillips (2014)
 Gopalan, Kadan, and Pevzner (2012)
 Bauman and Downen (1988)
 Balvers and Huang (2007)
 Teo and Woo (2004)
(gu2011Overpriced?)
(chen2012idiosyncratic?)
 Da (2009)
 Campbell and Vuolteenaho (2004)
 Lettau and Ludvigson (2001)
 Breeden, Gibbons, and Litzenberger (1989)
 Yogo (2006)
(savov2011Asset?)
(bansal1993arbitrage?)
 Xing (2008)
 Bansal, Dittmar, and Lundblad (2005)
 Parker and Julliard (2005)
 Brennan, Wang, and Xia (2004)
 K. Chan, Foresi, and Lang (1996)
 Chapman (1997)
 Cochrane (1996)
 Bossaerts and Dammon (1994)

Korniotis (2008)

Breeden (1979)

Stulz (1986) George and Hwang (2010) (livdan2009Financially?) (adler1983International?)
M. E. Rubinstein (1973) (constantinides1982Intertemporal?) M. Rubinstein (1974)
(sun2019Financing?) (garleanu2012Displacement?) Cox, Ingersoll Jr, and Ross (2005)
(lucas1978Asset?) (garlappi2011Financial?) (jarrow1980Heterogeneous?) Merton
(1973) (constantinides1986Capital?) Stulz (1981) Solnik (1974) (chordia2013Trends?)
(ferson2013sample?) (akbas2013Time?) (doskov2016Tradable?) (jagannathan2007Lazy?)
(vassalou2003News?) (jacobs2004Idiosyncratic?) (ozoguz2009Good?) (viale2012Safety?)
(malloy2009Long?) Sweeney and Warga (1986) (kumar2006Retail?) (oldfield1981Treasury?)
(kapadia2011Tracking?) Ferson and Harvey (1993) (ferson1994Sources?) (ferson1999Conditioning?)
(heaton2000Portfolio?) (lustig2005Housing?) (fung1997Empirical?) (korajczyk2008Pricing?)
(binsbergen2016Good?) (chen2014Contingent?) Kojien, Moskowitz, and Pedersen
(2012) (chen1986Economic?) (eiling2013Industry?) (li2006Sector?) (g2016Labor?)
(bali2016Risk?) (hu2013Noise?) (berkman2011Time?) Campbell et al. (2018)
(chung2006Asset?) (erb1996Expected?) (elton1995Fundamental?) (elton1995Fundamental?)
(wang2012Debt?) (da2009Long?) (jiang2014Dispersion?) (zhao2012Information?)

2 Summary

In summary, this book has no content whatsoever.

References

- Abarbanell, Jeffery S, and Brian J Bushee. 1998. "Abnormal Returns to a Fundamental Analysis Strategy." *Accounting Review*, 19–45.
- Acharya, Viral V, and Lasse Heje Pedersen. 2005. "Asset Pricing with Liquidity Risk." *Journal of Financial Economics* 77 (2): 375–410.
- Ackert, Lucy F, and George Athanassakos. 1997. "Prior Uncertainty, Analyst Bias, and Subsequent Abnormal Returns." *Journal of Financial Research* 20 (2): 263–73.
- Adrian, Tobias, Erkko Etula, and Tyler Muir. 2014. "Financial Intermediaries and the Cross-Section of Asset Returns." *The Journal of Finance* 69 (6): 2557–96.
- Adrian, Tobias, and Joshua Rosenberg. 2008. "Stock Returns and Volatility: Pricing the Short-Run and Long-Run Components of Market Risk." *The Journal of Finance* 63 (6): 2997–3030.
- Ali, Ashiq, Lee-Seok Hwang, and Mark A Trombley. 2003. "Arbitrage Risk and the Book-to-Market Anomaly." *Journal of Financial Economics* 69 (2): 355–73.
- Altman, Edward I. 1968. "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy." *The Journal of Finance* 23 (4): 589–609.
- Amihud, Yakov, and Haim Mendelson. 1986. "Asset Pricing and the Bid-Ask Spread." *Journal of Financial Economics* 17 (2): 223–49.
- . 1989. "The Effects of Beta, Bid-Ask Spread, Residual Risk, and Size on Stock Returns." *The Journal of Finance* 44 (2): 479–86.
- An, Byeong-Je, Andrew Ang, Turan G Bali, and Nusret Cakici. 2014. "The Joint Cross Section of Stocks and Options." *The Journal of Finance* 69 (5): 2279–2337.

- An, Jiyoung, Sanjeev Bhojraj, and David T Ng. 2010. "Warranted Multiples and Future Returns." *Journal of Accounting, Auditing & Finance* 25 (2): 143–69.
- Anderson, Christopher W, and Luis Garcia-Feijoo. 2006. "Empirical Evidence on Capital Investment, Growth Options, and Security Returns." *The Journal of Finance* 61 (1): 171–94.
- Ang, Andrew, Joseph Chen, and Yuhang Xing. 2006. "Downside Risk." *The Review of Financial Studies* 19 (4): 1191–1239.
- Ang, Andrew, Robert J Hodrick, Yuhang Xing, and Xiaoyan Zhang. 2006. "The Cross-Section of Volatility and Expected Returns." *The Journal of Finance* 61 (1): 259–99.
- Arbel, Avner, Steven Carvell, and Paul Strebel. 1983. "Giraffes, Institutions and Neglected Firms." *Financial Analysts Journal* 39 (3): 57–63.
- Armstrong, Christopher, Snehal Banerjee, and Carlos Corona. 2011. *Information Quality and the Cross-Section of Expected Returns*. Wharton School, University of Pennsylvania.
- Asness, Clifford S, R Burt Porter, and Ross L Stevens. 2000. "Predicting Stock Returns Using Industry-Relative Firm Characteristics." *Available at SSRN 213872*.
- Asquith, Paul, Parag A Pathak, and Jay R Ritter. 2005. "Short Interest, Institutional Ownership, and Stock Returns." *Journal of Financial Economics* 78 (2): 243–76.
- Avramov, Doron, Tarun Chordia, Gergana Jostova, and Alexander Philipov. 2007. "Momentum and Credit Rating." *The Journal of Finance* 62 (5): 2503–20.
- . 2009. "Dispersion in Analysts' Earnings Forecasts and Credit Rating." *Journal of Financial Economics* 91 (1): 83–101.
- Baik, Bok, and Tae Sik Ahn. 2007. "Changes in Order Backlog and Future Returns." *Seoul Journal of Business* 13 (2): 105–26.
- Baker, Malcolm, and Jeffrey Wurgler. 2006. "Investor Sentiment and the Cross-Section of Stock Returns." *The Journal of Finance* 61 (4): 1645–80.
- Balachandran, Sudhakar, and Partha Mohanram. 2012. "Using Residual Income to Refine the Relationship Between Earnings Growth and Stock Returns." *Review of Accounting Studies* 17: 134–65.
- Bali, Turan G, Nusret Cakici, and Robert F Whitelaw. 2011. "Maxing Out: Stocks as

- Lotteries and the Cross-Section of Expected Returns.” *Journal of Financial Economics* 99 (2): 427–46.
- Bali, Turan G, and Armen Hovakimian. 2009. “Volatility Spreads and Expected Stock Returns.” *Management Science* 55 (11): 1797–1812.
- Baltussen, Guido, Sjoerd Van Bakkum, and Bart Van der Grient. 2012. “Unknown Unknowns: Vol-of-Vol and the Cross Section of Stock Returns.” *Erasmus University Working Paper*.
- Balvers, Ronald J, and Dayong Huang. 2007. “Productivity-Based Asset Pricing: Theory and Evidence.” *Journal of Financial Economics* 86 (2): 405–45.
- Bansal, Ravi, Robert F Dittmar, and Christian T Lundblad. 2005. “Consumption, Dividends, and the Cross Section of Equity Returns.” *The Journal of Finance* 60 (4): 1639–72.
- Banz, Rolf W. 1981. “The Relationship Between Return and Market Value of Common Stocks.” *Journal of Financial Economics* 9 (1): 3–18.
- Barber, Brad, Reuven Lehavy, Maureen McNichols, and Brett Trueman. 2001. “Can Investors Profit from the Prophets? Security Analyst Recommendations and Stock Returns.” *The Journal of Finance* 56 (2): 531–63.
- 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.
- . 1983. “The Relationship Between Earnings’ Yield, Market Value and Return for NYSE Common Stocks: Further Evidence.” *Journal of Financial Economics* 12 (1): 129–56.
- Bauman, W Scott, and Richard Dowen. 1988. “Growth Projections and Common Stock Returns.” *Financial Analysts Journal* 44 (4): 79–80.
- Bazdrech, Santiago, Frederico Belo, and Xiaoji Lin. 2009. “Labor Hiring, Investment and Stock Return Predictability in the Cross Section.” *Financial Markets Group, The London School of Economics and Political Science*.
- Beneish, Messod D. 1997. “Detecting GAAP Violation: Implications for Assessing Earnings Management Among Firms with Extreme Financial Performance.” *Journal of Accounting and Public Policy* 16 (3): 271–309.
- Beneish, Messod D, Charles MC Lee, and D Craig Nichols. 2013. “Earnings Manipulation

- and Expected Returns.” *Financial Analysts Journal* 69 (2): 57–82.
- Bhandari, Laxmi Chand. 1988. “Debt/Equity Ratio and Expected Common Stock Returns: Empirical Evidence.” *The Journal of Finance* 43 (2): 507–28.
- Black, Fischer. 1972. “Capital Market Equilibrium with Restricted Borrowing.” *The Journal of Business* 45 (3): 444–55.
- Boguth, Oliver, and Lars-Alexander Kuehn. 2013. “Consumption Volatility Risk.” *The Journal of Finance* 68 (6): 2589–2615.
- Bossaerts, Peter, and Robert M Dammon. 1994. “Tax-Induced Intertemporal Restrictions on Security Returns.” *The Journal of Finance* 49 (4): 1347–71.
- Boudoukh, Jacob, Roni Michaely, Matthew Richardson, and Michael R Roberts. 2007. “On the Importance of Measuring Payout Yield: Implications for Empirical Asset Pricing.” *The Journal of Finance* 62 (2): 877–915.
- Boyer, Brian, Todd Mitton, and Keith Vorkink. 2010. “Expected Idiosyncratic Skewness.” *The Review of Financial Studies* 23 (1): 169–202.
- Bradshaw, Mark T, Scott A Richardson, and Richard G Sloan. 2006. “The Relation Between Corporate Financing Activities, Analysts’ Forecasts and Stock Returns.” *Journal of Accounting and Economics* 42 (1-2): 53–85.
- Breeden, Douglas T. 1979. “An Intertemporal Asset Pricing Model with Stochastic Consumption and Investment Opportunities.” *Journal of Financial Economics* 7 (3): 265–96.
- Breeden, Douglas T, Michael R Gibbons, and Robert H Litzenberger. 1989. “Empirical Tests of the Consumption-Oriented CAPM.” *The Journal of Finance* 44 (2): 231–62.
- Brennan, Michael J, Tarun Chordia, and Avanidhar Subrahmanyam. 1998. “Alternative Factor Specifications, Security Characteristics, and the Cross-Section of Expected Stock Returns.” *Journal of Financial Economics* 49 (3): 345–73.
- Brennan, Michael J, Sahn-Wook Huh, and Avanidhar Subrahmanyam. 2013. “Informed Trading and the Pricing of Good and Bad Private Information in the Cross-Section of Expected Stock Returns.” *The World Bank Paper*.
- Brennan, Michael J, and Avanidhar Subrahmanyam. 1996. “Market Microstructure and Asset Pricing: On the Compensation for Illiquidity in Stock Returns.” *Journal of Financial*

- Economics* 41 (3): 441–64.
- Brennan, Michael J, Ashley W Wang, and Yihong Xia. 2004. “Estimation and Test of a Simple Model of Intertemporal Capital Asset Pricing.” *The Journal of Finance* 59 (4): 1743–76.
- Brown, David P, and Bradford Rowe. 2007. “The Productivity Premium in Equity Returns.” *Available at SSRN 993467*.
- Burlacu, Radu, Patrice Fontaine, Sonia Jimenez-Garcés, and Mark S Seasholes. 2012. “Risk and the Cross Section of Stock Returns.” *Journal of Financial Economics* 105 (3): 511–22.
- Callen, Jeffrey L, Mozaffar Khan, and Hai Lu. 2013. “Accounting Quality, Stock Price Delay, and Future Stock Returns.” *Contemporary Accounting Research* 30 (1): 269–95.
- Campbell, John Y. 1996. “Understanding Risk and Return.” *Journal of Political Economy* 104 (2): 298–345.
- Campbell, John Y, Stefano Giglio, Christopher Polk, and Robert Turley. 2018. “An Intertemporal CAPM with Stochastic Volatility.” *Journal of Financial Economics* 128 (2): 207–33.
- Campbell, John Y, Jens Hilscher, and Jan Szilagyi. 2008. “In Search of Distress Risk.” *The Journal of Finance* 63 (6): 2899–939.
- Campbell, John Y, and Tuomo Vuolteenaho. 2004. “Bad Beta, Good Beta.” *American Economic Review* 94 (5): 1249–75.
- Cao, Charles, Laura Casares Field, and Gordon Hanka. 2004. “Does Insider Trading Impair Market Liquidity? Evidence from IPO Lockup Expirations.” *Journal of Financial and Quantitative Analysis* 39 (1): 25–46.
- Carhart, Mark M. 1997. “On Persistence in Mutual Fund Performance.” *The Journal of Finance* 52 (1): 57–82.
- Cen, Ling, John Wei, and Jie Zhang. 2006. “Forecasted Earnings Per Share and the Cross Section of Expected Stock Returns.” *None*. Working Paper.
- Chan, KC, Silverio Foresi, and Larry HP Lang. 1996. “Does Money Explain Asset Returns? Theory and Empirical Analysis.” *The Journal of Finance* 51 (1): 345–61.

- Chan, Kevin C, Nai-fu Chen, and David A Hsieh. 1985. “An Exploratory Investigation of the Firm Size Effect.” *Journal of Financial Economics* 14 (3): 451–71.
- Chang, Bo Young, Peter Christoffersen, and Kris Jacobs. 2013. “Market Skewness Risk and the Cross Section of Stock Returns.” *Journal of Financial Economics* 107 (1): 46–68.
- Chapman, David A. 1997. “Approximating the Asset Pricing Kernel.” *The Journal of Finance* 52 (4): 1383–1410.
- Chemmanur, Thomas J, and An Yan. 2019. “Advertising, Attention, and Stock Returns.” *Quarterly Journal of Finance* 9 (03): 1950009.
- Chen, Joseph, Harrison Hong, and Jeremy C Stein. 2002. “Breadth of Ownership and Stock Returns.” *Journal of Financial Economics* 66 (2-3): 171–205.
- Chen, Long, Robert Novy-Marx, and Lu Zhang. 2011. “An Alternative Three-Factor Model.” *Available at SSRN 1418117*.
- Chopra, Navin, Josef Lakonishok, and Jay R Ritter. 1992. “Measuring Abnormal Performance: Do Stocks Overreact?” *Journal of Financial Economics* 31 (2): 235–68.
- Chordia, Tarun, Sahn-Wook Huh, and Avanidhar Subrahmanyam. 2009. “Theory-Based Illiquidity and Asset Pricing.” *The Review of Financial Studies* 22 (9): 3629–68.
- Chordia, Tarun, and Lakshmanan Shivakumar. 2006. “Earnings and Price Momentum.” *Journal of Financial Economics* 80 (3): 627–56.
- Chordia, Tarun, Avanidhar Subrahmanyam, and V Ravi Anshuman. 2001. “Trading Activity and Expected Stock Returns.” *Journal of Financial Economics* 59 (1): 3–32.
- Cochrane, John H. 1996. “A Cross-Sectional Test of an Investment-Based Asset Pricing Model.” *Journal of Political Economy* 104 (3): 572–621.
- Cohen, Lauren, Karl Diether, and Christopher Malloy. 2013. “Misvaluing Innovation.” *The Review of Financial Studies* 26 (3): 635–66.
- Cohen, Lauren, and Andrea Frazzini. 2008. “Economic Links and Predictable Returns.” *The Journal of Finance* 63 (4): 1977–2011.
- Cohen, Lauren, and Dong Lou. 2012. “Complicated Firms.” *Journal of Financial Economics* 104 (2): 383–400.
- Conrad, Jennifer, Robert F Dittmar, and Eric Ghysels. 2013. “Ex Ante Skewness and Ex-

- pected Stock Returns.” *The Journal of Finance* 68 (1): 85–124.
- Cooper, Michael J, Huseyin Gulen, and Michael J Schill. 2008. “Asset Growth and the Cross-Section of Stock Returns.” *The Journal of Finance* 63 (4): 1609–51.
- Cox, John C, Jonathan E Ingersoll Jr, and Stephen A Ross. 2005. “A Theory of the Term Structure of Interest Rates.” In *Theory of Valuation*, 129–64.
- Cremers, KJ Martijn, and Vinay B Nair. 2005. “Governance Mechanisms and Equity Prices.” *The Journal of Finance* 60 (6): 2859–94.
- Cremers, KJ Martijn, Vinay B Nair, and Kose John. 2009. “Takeovers and the Cross-Section of Returns.” *The Review of Financial Studies* 22 (4): 1409–45.
- Cremers, Martijn, Michael Halling, and David Weinbaum. 2010. “In Search of Aggregate Jump and Volatility Risk in the Cross-Section of Stock Returns.” *SSRN eLibrary*.
- Da, Zhi. 2009. “Cash Flow, Consumption Risk, and the Cross-Section of Stock Returns.” *The Journal of Finance* 64 (2): 923–56.
- Da, Zhi, and Mitchell Craig Warachka. 2009. “Cashflow Risk, Systematic Earnings Revisions, and the Cross-Section of Stock Returns.” *Journal of Financial Economics* 94 (3): 448–68.
- Daniel, Kent, and Sheridan Titman. 1997. “Evidence on the Characteristics of Cross Sectional Variation in Stock Returns.” *The Journal of Finance* 52 (1): 1–33.
- . 2006. “Market Reactions to Tangible and Intangible Information.” *The Journal of Finance* 61 (4): 1605–43.
- Datar, Vinay T, Narayan Y Naik, and Robert Radcliffe. 1998. “Liquidity and Stock Returns: An Alternative Test.” *Journal of Financial Markets* 1 (2): 203–19.
- De Bondt, Werner FM, and Richard Thaler. 1985. “Does the Stock Market Overreact?” *The Journal of Finance* 40 (3): 793–805.
- Dechow, Patricia M, and Richard G Sloan. 1997. “Returns to Contrarian Investment Strategies: Tests of Naive Expectations Hypotheses.” *Journal of Financial Economics* 43 (1): 3–27.
- Dichev, Ilia D. 1998. “Is the Risk of Bankruptcy a Systematic Risk?” *The Journal of Finance* 53 (3): 1131–47.
- Diether, Karl B, Christopher J Malloy, and Anna Scherbina. 2002. “Differences of Opinion

- and the Cross Section of Stock Returns.” *The Journal of Finance* 57 (5): 2113–41.
- Dittmar, Robert F. 2002. “Nonlinear Pricing Kernels, Kurtosis Preference, and Evidence from the Cross Section of Equity Returns.” *The Journal of Finance* 57 (1): 369–403.
- Douglas, George Warren. 1967. *Risk in the Equity Markets: An Empirical Appraisal of Market Efficiency*. None. Yale University.
- Doyle, Jeffrey T, Russell J Lundholm, and Mark T Soliman. 2003. “The Predictive Value of Expenses Excluded from Pro Forma Earnings.” *Review of Accounting Studies* 8: 145–74.
- Drake, Michael S, Lynn Rees, and Edward P Swanson. 2011. “Should Investors Follow the Prophets or the Bears? Evidence on the Use of Public Information by Analysts and Short Sellers.” *The Accounting Review* 86 (1): 101–30.
- Durnev, Art, and Claudine Mangen. 2009. “Corporate Investments: Learning from Restatements.” *Journal of Accounting Research* 47 (3): 679–720.
- Easley, David, Soeren Hvidkjaer, and Maureen O’hara. 2010. “Factoring Information into Returns.” *Journal of Financial and Quantitative Analysis* 45 (2): 293–309.
- Eberhart, Allan C, William F Maxwell, and Akhtar R Siddique. 2004. “An Examination of Long-Term Abnormal Stock Returns and Operating Performance Following r&d Increases.” *The Journal of Finance* 59 (2): 623–50.
- Eisfeldt, Andrea L, and Dimitris Papanikolaou. 2013. “Organization Capital and the Cross-Section of Expected Returns.” *The Journal of Finance* 68 (4): 1365–1406.
- Elgers, Pieter T, May H Lo, and Ray J Pfeiffer Jr. 2001. “Delayed Security Price Adjustments to Financial Analysts’ Forecasts of Annual Earnings.” *The Accounting Review* 76 (4): 613–32.
- Fabozzi, Frank J, KC Ma, and Becky J Oliphant. 2008. “Sin Stock Returns.” *The Journal of Portfolio Management* 35 (1): 82–94.
- Fama, Eugene F, and Kenneth R French. 1992. “The Cross-Section of Expected Stock Returns.” *The Journal of Finance* 47 (2): 427–65.
- . 1993. “Common Risk Factors in the Returns on Stocks and Bonds.” *Journal of Financial Economics* 33 (1): 3–56.
- . 2006. “Profitability, Investment and Average Returns.” *Journal of Financial Eco-*

- nomics* 82 (3): 491–518.
- Fama, Eugene F, and James D MacBeth. 1973. “Risk, Return, and Equilibrium: Empirical Tests.” *Journal of Political Economy* 81 (3): 607–36.
- Ferson, Wayne E, and Campbell R Harvey. 1991. “The Variation of Economic Risk Premiums.” *Journal of Political Economy* 99 (2): 385–415.
- . 1993. “The Risk and Predictability of International Equity Returns.” *Review of Financial Studies* 6 (3): 527–66.
- Figlewski, Stephen. 1981. “The Informational Effects of Restrictions on Short Sales: Some Empirical Evidence.” *Journal of Financial and Quantitative Analysis* 16 (4): 463–76.
- Fishman, Micheal J, and Kathleen M Hagerty. 1995. “The Mandatory Disclosure of Trades and Market Liquidity.” *The Review of Financial Studies* 8 (3): 637–76.
- Fogler, H Russell, Rose John, and James Tipton. 1981. “Three Factors, Interest Rate Differentials and Stock Groups.” *The Journal of Finance* 36 (2): 323–35.
- Foster, George, Chris Olsen, and Terry Shevlin. 1984. “Earnings Releases, Anomalies, and the Behavior of Security Returns.” *Accounting Review*, 574–603.
- Frankel, Richard, and Charles MC Lee. 1998. “Accounting Valuation, Market Expectation, and Cross-Sectional Stock Returns.” *Journal of Accounting and Economics* 25 (3): 283–319.
- Franzoni, Francesco, and Jose M Marin. 2006. “Pension Plan Funding and Stock Market Efficiency.” *The Journal of Finance* 61 (2): 921–56.
- Frazzini, Andrea, and Lasse Heje Pedersen. 2014. “Betting Against Beta.” *Journal of Financial Economics* 111 (1): 1–25.
- Garlappi, Lorenzo, Tao Shu, and Hong Yan. 2008. “Default Risk, Shareholder Advantage, and Stock Returns.” *The Review of Financial Studies* 21 (6): 2743–78.
- George, Thomas J, and Chuan-Yang Hwang. 2004. “The 52-Week High and Momentum Investing.” *The Journal of Finance* 59 (5): 2145–76.
- . 2010. “A Resolution of the Distress Risk and Leverage Puzzles in the Cross Section of Stock Returns.” *Journal of Financial Economics* 96 (1): 56–79.
- Gokcen, Umut. 2009. “Information Revelation and Expected Stock Returns.” In *FMA 2009*

Reno Meetings Paper, NFA.

- Gompers, Paul A, and Andrew Metrick. 2001. "Institutional Investors and Equity Prices." *The Quarterly Journal of Economics* 116 (1): 229–59.
- Gompers, Paul, Joy Ishii, and Andrew Metrick. 2003. "Corporate Governance and Equity Prices." *The Quarterly Journal of Economics* 118 (1): 107–56.
- Gopalan, Radhakrishnan, Ohad Kadan, and Mikhail Pevzner. 2012. "Asset Liquidity and Stock Liquidity." *Journal of Financial and Quantitative Analysis* 47 (2): 333–64.
- Gow, Ian D, and Daniel Taylor. 2009. "Earnings Volatility and the Cross-Section of Returns." *Deloitte Foundation*. Working Paper.
- Griffin, John M, and Michael L Lemmon. 2002. "Book-to-Market Equity, Distress Risk, and Stock Returns." *The Journal of Finance* 57 (5): 2317–36.
- Gu, Feng. 2005. "Innovation, Future Earnings, and Market Efficiency." *Journal of Accounting, Auditing & Finance* 20 (4): 385–418.
- Guo, Hui, and Robert Savickas. 2008. "Average Idiosyncratic Volatility in G7 Countries." *The Review of Financial Studies* 21 (3): 1259–96.
- 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.
- Hafzalla, Nader, Russell Lundholm, and E Matthew Van Winkle. 2011. "Percent Accruals." *The Accounting Review* 86 (1): 209–36.
- Hahn, Jaehoon, and Hangyong Lee. 2005. "Financial Constraints, Debt Capacity, and the Cross Section of Stock Returns." *Debt Capacity, and the Cross Section of Stock Returns (May 2005)*.
- Hameed, Allaudeen, and G Mujtaba Mian. 2015. "Industries and Stock Return Reversals." *Journal of Financial and Quantitative Analysis* 50 (1-2): 89–117.
- Harvey, Campbell R, and Akhtar Siddique. 2000. "Conditional Skewness in Asset Pricing Tests." *The Journal of Finance* 55 (3): 1263–95.
- Hawkins, Eugene H, Stanley C Chamberlin, and Wayne E Daniel. 1984. "Earnings Expectations and Security Prices." *Financial Analysts Journal* 40 (5): 24–38.

- Heckerman, Donald G. 1972. "Portfolio Selection and the Structure of Capital Asset Prices When Relative Prices of Consumption Goods May Change." *The Journal of Finance* 27 (1): 47–60.
- Hess, Dieter, Daniel Kreutzmann, and Oliver Pucker. 2010. *Projected Earnings Accuracy and the Profitability of Stock Recommendations*. Centre for Financial Research.
- Hirshleifer, David, Po-Hsuan Hsu, and Dongmei Li. 2013. "Innovative Efficiency and Stock Returns." *Journal of Financial Economics* 107 (3): 632–54.
- Hirshleifer, David, and Danling Jiang. 2010. "A Financing-Based Misvaluation Factor and the Cross-Section of Expected Returns." *The Review of Financial Studies* 23 (9): 3401–36.
- Holthausen, Robert W, and David F Larcker. 1992. "The Prediction of Stock Returns Using Financial Statement Information." *Journal of Accounting and Economics* 15 (2-3): 373–411.
- Hou, Kewei, G Andrew Karolyi, and Bong-Chan Kho. 2011. "What Factors Drive Global Stock Returns?" *The Review of Financial Studies* 24 (8): 2527–74.
- Hou, Kewei, and Tobias J Moskowitz. 2005. "Market Frictions, Price Delay, and the Cross-Section of Expected Returns." *The Review of Financial Studies* 18 (3): 981–1020.
- Hou, Kewei, Chen Xue, and Lu Zhang. 2015. "Digesting Anomalies: An Investment Approach." *The Review of Financial Studies* 28 (3): 650–705.
- Huang, Wei, Qianqiu Liu, S Ghon Rhee, and Feng Wu. 2012. "Extreme Downside Risk and Expected Stock Returns." *Journal of Banking & Finance* 36 (5): 1492–502.
- Jagannathan, Ravi, and Zhenyu Wang. 1996. "The Conditional CAPM and the Cross-Section of Expected Returns." *The Journal of Finance* 51 (1): 3–53.
- Jegadeesh, Narasimhan. 1990. "Evidence of Predictable Behavior of Security Returns." *The Journal of Finance* 45 (3): 881–98.
- Jegadeesh, Narasimhan, Joonghyuk Kim, Susan D Krische, and Charles MC Lee. 2004. "Analyzing the Analysts: When Do Recommendations Add Value?" *The Journal of Finance* 59 (3): 1083–1124.
- Jegadeesh, Narasimhan, and Sheridan Titman. 1993. "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency." *The Journal of Finance* 48 (1): 65–91.

- Jiang, Guohua, Charles MC Lee, and Yi Zhang. 2005. "Information Uncertainty and Expected Returns." *Review of Accounting Studies* 10: 185–221.
- Johnson, Travis L, and Eric C So. 2012. "The Option to Stock Volume Ratio and Future Returns." *Journal of Financial Economics* 106 (2): 262–86.
- Kaplan, Steven N, and Luigi Zingales. 1995. "Do Financing Constraints Explain Why Investment Is Correlated with Cash Flow?" *SSRN*. National Bureau of economic research Cambridge, Mass., USA.
- Kelly, Bryan T, Tobias J Moskowitz, and Seth Pruitt. 2021. "Understanding Momentum and Reversal." *Journal of Financial Economics* 140 (3): 726–43.
- Kishore, Runeet, Michael W Brandt, Pedro Santa-Clara, and Mohan Venkatachalam. 2008. "Earnings Announcements Are Full of Surprises." *Available at SSRN 909563*.
- Koijen, Ralph SJ, Tobias J Moskowitz, and Lasse Heje Pedersen. 2012. "Evert b. Vrugt Current Version: May 2012 Preliminary and Incomplete." *None*.
- Korniotis, George M. 2008. "Habit Formation, Incomplete Markets, and the Significance of Regional Risk for Expected Returns." *The Review of Financial Studies* 21 (5): 2139–72.
- Korniotis, George M, and Alok Kumar. 2009. "The Geography of Return Predictability." *None*.
- Kraus, Alan, and Robert H Litzenberger. 1976. "Skewness Preference and the Valuation of Risk Assets." *The Journal of Finance* 31 (4): 1085–1100.
- Kumar, Praveen, Sorin M Sorescu, Rodney D Boehme, and Bartley R Danielsen. 2008. "Estimation Risk, Information, and the Conditional CAPM: Theory and Evidence." *The Review of Financial Studies* 21 (3): 1037–75.
- La Porta, Rafael. 1996. "Expectations and the Cross-Section of Stock Returns." *The Journal of Finance* 51 (5): 1715–42.
- Lamont, Owen, Christopher Polk, and Jesús Saaá-Requejo. 2001. "Financial Constraints and Stock Returns." *The Review of Financial Studies* 14 (2): 529–54.
- Landsman, Wayne R, Bruce L Miller, Ken Peasnell, and Shu Yeh. 2011. "Do Investors Understand Really Dirty Surplus?" *The Accounting Review* 86 (1): 237–58.
- Lebedeva, Olga, Ernst Maug, and Christoph Schneider. 2012. "Trading Strategies of Corpo-

- rate Insiders.” *Preprint*.
- Lee, Charles MC, and Bhaskaran Swaminathan. 2000. “Price Momentum and Trading Volume.” *The Journal of Finance* 55 (5): 2017–69.
- Lettau, Martin, and Sydney Ludvigson. 2001. “Resurrecting the (c) CAPM: A Cross-Sectional Test When Risk Premia Are Time-Varying.” *Journal of Political Economy* 109 (6): 1238–87.
- Lev, Baruch, Doron Nissim, and Jacob Thomas. 2016. “On the Informational Usefulness of r&d Capitalization and Amortization.” In *Visualising Intangibles: Measuring and Reporting in the Knowledge Economy*, 97–128. Routledge.
- Lev, Baruch, Bharat Sarath, and Theodore Sougiannis. 2005. “R&d Reporting Biases and Their Consequences.” *Contemporary Accounting Research* 22 (4): 977–1026.
- Lev, Baruch, and Theodore Sougiannis. 1996. “The Capitalization, Amortization, and Value-Relevance of r&d.” *Journal of Accounting and Economics* 21 (1): 107–38.
- Li Gu, Zhiqiang Wang, Siyi Li, and Jianming Ye. 2009. “Information in Order Backlog: Change Versus Level*.” *Southwestern University of Finance and Economics*.
- Li, Kevin Ke. 2011. “How Well Do Investors Understand Loss Persistence?” *Review of Accounting Studies* 16: 630–67.
- Li, Xi. 2010. “Real Earnings Management and Subsequent Stock Returns.” *Available at SSRN 1679832*.
- Lintner, John. 1965. “Security Prices, Risk, and Maximal Gains from Diversification.” *The Journal of Finance* 20 (4): 587–615.
- Litzenberger, Robert H, and Krishna Ramaswamy. 1979. “The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence.” *Journal of Financial Economics* 7 (2): 163–95.
- Liu, Weimin. 2006. “A Liquidity-Augmented Capital Asset Pricing Model.” *Journal of Financial Economics* 82 (3): 631–71.
- Lo, Andrew W, and Jiang Wang. 2006. “Trading Volume: Implications of an Intertemporal Capital Asset Pricing Model.” *The Journal of Finance* 61 (6): 2805–40.
- Loughran, Tim, and Jay R Ritter. 1995. “The New Issues Puzzle.” *The Journal of Finance*

- 50 (1): 23–51.
- Mayshar, Joram. 1981. “Transaction Costs and the Pricing of Assets.” *The Journal of Finance* 36 (3): 583–97.
- McLean, R David, and Jeffrey Pontiff. 2016. “Does Academic Research Destroy Stock Return Predictability?” *The Journal of Finance* 71 (1): 5–32.
- Menzly, Lior, and Oguzhan Ozbas. 2010. “Market Segmentation and Cross-Predictability of Returns.” *The Journal of Finance* 65 (4): 1555–80.
- Merton, Robert C. 1973. “An Intertemporal Capital Asset Pricing Model.” *Econometrica: Journal of the Econometric Society*, 867–87.
- Michaeli, Roni, Richard H Thaler, and Kent L Womack. 1995. “Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift?” *The Journal of Finance* 50 (2): 573–608.
- Mohanram, Partha S. 2005. “Separating Winners from Losers Among Lowbook-to-Market Stocks Using Financial Statement Analysis.” *Review of Accounting Studies* 10: 133–70.
- Moskowitz, Tobias J, and Mark Grinblatt. 1999. “Do Industries Explain Momentum?” *The Journal of Finance* 54 (4): 1249–90.
- Mossin, Jan. 1966. “Equilibrium in a Capital Asset Market.” *Econometrica: Journal of the Econometric Society*, 768–83.
- Nagel, Stefan. 2005. “Short Sales, Institutional Investors and the Cross-Section of Stock Returns.” *Journal of Financial Economics* 78 (2): 277–309.
- Narayanamoorthy, Ganapathi. 2006. “Conservatism and Cross-Sectional Variation in the Post-Earnings Announcement Drift.” *Journal of Accounting Research* 44 (4): 763–89.
- Novy-Marx, Robert. 2013. “The Other Side of Value: The Gross Profitability Premium.” *Journal of Financial Economics* 108 (1): 1–28.
- Ohlson, James A. 1980. “Financial Ratios and the Probabilistic Prediction of Bankruptcy.” *Journal of Accounting Research*, 109–31.
- Opler, Tim, Lee Pinkowitz, Ren’e Stulz, and Rohan Williamson. 1999. “The Determinants and Implications of Corporate Cash Holdings.” *Journal of Financial Economics* 52 (1): 3–46.

- Ortiz-Molina, Hern'an, and Gordon M Phillips. 2014. "Real Asset Illiquidity and the Cost of Capital." *Journal of Financial and Quantitative Analysis* 49 (1): 1–32.
- Ou, Jane A, and Stephen H Penman. 1989. "Financial Statement Analysis and the Prediction of Stock Returns." *Journal of Accounting and Economics* 11 (4): 295–329.
- Pagano, Marco, and Ailsa R'oell. 1996. "Transparency and Liquidity: A Comparison of Auction and Dealer Markets with Informed Trading." *The Journal of Finance* 51 (2): 579–611.
- Palazzo, Bernardino. 2012. "Cash Holdings, Risk, and Expected Returns." *Journal of Financial Economics* 104 (1): 162–85.
- Parker, Jonathan A, and Christian Julliard. 2005. "Consumption Risk and the Cross Section of Expected Returns." *Journal of Political Economy* 113 (1): 185–222.
- Pastor, Lubos, and Robert F Stambaugh. 2003. "Liquidity Risk and Expected Stock Returns." *Journal of Political Economy* 111 (3): 642–85.
- Patatoukas, Panos N. 2012. "Customer-Base Concentration: Implications for Firm Performance and Capital Markets." *The Accounting Review* 87 (2): 363–92.
- Penman, Stephen H, and Xiao-Jun Zhang. 2002. "Modeling Sustainable Earnings and p/e Ratios with Financial Statement Analysis." *Forthcoming*.
- Piotroski, Joseph D. 2000. "Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers." *Journal of Accounting Research*, 1–41.
- Pontiff, Jeffrey, and Artemiza Woodgate. 2008. "Share Issuance and Cross-Sectional Returns." *The Journal of Finance* 63 (2): 921–45.
- Prakash, Rachna, and Nishi Sinha. 2013. "Deferred Revenues and the Matching of Revenues and Expenses." *Contemporary Accounting Research* 30 (2): 517–48.
- Rozeff, Michael S, and Mir A Zaman. 1988. "Market Efficiency and Insider Trading: New Evidence." *Journal of Business*, 25–44.
- Rubinstein, Mark. 1974. "An Aggregation Theorem for Securities Markets." *Journal of Financial Economics* 1 (3): 225–44.
- Rubinstein, Mark E. 1973. "The Fundamental Theorem of Parameter-Preference Security Valuation." *Journal of Financial and Quantitative Analysis* 8 (1): 61–69.

- Sharpe, William F. 1964. "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk." *The Journal of Finance* 19 (3): 425–42.
- Shu, Tao. 2007. "Trader Composition, Price Efficiency, and the Cross-Section of Stock Returns." *Available at SSRN 890656*. Citeseer.
- Simutin, Mikhail. 2010. "Excess Cash and Stock Returns." *Financial Management* 39 (3): 1197–1222.
- Sloan, Richard G. 1996. "Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings?" *Accounting Review*, 289–315.
- So, Eric C. 2013. "A New Approach to Predicting Analyst Forecast Errors: Do Investors Overweight Analyst Forecasts?" *Journal of Financial Economics* 108 (3): 615–40.
- Soliman, Mark T. 2008. "The Use of DuPont Analysis by Market Participants." *The Accounting Review* 83 (3): 823–53.
- Solnik, Bruno H. 1974. "An Equilibrium Model of the International Capital Market." *Journal of Economic Theory* 8 (4): 500–524.
- Spiess, D Katherine, and John Affleck-Graves. 1995. "Underperformance in Long-Run Stock Returns Following Seasoned Equity Offerings." *Journal of Financial Economics* 38 (3): 243–67.
- . 1999. "The Long-Run Performance of Stock Returns Following Debt Offerings." *Journal of Financial Economics* 54 (1): 45–73.
- Stulz, Rene M. 1981. "A Model of International Asset Pricing." *Journal of Financial Economics* 9 (4): 383–406.
- . 1986. "Asset Pricing and Expected Inflation." *The Journal of Finance* 41 (1): 209–23.
- Sweeney, Richard J, and Arthur D Warga. 1986. "The Pricing of Interest-Rate Risk: Evidence from the Stock Market." *The Journal of Finance* 41 (2): 393–410.
- Teo, Melvyn, and Sung-Jun Woo. 2004. "Style Effects in the Cross-Section of Stock Returns." *Journal of Financial Economics* 74 (2): 367–98.
- Thomas, Jacob, and Frank X Zhang. 2011. "Tax Expense Momentum." *Journal of Accounting Research* 49 (3): 791–821.

- Titman, Sheridan, KC John Wei, and Feixue Xie. 2004. "Capital Investments and Stock Returns." *Journal of Financial and Quantitative Analysis* 39 (4): 677–700.
- Tuzel, Selale. 2010. "Corporate Real Estate Holdings and the Cross-Section of Stock Returns." *The Review of Financial Studies* 23 (6): 2268–2302.
- Valta, Philip. 2016. "Strategic Default, Debt Structure, and Stock Returns." *Journal of Financial and Quantitative Analysis* 51 (1): 197–229.
- Vanden, Joel M. 2004. "Options Trading and the CAPM." *The Review of Financial Studies* 17 (1): 207–38.
- . 2006. "Option Coskewness and Capital Asset Pricing." *The Review of Financial Studies* 19 (4): 1279–1320.
- Vassalou, Maria, and Yuhang Xing. 2004. "Default Risk in Equity Returns." *The Journal of Finance* 59 (2): 831–68.
- Wahlen, James M, and Matthew M Wieland. 2011. "Can Financial Statement Analysis Beat Consensus Analysts' Recommendations?" *Review of Accounting Studies* 16: 89–115.
- Watkins, Boyce. 2003. "Riding the Wave of Sentiment: An Analysis of Return Consistency as a Predictor of Future Returns." *The Journal of Behavioral Finance* 4 (4): 191–200.
- Whited, Toni M, and Guojun Wu. 2006. "Financial Constraints Risk." *The Review of Financial Studies* 19 (2): 531–59.
- Womack, Kent L. 1996. "Do Brokerage Analysts' Recommendations Have Investment Value?" *The Journal of Finance* 51 (1): 137–67.
- Xing, Yuhang. 2008. "Interpreting the Value Effect Through the q-Theory: An Empirical Investigation." *The Review of Financial Studies* 21 (4): 1767–95.
- Xing, Yuhang, Xiaoyan Zhang, and Rui Zhao. 2010. "What Does the Individual Option Volatility Smirk Tell Us about Future Equity Returns?" *Journal of Financial and Quantitative Analysis* 45 (3): 641–62.
- Yan, Shu. 2011. "Jump Risk, Stock Returns, and Slope of Implied Volatility Smile." *Journal of Financial Economics* 99 (1): 216–33.
- Yogo, Motohiro. 2006. "A Consumption-Based Explanation of Expected Stock Returns." *The Journal of Finance* 61 (2): 539–80.