Quantitative Value
Wesley Gray and Tobias Carlisle

The Paradox of Dumb Money

p.7 Buffett (value and fundamentals) vs. Thorp (quantitative and probability)
p.10 Alfred Cowles study on forecasting stock market
p.11 Intrinsic value--not observable, must be estimated
p.12 "Critics of this approach--typically adherents to the efficient market theory--focus on the deficiency of the information available to investors. They argue that price and value cannot be distinct in practice because all information about a security's value is immediately incorporated into the price."
p.14 "It might be more accurate to say that individual stocks appear to be more risky to the naive investor, but are, in the aggregate, no more risky than other stocks."
p.15 Graham's simple value strategy
p.23 Performance of Heebner's CGM Focus Fund
p.27 Simple models vs. expert judgement--simple models tend to win
p.29 James Montier: "Even once we are aware of our biases, we must recognize that knowledge does not equal behavior. The solution lies in designing and adopting an investment process that is at least partially robust to decision-making errors."
p.31 Objectives:
1) Apply the best aspects of quantitative and value investing
2) Merge the approaches of Ed Thorp and Warren Buffett

A Blueprint to a Better Quantitative Value Strategy

p.37 Capital = fixed assets + current assets - current liabilities - cash
Greenblatt's magic formula quantitatively defines Warren Buffett's idea of a wonderful company at a fair price
A "wonderful company" is one that produces a high return on capital
Bargain price is computed using earnings yield (yield = EBIT/TEV)
These metrics are alternatives to Book Value or P/B when searching for value companies
P.38 TEV = market cap + debt + preferred shares + minority interests - excess cash
Eliminating debt, preferred shares and minority interests reduces TEV and increases EBIT/TEV
Greenblatt uses EBIT/TEV as a better earnings metric, Total Enterprise Value (TEV) instead of market capitalization/price allows for apples-to-apples comparison between companies with different capital structures, EBIT is an assessment of earnings from operations that ignores the impact of capital structure on earnings
p.45 Alternative definition of quality is Gross Profitability to Total Assets (GPA)--Novy-Marx
GPA = (Revenue - Cost of Goods Sold)/Total Assets
***Book value is impacted by a company’s capital structure, and thus may not always be appropriate for valuing a company or comparing companies
p.48 Fama and French us B/M as it varies less from period to period compared to other income based metrics (less turnover compared to other metrics)
p.54 Greenblatt study of self managed magic formula account vs. "professionally" (automated) managed magic formula--self managed accounts performed worse than S&P 500 and professionally managed accounts

p.58 Quantitative value checklist
p.61 ***Potential for total loss has three potential indicators
1) Financial statement manipulation
2) Fraud
3) Financial distress and bankruptcy

Hornswoggled! Eliminating Earnings Manipulators and Outright Frauds

p.64 Three tools to uncover earnings manipulation
1) Scaled Total Accruals (STA): uncovers early stage earnings manipulation
2) Scaled Net Operating Assets (SNOA): captures managements historical attempts at earnings manipulation
3) Probability of Manipulation (PROBM): identifies stocks with high probability of fraud or manipulation
p.74 Detecting fraud at Enron

Measuring the Risk of Financial Distress: How to Avoid the Sick Men of the Stock Market

p.83 Altman Z-score used for detecting potential for bankruptcy (WorldCom example)--ultimately found to not be very accurate
p.85 Shumway model offers improvement over Altman
p.86 Campbell model improves accuracy of Shumway--a logistcal regression is transformed into an interpretable probability

Franchises--The Archetype of High Quality

p.95 Franchise: business that earns a high return on capital with a sustainable competitive advantage
p.97 Return on invested capital must exceed the market rate of return to be attractive (Buffett's See's Candies example)
References to cost of capital
p.99 For a stock to be a franchise it must possess a sustainable competitive advantage thus enabling it to produce high returns on capital and pricing power for its product (what Buffett refers to as an economic moat)
p.100 "As many value investors have learned the hard way, the further down the income statement an accounting number appears, the less reliable the number becomes."
p.101 Two reasons for mean reversion of returns:
1) "...any system that combines skill and luck will mean revert over time because the influence of luck diminishes."
2) Businesses with excess returns attract competition. Competing for returns causes the average business to earn only its cost of capital
p.102 Finding franchises means searching for companies that can generate persistent profits over business cycles
1) 8-year free cash-flow on assets (CFOA)
2) 8-year geometric returns on assets
3) 8-year geometric return on capital
p.104 Geometric returns penalizes volatility (volatility drag of geometric vs. arithmetic?)
p.106 Pricing power of a franchise is indicated by profit margin strength
1) profit margin growth

2) profit margin stability

Financial Strength: Foundations Built on Rock

p.114 Financial strength looks for stocks that are positioned to protect their capital, and therefore contribute to the margin of safety
Piotroski F_SCORE: method to sort healthy stocks that are cheap from cheap stocks in distress
F_SCORE uses 9 financial measures focused on 3 key areas
1) profitability
2) financial leverage/liquidity
3) operating efficiency

p.119 Key insight from Piotroski is that quantitatively analyzing financial statements can improve performance
Financial strength score (FS_SCORE)
1) current profitability
2) stability
3) recent operational improvements

p.125 FS_SCORE not used as stand along, but part of a suite of metrics to evaluate financial strength

Price Ratios: A Horse Race

p.129 "Glamour stocks seduce investors who ignore base rates and focus instead on the stocks "story." This can lead investors to extrapolate high historical earnings growth too far into the future, assume and upward trend in stock prices, overreact to good news, or simply conflate an exciting investment opportunity with an exciting technology or idea, irrespective of price."
Why Fama and French use book-to-market for sorting

p.134 Best performing price ratio is EBIT/TEV, followed in a close second by EBITDA/TEV. Worst was forward earnings yield

p.137 EBIT multiple generates highest "alpha" from CAPM regression
EBIT and EBITDA have best risk adjusted returns (both Sharpe and Sortino ratios)

p.141 There is no consistent winner among the ratios considered during economic expansions

Alternative Price Measures-Normalized Earning Power and Composite Ratios

p.148 Long-term price ratio study is inconclusive, averaging ratios over longer periods of time (2 years to 8 years) does not appear to provide any benefit to predictive power

p.151 O'Shaughnessy forms composite ratios and found composite outperformed constituents--any given ratio has periods where it will outperform or under perform (a composite ratio improves the chance of outperformance)

p.162 No composite ratio, long-term average ratio, or combinations thereof was able to produce better results than the one-year EBIT/TEV ratio

Blue Horseshoe Loves Anacott Steel: Follow the Signals From the Smart Money

p.170 Purchasing stocks with recent buy-back announcements produced market beating returns

p.172 "If we examine in aggregate only the dollar amount spent in undertaking buybacks, we find that managements have a poor record repurchasing shares, tending to spend most at peak valuations and least at trough valuations."

p.172 Seek stocks that

-buy back shares at trough valuations
-are miserly with options
-issue shares only when price exceeds intrinsic value
Avoid stocks that
-play games with buyback announcements
-buy backs at high valuations
-issue shares at low valuations

p.174 Need to separate opportunistic from routine insider buying in order to identify a potential market beating circumstance

p.176 Investors purchasing more than 5% of the outstanding stock of a company must file notice with the SEC (schedule 13D if the purchase is an activist holding, 13G if it is a passive holding, or 13F for institutions with discretion of $100M or more)

p.177 2008 paper by Jerry Martin and John Puthenpurackal on Buffett's performance--BRK performance is driven not by traditional "value" stocks but by those whose growth potential is undervalued by the market

p.179 Problems with following "star" managers
1) must pick the "right" manager
2) aggregation of institutional stock purchases to the point where stocks are heavily concentrated with institutions (buying and selling is dominated by a few participants?)

p.180 High short interest (as measured by the short interest ratio or SIR) is an indicator of bearish sentiment

p.182 Positive indicators: buybacks, insider purchases (opportunistic), activist activity, and low SIR
Negative indicators: stock issuance, and high SIR

Bangladeshi Butter Production Predicts the S&P 500 Close

p.189 Two papers on active fund managers
1) "Morningstar Ratings and Mutual Fund Performance"
2) "Luck versus Skill in the Cross Section of Mutual Fund Returns" (Fama-French)

p.193 More information improves confidence that we have in our predictions, but does not improve the accuracy of our predictions

p.194 "The implications for investors are obvious. The decision to purchase a stock or not is a decision about an uncertain future event. Collecting more and more information about a stock will not improve the accuracy of our decision to buy or not as much as it will increase our confidence about the decision."