The Importance of Context in Investment Research

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Themes for today

- Pay attention to the details, particularly the ones that describe the overall context

- When possible get your research results first- or second-hand
  - If second-hand, have more than one person read and report back on the paper
  - If third-hand or further, actually check out the paper to make it second-hand

- Regularly remind yourself of our behavioral biases – being alert to them is the first step toward mitigating them

How We Know What Isn't So: The Fallibility of Human Reason in Everyday Life, by Thomas Gilovich, 1991

- Motivational bias to our belief: Seeing what we want to see
  - "Man prefers to believe what he prefers to be true." Francis Bacon, Chapter 5

- Second-hand information: Sharpening and leveling
  - To tell a better story, we emphasize what we think is most interesting and de-emphasize the rest
  - "What ails the truth is that it is mainly uncomfortable, and often dull. The human mind seeks something more amusing, and more caressing." H.L. Mencken, Chapter 6

Really?

- A quote from a paper presented earlier this year
  - "Third, the behavioral literature finds that the longer the forecast horizon, the more optimistic are economic agents' forecasts (e.g., Ganzach and Krantz (1991) and Amir and Ganzach (1998))."

- Here's what Ganzach and Krantz (1991) have to say
  - "In this paper we demonstrate that intuitive numerical predictions can be somewhat regressive. This moderation of predictions is asymmetric: predictions are more regressive at low than at high values of the predictor. [...] Third is leniency, a heuristic suggesting that the higher the uncertainty, the more positive should be the predictions."

Help from a software provider?

- A consultant at a software provider is charged with helping clients (like us) implement interesting models in their software

- One day in 2009, he publishes his own screen for S&P 500 stocks based on a model created by Piotroski

- Joseph Piotroski, "Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers", Journal of Accounting Research, 2000

- Nine 0/1 factors
  - Profitability: ROA, CFO, ΔROA, and F_ACCRUAL
  - Leverage, Liquidity and Source of Funds: ΔLEVER, ΔLIQUID and EQ_OFFER
  - Operating Efficiency: ΔMARGIN and ΔTURN

Help from a software provider?

- Composite signal is sum of the nine indicators
  - Split into two groups: high and low signal

- Sample: 1976-1996
  - Start with Compustat data, require market value, book value
  - Form book-to-market quintiles. Keep the highest book-to-market quintile firms with enough data to calculate the nine indicators
  - Final sample: 14,043 high BM firms across the 21 years

- Results:
  - "First, I show that the mean return earned by a high book-to-market investor can be increased by at least 7½ percent annually through the selection of financially strong high BM firms."

Piotroski, Start of the Abstract

- "This paper examines whether a simple accounting-based fundamental analysis strategy, when applied to a broad portfolio of high book-to-market firms, can shift the distribution of returns earned by an investor.

- I show that the mean return earned by a high book-to-market investor can be increased by at least 7½ percent annually through the selection of financially strong high BM firms while the entire distribution of realized returns is shifted to the right. In addition, an investment strategy that buys expected winners and shorts expected losers generates a 23 percent annual return between 1976 and 1996 and the strategy appears to be robust across time and to controls for alternative investment strategies.

- Within the portfolio of high BM firms, the benefits to financial statement analysis are concentrated in small and medium sized firms, companies with low share turnover and firms with no analyst following, yet this superior performance is not dependent on purchasing firms with low share prices."

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Piotroski setup

- Nine 0/1 signals based on financial statements

- Two categories, high and low

- Analyze the return spreads

- Broad universe, then high B/M quintile
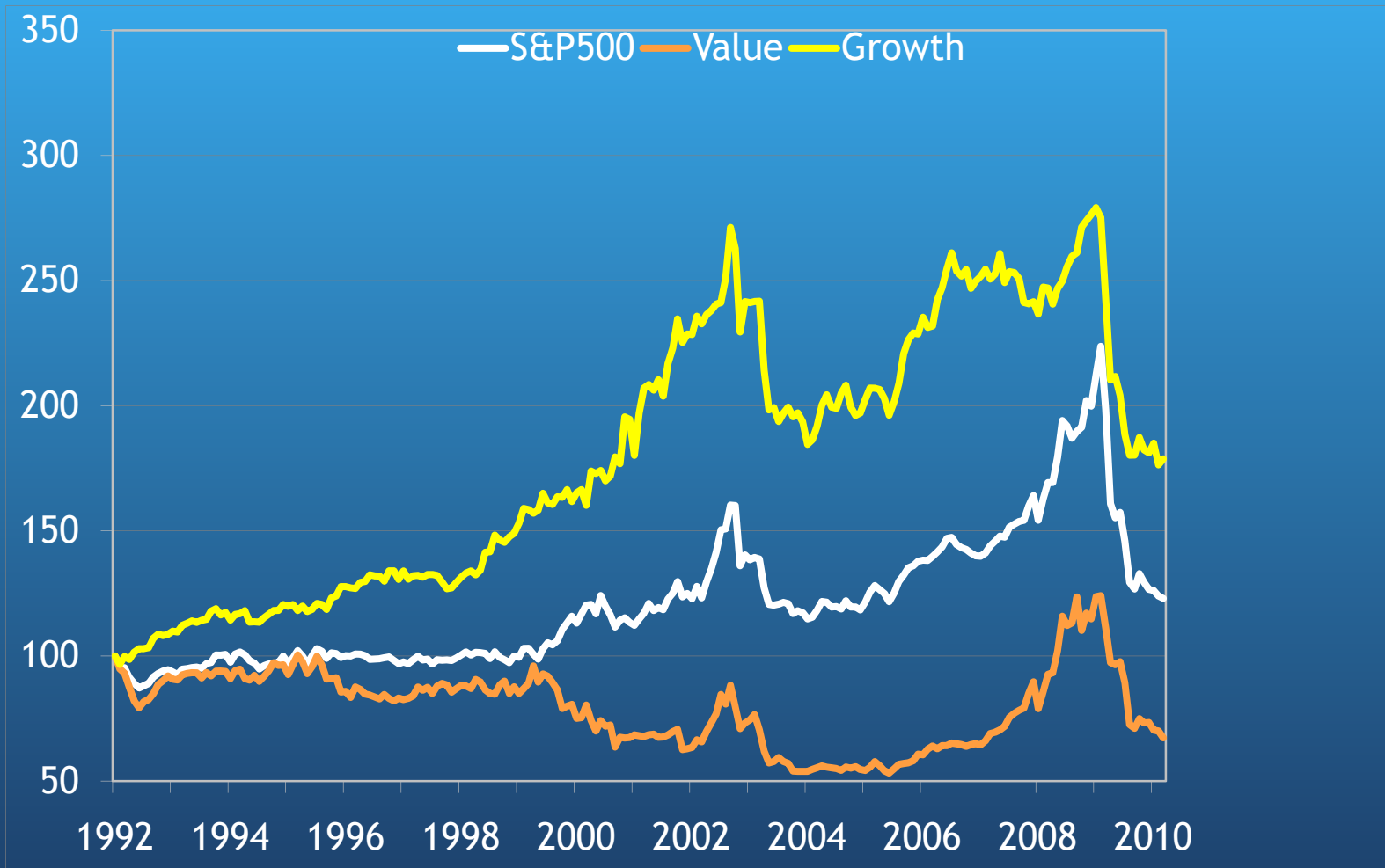
Piotroski results, 1976-1996

Highlights from Table 3 Panel A: One-year Raw Returns				
	Mean	Median	% Positive	nobs
All Firms	23.9%	10.5%	61%	14,043
Low Score	7.9%	-2.8%	46%	396
High Score	31.3%	16.6%	67%	1448
High – Low	23.4%	19.3%	21%	
t-stat/(p-value)	5.594	-0.0001	-0.0001	-
Bootstrap Rslt	0/1000	0/1000	-	-
(p-value)	0	0	-	-

a A raw return is calculated as the twelve month buy-and-hold return of the firm starting at the beginning of the fifth month after fiscal year end. Return compounding ends the earlier of one year or the last day of CRSP reported trading. If the firm delisted, the delisting return is assumed to be zero.

b F_SCORE is equal to the sum of the nine individual binary signals, where zero equals the least favorable set of signals and 9 equals the most favorable set of signals. The Low F_SCORE portfolio consists of firms with an aggregate score of 0 or 1; the High F_SCORE portfolio consists of firms with a score of 8 or 9.

c T-statistics for portfolio means (p-value for medians) are from a two-sample t-test (signed rank wilcoxon test); empirical p-values are from bootstrapping procedures based on 1,000 iterations. P-values for the proportions are based on a binomial test of proportions.

Piotroski results, more recent data, S&P 500

Piotroski results, more recent data, S&P 1500
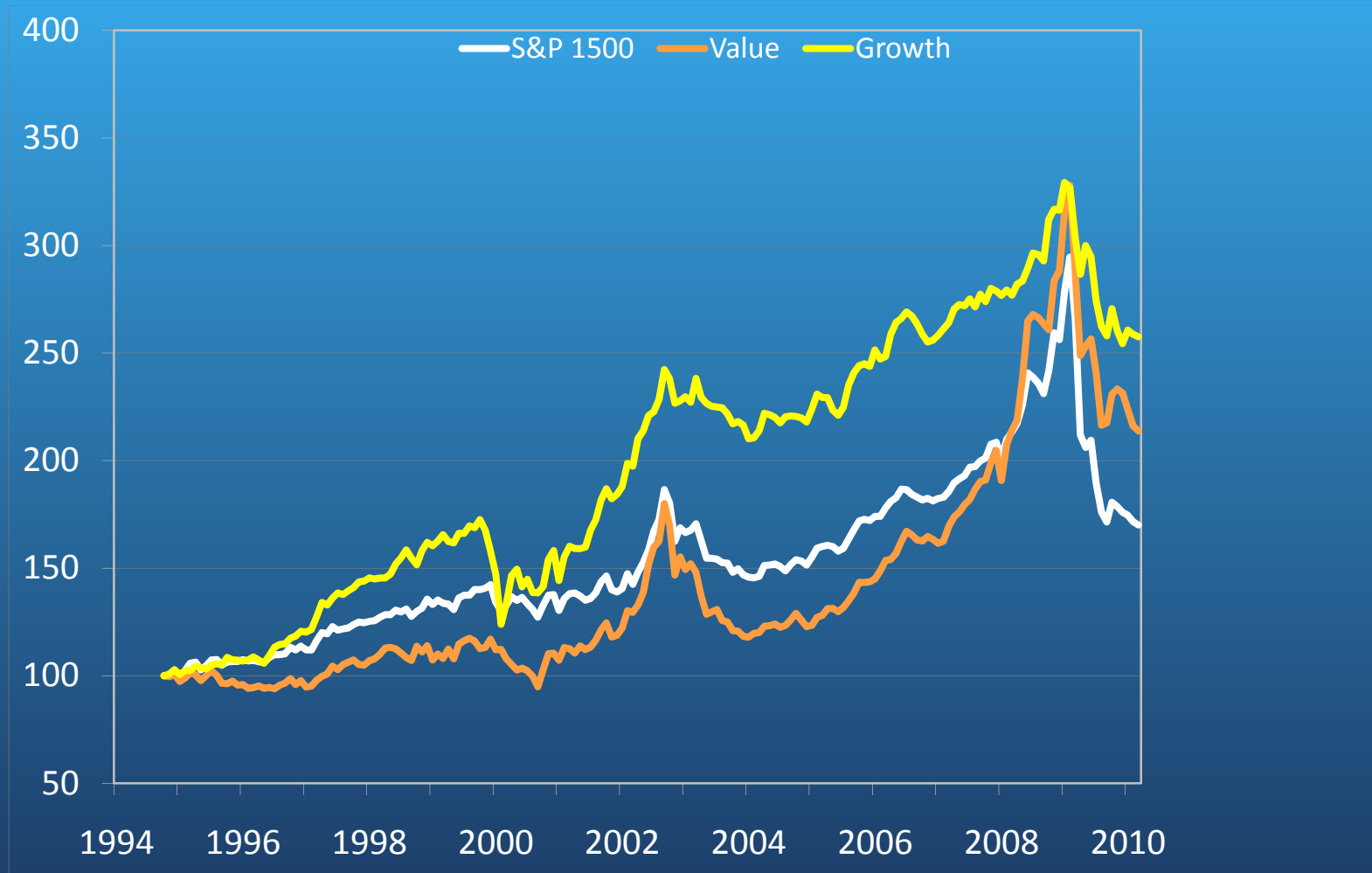
Piotroski results, more recent data

Universe	St Dt	End Dt	Avg Ann Rtn (%)	Ann Stdev (%)	IR	Avg Pctg Pos Months
S&P 500	Jan-92	Feb-10	1.15	11.1	0.103	55%
S&P 500 - Value 1/3	Jan-92	Feb-10	-2.16	15.3	-0.141	55%
S&P 500 - Growth 1/3	Jan-92	Feb-10	3.25	10.9	0.298	54%
S&P 1500	Oct-94	Feb-10	3.50	10.9	0.322	54%
S&P 1500 - Value 1/3	Oct-94	Feb-10	5.05	13.0	0.387	54%
S&P 1500 - Growth 1/3	Oct-94	Feb-10	6.33	10.6	0.600	54%

Our methodology: monthly rebalancing and holding periods, split the sample into thirds based on book to market

Another example
Including and excluding negative earners

- Four signals
  - Book to market
  - Earnings before extraordinary items to price
  - Price momentum, 11 months trailing lagged one month
  - Simple model = ½ B/M + ½ Momentum

- S&P 1500 over Jan 1995 – Feb 2010

- Monthly rebalancing, split the sample into those with negative earnings and those with positive earnings

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Negative vs. Positive Earners, Preliminary results, S&P 1500

Universe	Strategy	Avg Ann Rtn (%)	Ann Stdev (%)	IR
S&P 1500	B/P	5.8	17.8	0.33
S&P 1500 - Negative Earners	B/P	-0.4	32.0	-0.01
S&P 1500 - Positive Earners	B/P	4.9	14.4	0.34
S&P 1500	E/P	4.7	15.9	0.30
S&P 1500 - Negative Earners	E/P	-7.3	28.4	-0.26
S&P 1500 - Positive Earners	E/P	9.6	13.1	0.73
S&P 1500	Mom	-2.0	25.3	-0.08
S&P 1500 - Negative Earners	Mom	-4.5	36.8	-0.12
S&P 1500 - Positive Earners	Mom	-1.0	20.9	-0.05
S&P 1500	Simple model	1.4	16.1	0.08
S&P 1500 - Negative Earners	Simple model	-0.6	23.2	-0.02
S&P 1500 - Positive Earners	Simple model	2.2	14.9	0.15

Jan 1995 – Feb 2010

Number of negative earners in the S&P 1500
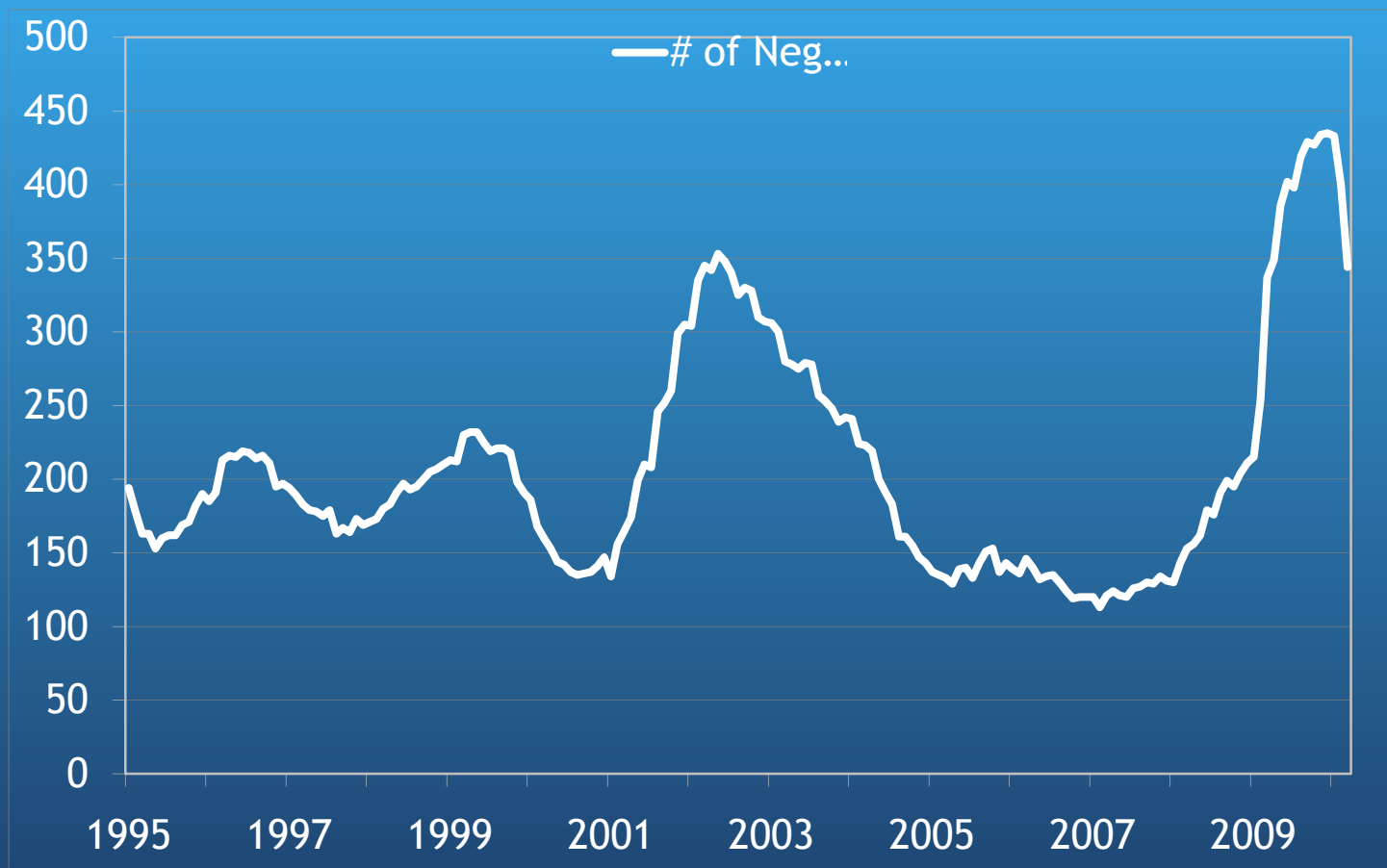
More second-hand info:
A quote from Einstein?

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- "Somebody who reads only newspapers and at best books of contemporary authors looks to me like an extremely near-sighted person who scorns eyeglasses. He is completely dependent upon the prejudices and fashions of his times, since he never gets to see or hear anything else. And what a person thinks on his own without being stimulated by the thoughts and experiences of other people is even in the best case rather paltry and monotonous.

- There are only a few enlightened people with a lucid mind and style and with good taste within a century. What has been preserved of their work belongs among the most precious possessions of mankind. We owe it to a few writers of antiquity that the people of the Middle Ages could slowly extricate themselves from the superstitions and ignorance that had darkened life for more than half a millennium. Nothing is more needed to overcome the modernist's snobbishness."

- Einstein, Ideas and Opinions, 1994?, originally 1954, then 1982, p. 70?

Recommendations

- Read source papers
  - If possible, have more than one person read the papers, so the sharpening and leveling are diversified

- Actually do your own backtests
  - Replicate the source's result

- Understand your model's limitations
  - When and where does it work? Not work?
    - Performance across different partitions: size, sector, time periods

- Pay attention to the details and regularly acknowledge our biases