

4 T H A N N U A L

Innovative **ALTERNATIVE** **INVESTMENT STRATEGIES**

This is Your Brain on Stocks:

Behavioral Economics, Neurofinance
and Why You Are Not Wired to Make
Intelligent Financial Decisions

The cognitive shortcomings of Investors

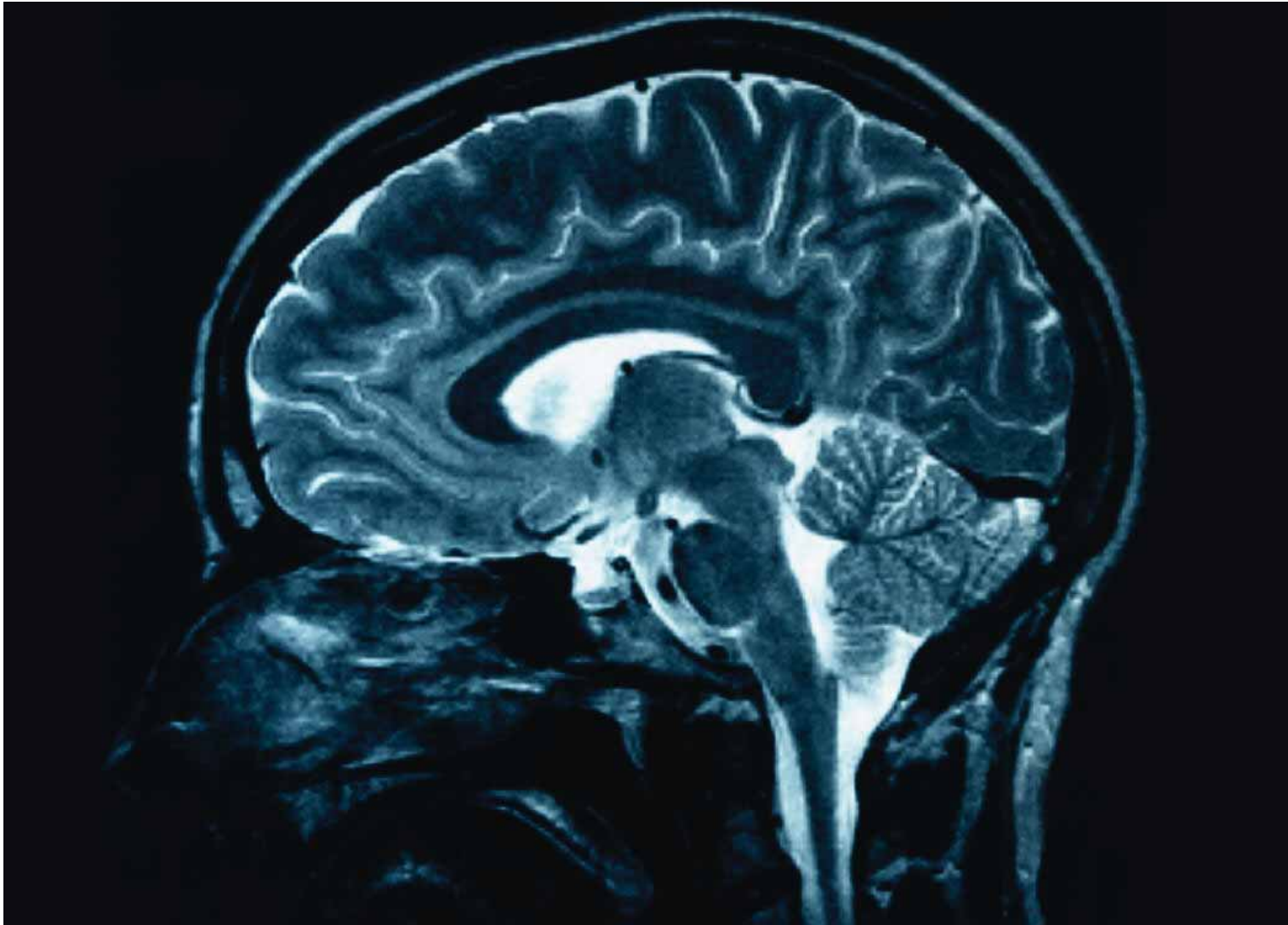
Presentation by Barry Ritholtz

July 22, 2013



This is Your Brain.
This is Your Brain on Drugs
1987 PSA

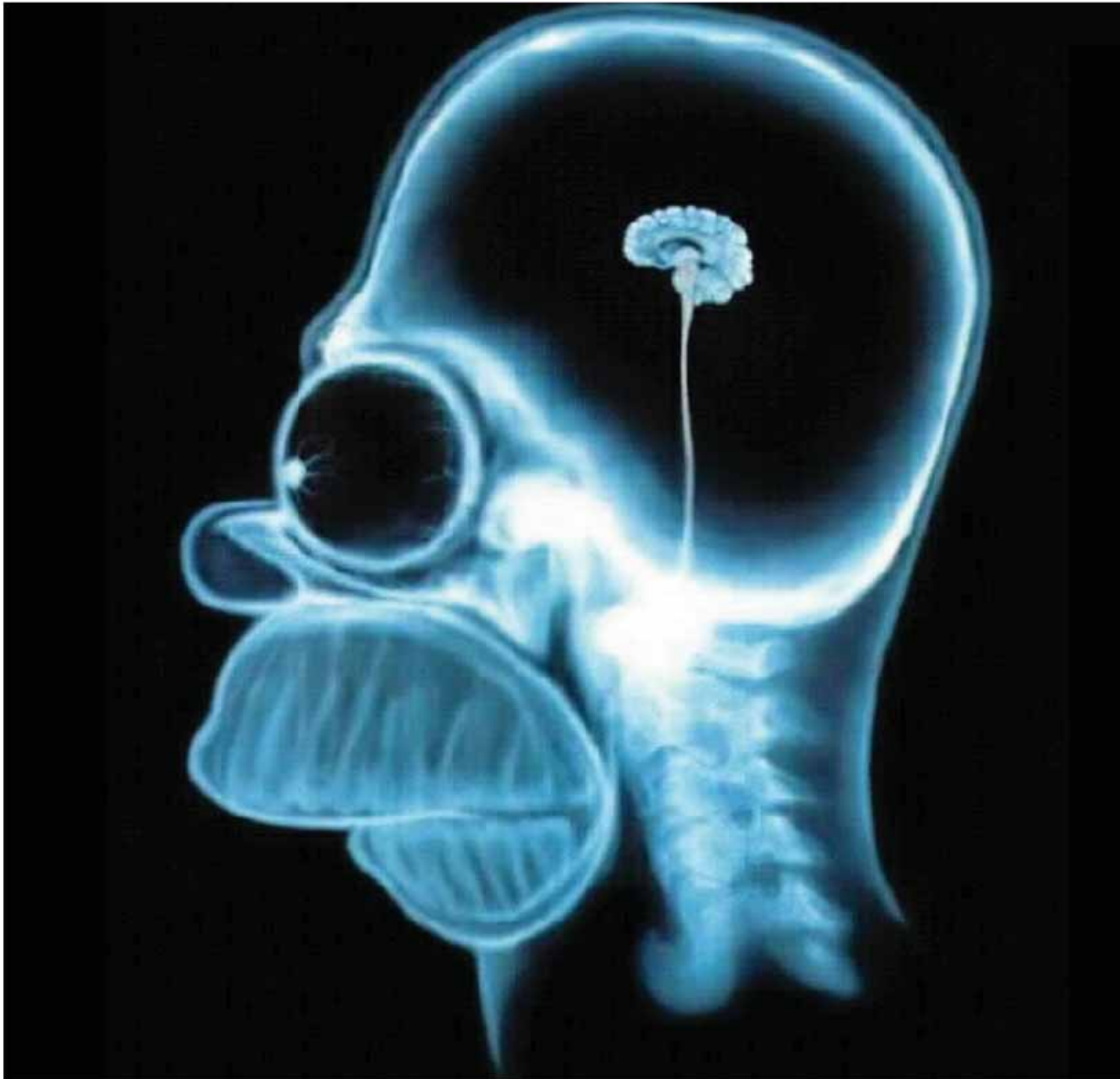




This is your brain

Your brain weighs 3 pounds, and is 100,000 years old. It is a “*dynamic, opportunistic, self-organizing system of systems.*” MRIs have revealed to Neurologists what our brains looks like when making decisions . We can observe it 1) in real time; 2) under actual conditions, and 3) in reaction to financial risk/reward stimuli.

Once we begin trading stocks, however, our brains begin to undergo subtle physical change that we can actually see in the MRIs of Traders . . .



**This
is
your
brain
on
stocks**

What Has Your Brain Evolved To Do?

4Fs versus Capital Markets Risk Analysis

Behavioral Economics

1. Herding, Groupthink
2. Experts: Articulate Incompetents
3. Optimism Bias
4. Confirmation Bias
5. Recency Effect
6. Emotions impact perception

Neuro-Finance

7. Anticipation vs. Rewards
8. Selective Perception & Retention
9. A Species of Dopamine Addicts
10. Endowment Effect of Ownership
11. Monkeys Love a Narrative
12. Cognitive Errors Impact Processes

A brief intro to
**Behavioral
Economics**



JUST A NORMAL DAY AT THE NATION'S MOST IMPORTANT FINANCIAL INSTITUTION...

Herding



Mutual of Omaha

"Lone Gazelle"

Wall St. Groupthink: Buy Buy Buy!

1. Only 5% of Wall Street Recommendations Are “SELLS”
-NYT, May 15, 2008
2. Why Analysts Keep Telling Investors to Buy
-NYT, February 8, 2009
3. Equity Analysts Too Bullish and Bearish at the Exact Wrong Times
-McKinsey, June 2nd, 2010
4. None of the S&P 1500 have a Wall St. Consensus “Sell” on them
-Robert Powell, Editor, Retirement Weekly, August 2011



It is better for one's reputation to fail conventionally than to succeed unconventionally. -John Maynard Keynes

Optimism Bias



Dunning Kruger Effect: DK is a cognitive bias in which unskilled people make poor decisions and reach erroneous conclusions, but their incompetence denies them the *metacognitive* ability to recognize these mistakes.

Metacognition: The less competent you are at a task, the more likely you are to over-estimate your ability to accomplish it well. *Competence* in a given field actually weakens *self-confidence*.

This has devastating consequences in the investment world.

Passive vs Active Management

The Math of Active Management is Daunting:

1. Only 20% of active managers (1 in 5) can outperform their benchmarks in any given year;
2. Within that quintile, less than half (1 in 10) outperform in 2 out of the next 3 years;
3. Only 3% stayed in the top 20% over 5 years (1 in 33)
4. Once we include costs and fees, less than 1% (1 in 100) manage to outperform (net).
5. What are the odds you will pick that 1 in 100 manager?

“Expert” Forecasting versus Ambiguous Uncertainty

Bennett Goodspeed, *The Tao Jones* (1984) discussed
“The articulate incompetents:”

- Expert forecasters do no better than the average member of the public;
- The more confident an expert sounds, the more likely he is to be believed by TV viewers
- Experts who acknowledge that the future is inherently unknowable are perceived as being uncertain – and therefore less trustworthy. (Isaiah Berlin: Hedgehog vs Fox)
- The more self-confident an expert appears, *the worse their track record is likely to be.*
- Forecasters who get a single big outlier correct are more likely to underperform the rest of the time.

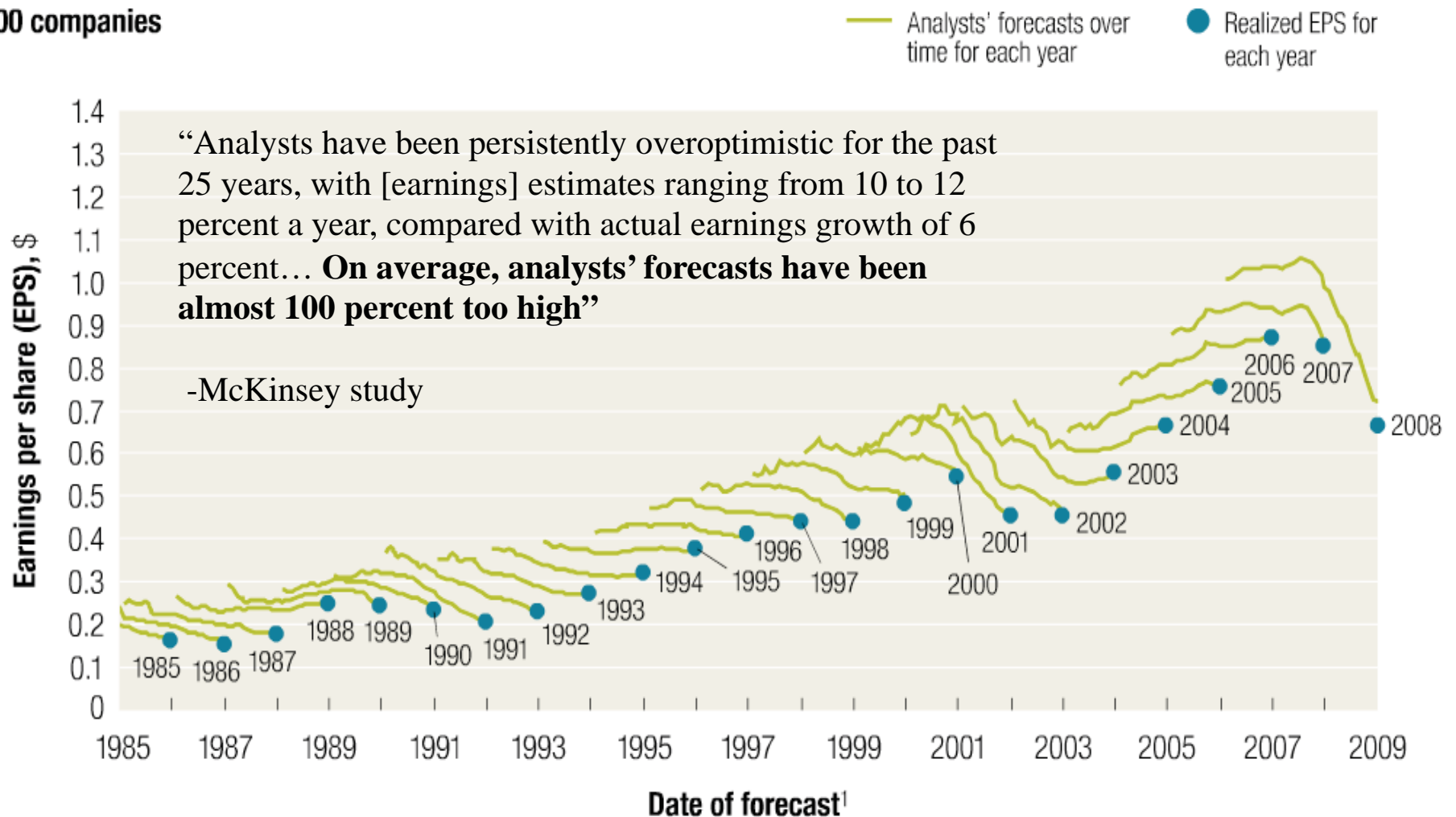


*with apologies to Robt. Day
& the New Yorker* H008

*“The bottom’s in. . . The bottom’s in
. . . The bottom’s in. . .”*

Analysts: Over-Optimistic Group Think

S&P 500 companies



Confirmation Bias

Selective Perception & Retention

1. We tend to read that which we agree with; We avoid that which disagrees with our preconceived biases, notions or ideologies;
2. Our biases change the way we perceive objects – literally, the way we see the world.
3. The same biases affect our memories – we retain *less* of what we disagree with . . .
4. *Expectations Affect Perception*



Beware the Recency Effect

WSJ: 2007

U.S. STOCKS | OCTOBER 15, 2007

Exorcising Ghosts of Octobers Past

Despite Housing Slump, Crashes Such as in 1987 Likely to Stay Memories

Article

Comments

Email Print Save This Like + More

By E.S. BROWNING

See Corrections & Amplifications item below.

With the stock market booming lately, many investors are putting aside worries about the housing slump and the summer's credit crunch.

At the same time, some are thinking about a looming anniversary.



WSJ: 2010

MARKETS | MAY 17, 2010

How the 'Flash Crash' Echoed Black Monday

May 6 Selloff Had Parallels to 1987; Electronic Trading Magnified Selling Pressure

Article

Interactive Graphics

Comments (26)

Email Print Save This Like 16 + More Text

By SCOTT PATTERSON



Agence France-Presse/Getty Images

The Black Monday crash on Oct. 19, 1987, above, sent the Dow industrials down 508 points—or a startling 22.6% in a day.

What Just Happened vs. What is Going to Happen

Time, June 2005

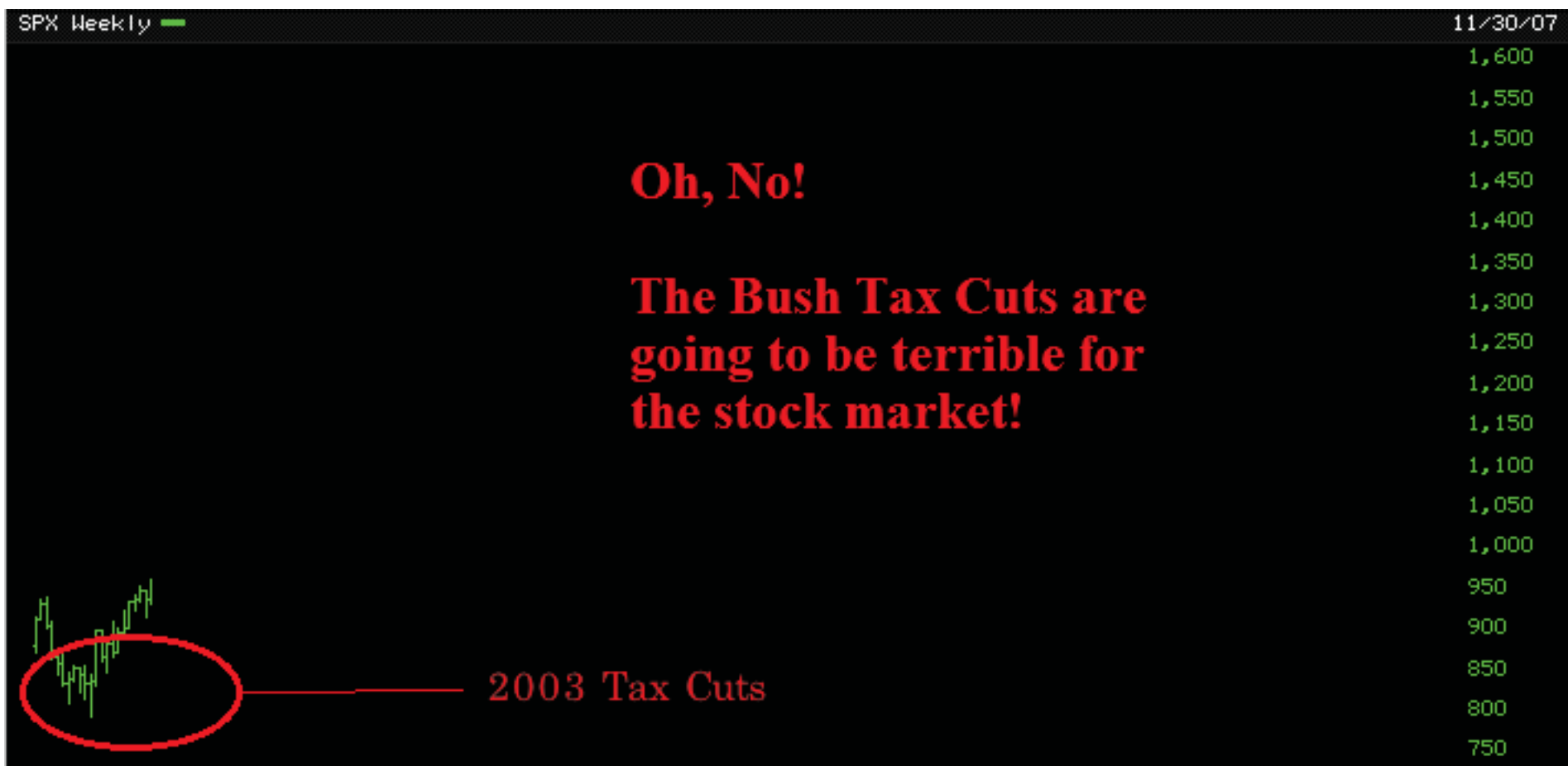


Fortune, June 2005



2003: Politics and Asset Management Don't Mix

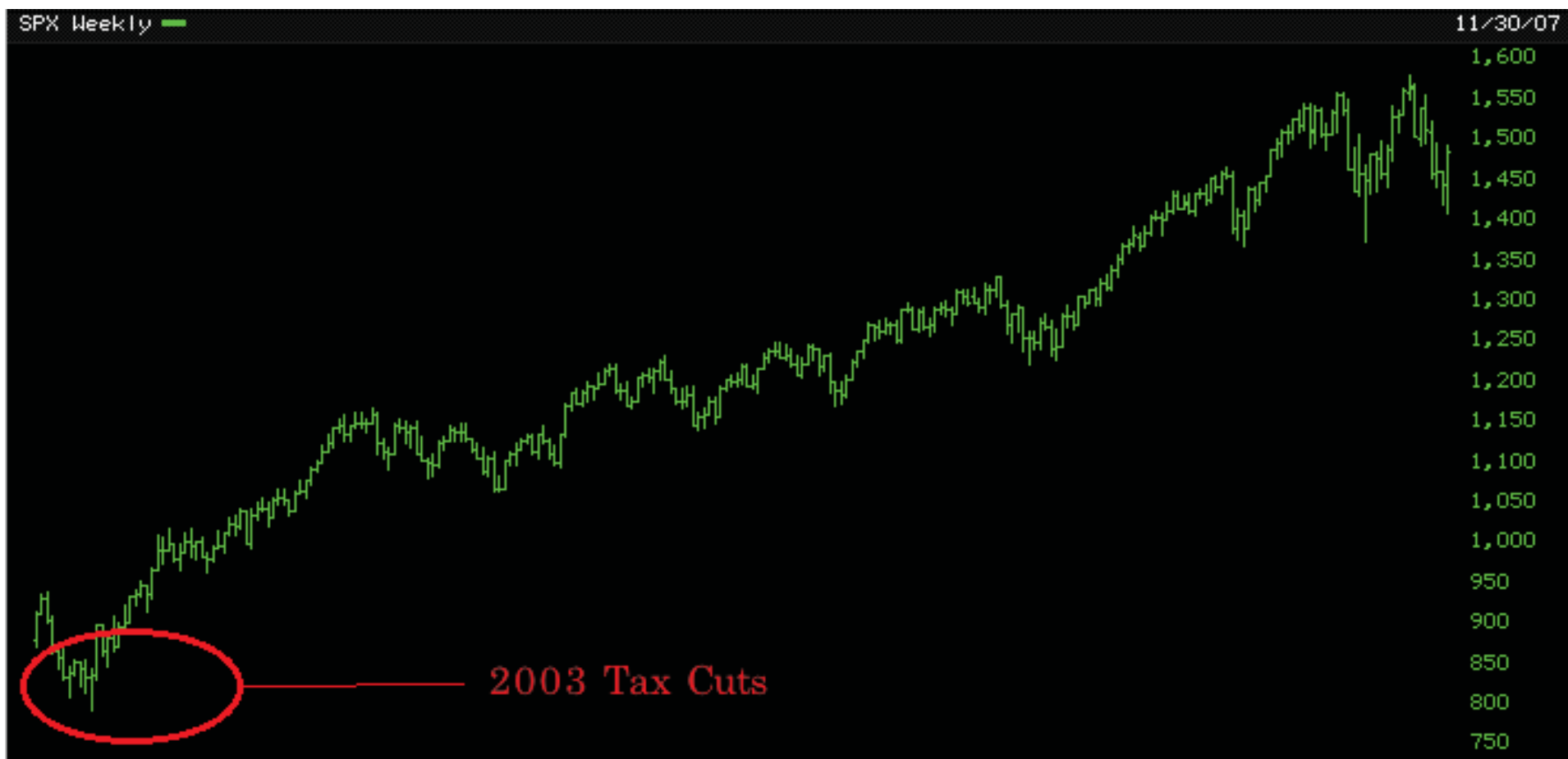
These are poorly designed tax cuts - Stay Out of Markets!



2003: Politics and Asset Management Don't Mix

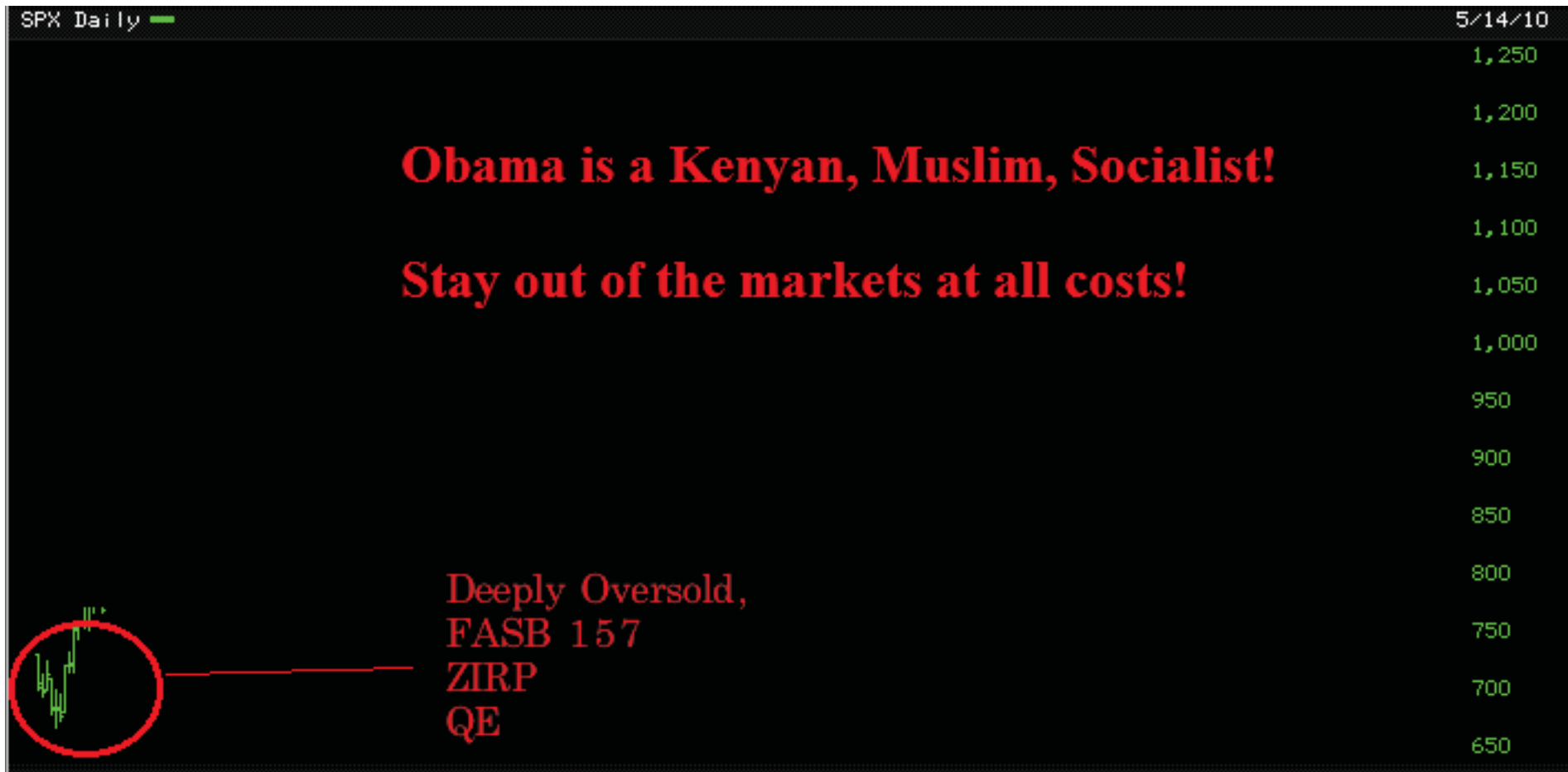
2003 Tax Cuts > \$1 Trillion

*How did that political trade – up over 90% over 4 years –
work out for you . . . ?*



2009: Political Investing

Obama is a Socialist! Stay Out of Markets!



2009: Politics and Asset Management Don't Mix

FASB 157, ZIRP, QE + VERY Oversold Markets

*The political trader missed the best rally in a generation –
Up 140% over 50 months*



A Species of Dopamine Addicts



The Dawn of Boredom

What does this mean for investors?

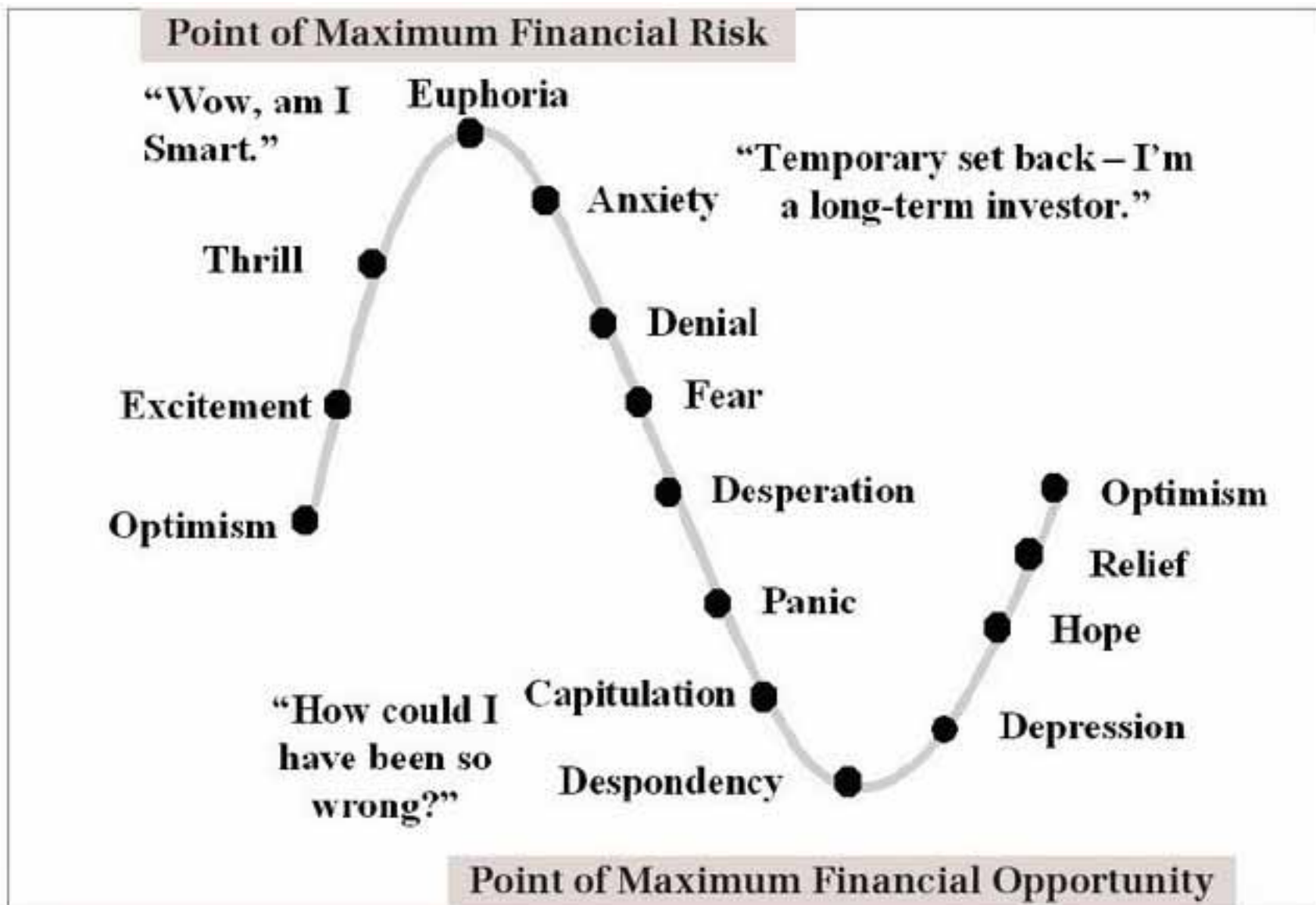
- We have an Optimism bias (helps our survival).
- Our brains are better at processing good news about the future than bad.
- *Anticipation of financial reward* > than actual benefits (Buy Rumor, Sell News)
- Gamblers, Alcoholics, Sex Addicts, Junkies, OA, Hyper-Traders = *Dopamine High*.

Emotions Affect Investment Decisions

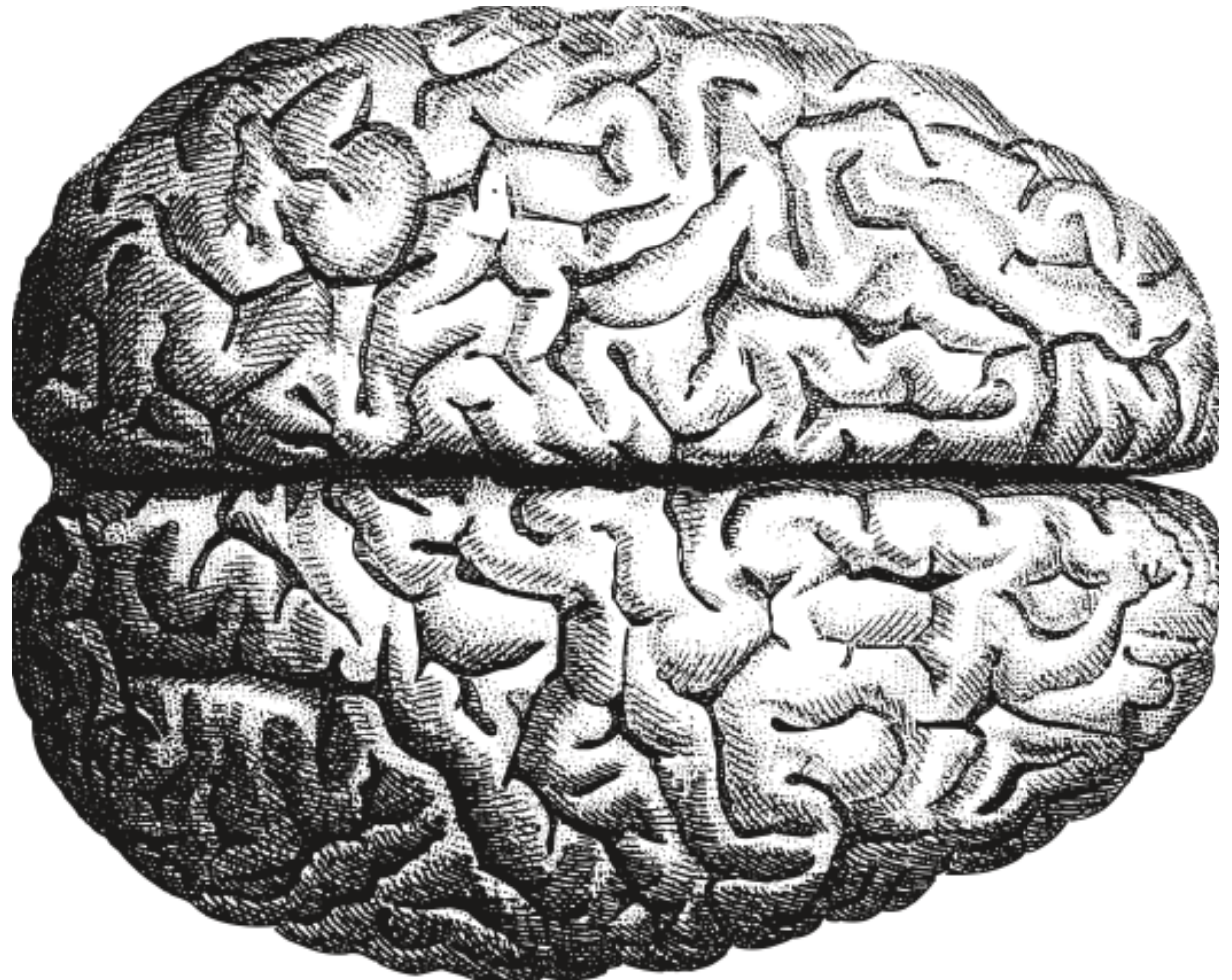
1. Emotions change the way we perceive events (e.g., Sports)
2. “Buy to the sound of cannons, sell to the sound of trumpets.” -Attributed to British banker Nathan Mayer Rothschild, during the Napoleonic wars

“Buy the Rumor, Sell the News”
3. Anticipation vs. Rewards: Is it in the Stock or in the Brain?

Sentiment Cycle



A brief intro to
Neuro
Finance



If u cn rd ths

Olny srmatt poelpe can raed tihs.

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aulaclty uesdnatnrd waht I was
rdanieg. The phaonmneal pweor of
the hmuamnid, aoccdnig to a
rscheearch at Cmabrigde
Uinervtisy, it deosn't mtttaer in
waht oredr the ltteers
in a wrod are, the olny iprmoatnt
tihng is taht the frist and lsat
ltteer be in the rghit pclae. The
rset can be a taotl mses and you
can still raed it wouthit a
porbelm.

Tihs is bcuseae the huamn mnid
deos not raed ervey lteter by
istlef, but the wrod as a wlohe.
Amzanig huh? yaeh and I awlyas
tghuhot slpeling was ipmorantt! if
you can raed tihs psas it
on !!

IF YOU CAN READ THIS
WITH EASE THEN YOU ARE
INCREDIBLY TALENTED AT
READING BACKWARDS,
WHICH IS AN INCREDIBLY
POINTLESS TALENT
TO HAVE.

When it absolutely positively
has to deceive your eyes overnight



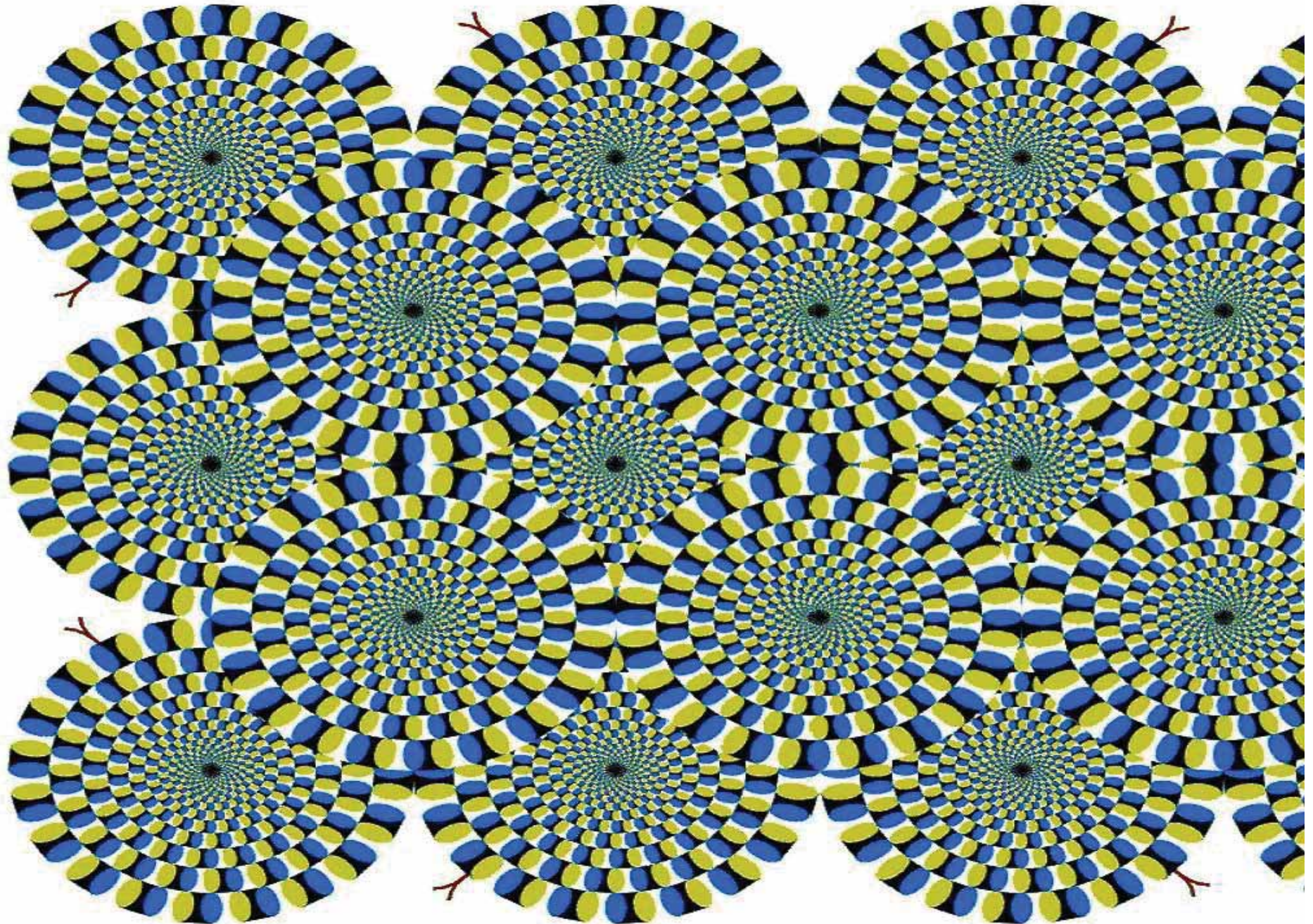
Stroop Effect: Language vs. Color

As fast as you can:

1. Read each word in order
2. Say *the color* of each word

YELLOW	BLUE	ORANGE
BLACK	RED	GREEN
PURPLE	YELLOW	RED
ORANGE	GREEN	BLACK
BLUE	RED	PURPLE
GREEN	BLUE	ORANGE

This animation . . .



. . . is not an animation

Monkeys Love a Narrative



We prefer stories to data –

Pre-writing, story-telling is how
Humans evolved to share information

We are vulnerable to anecdotes that
mislead or present false conclusions
unsupported by data

“We have met the enemy, and he is us.”

-Walt Kelly, Pogo, 1971



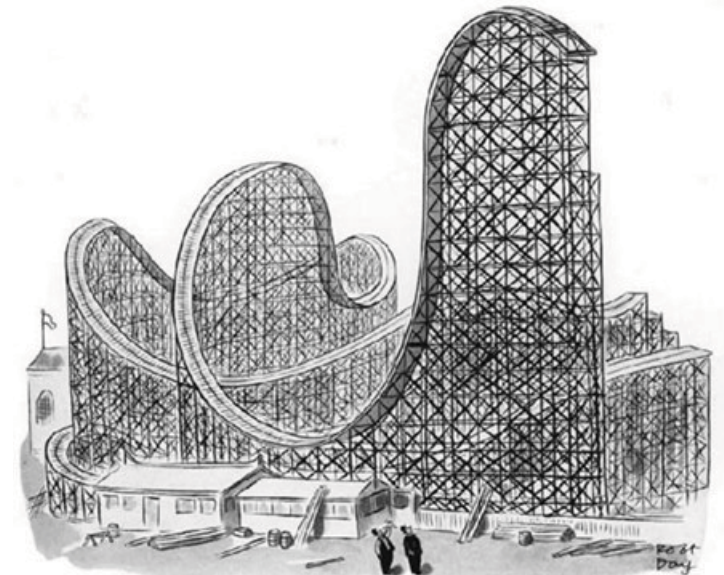
*Now I understand these
cognitive issues, what can I
do about them?*



**Avoid making all the usual errors
investors make!**

Top 10 Investor Errors

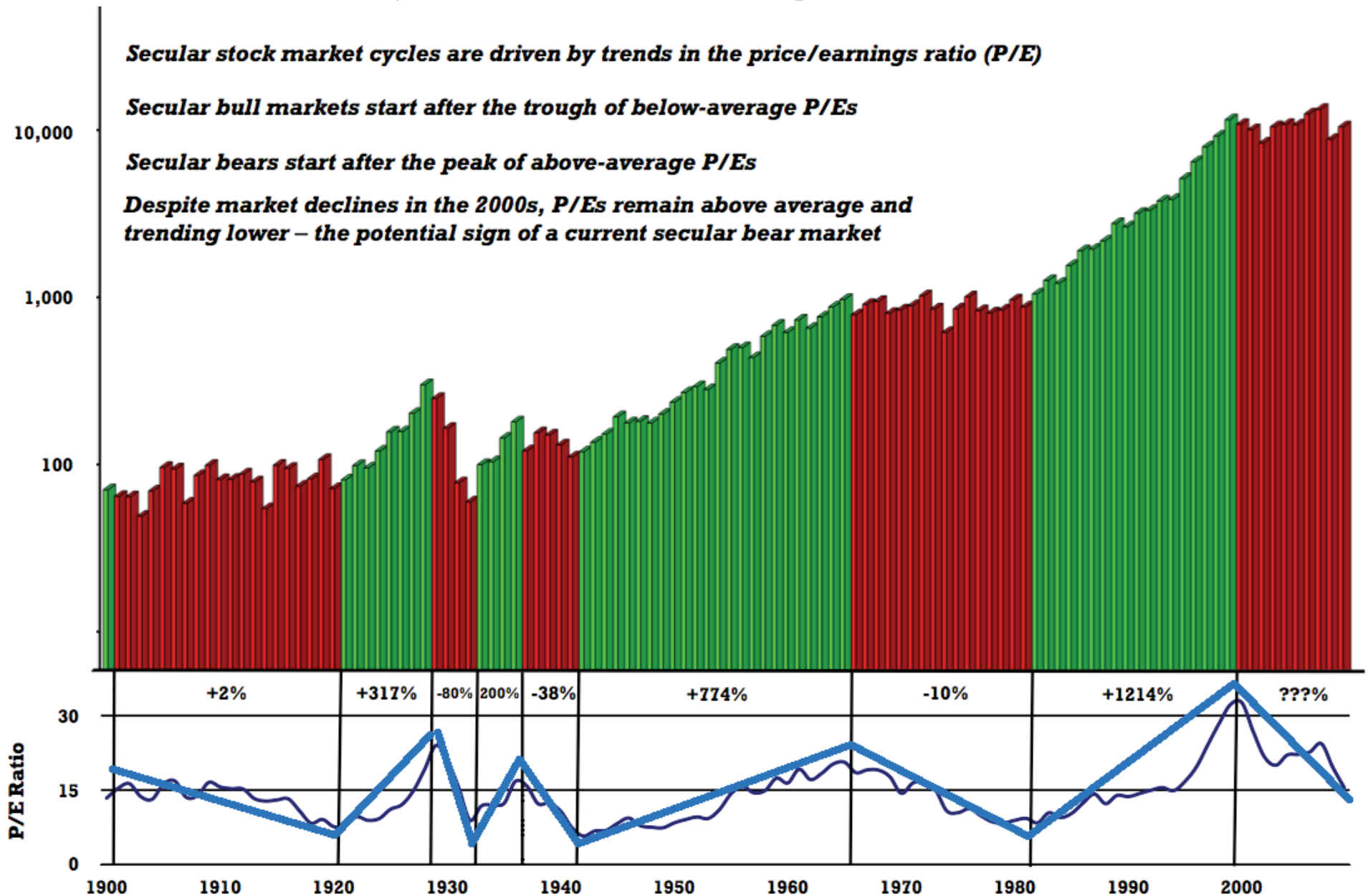
1. High Fees Are A Drag on Returns
2. Reaching for Yield is Costly
3. Never Confuse Past Performance with Future Potential
4. Asset Allocation Matters More than Stock Picking or Market Timing
5. Passive vs. Active Management
6. The Future is Inherently Uncertain
7. Understand the Long Cycle
8. Be aware of your Cognitive Errors
9. Allow Compounding to work for you
10. You (and your Behavior) Are Your Own Worst Enemy



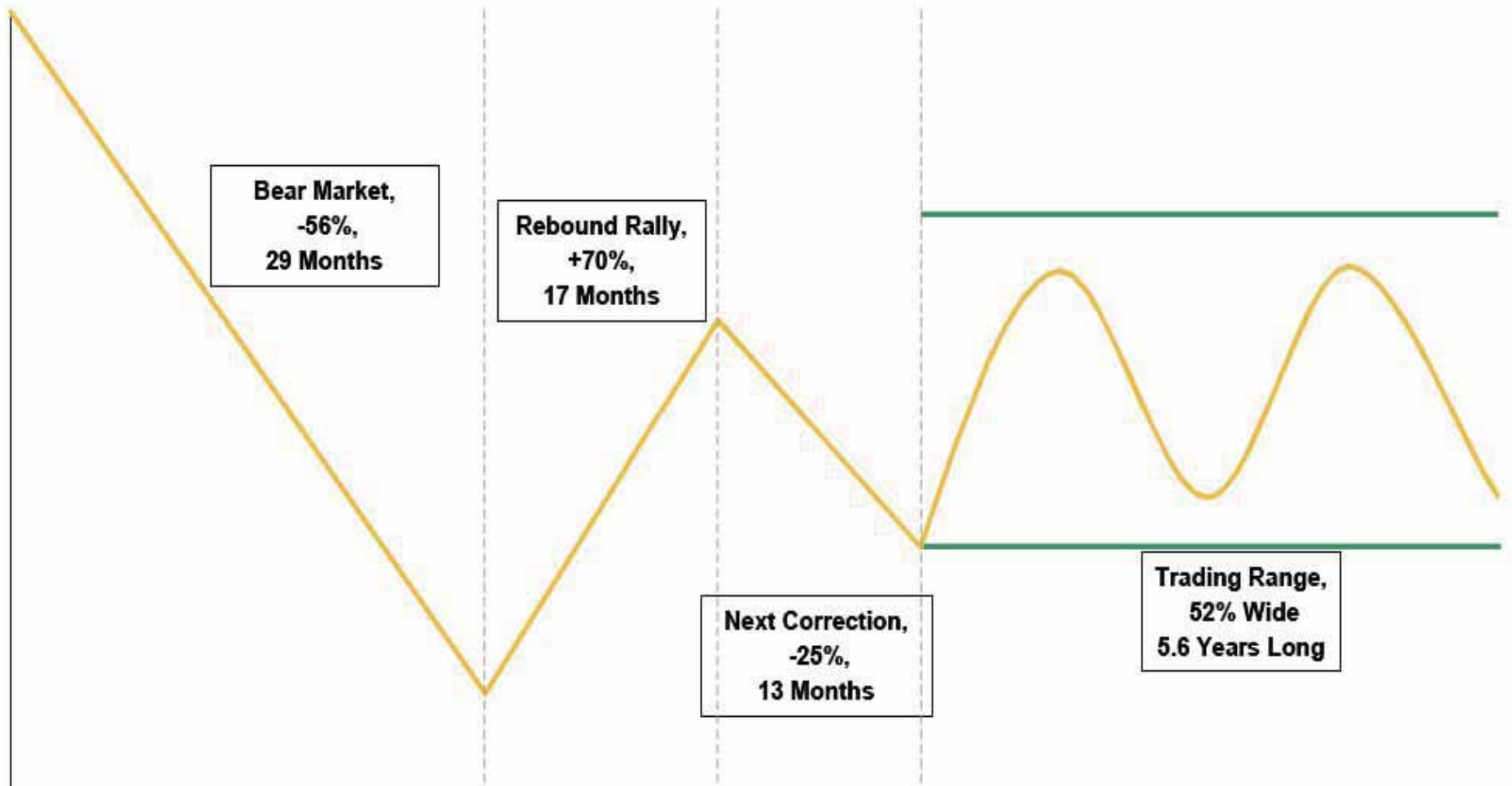
STOCK MARKET. THE RIDE

Understand the Long Cycle

100 Years of Secular Markets, P/E Expansion & Contraction

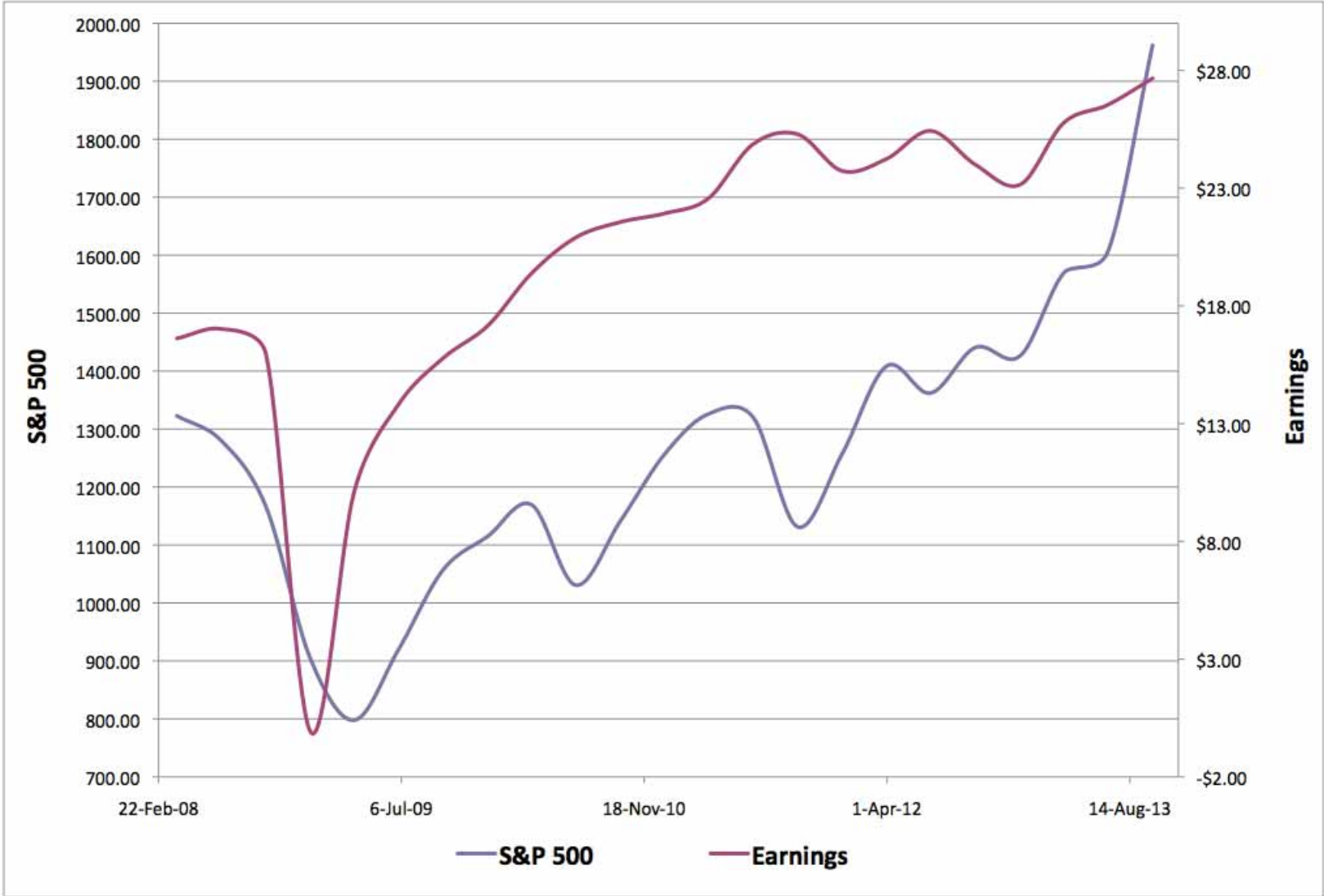


Composite 19 Secular Bear Markets



Currently we are likely to be over halfway in the rebound rally. We will be watching our market timing indicators, policymakers' action, inflation and Chinese growth surprises to time the peak of the rebound rally (see also "Watch Rates, Inflation, China" from 29 July 2009).

Earnings versus Equities Since 2009 Lows



for more information, please contact

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My favorite books on these subjects can be found at

<http://www.ritholtz.com/blog/behavioral-books>