

“VIX plus Junk Bond signal”

By Randy Olsen Dec 5 2020

Risks with Stocks

Recent market challenges... especially the fast crash of Covid

Review of Junk Bond signal

What is the VIX? Volatility index = Fear Gauge

Recipe for how to do this

Results

Why does this work?

Limitations (this is not a 100% solution)

Presenter is **not** a financial professional

Physicist (not a financial analyst)

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Legal Disclaimer And Risk Disclosure



Acknowledgment

I'd like to thank Rob Bernstein for all his work to create Fast Track plots of much of this data.

I really appreciate his support on our joint efforts, reported here, to find better signals to reduce investor's risks.

WHY STOCKS?

Growth of a \$1 Investment: 1926-2013

(Selected Indices; dividends and capital gains reinvested)



Source: DFA Returns Program 2.0. Small Company Stocks = CRSP 6-7-8 Index;
Intermediate Bonds = 5 Year Treasury Notes; other indices are self-explanatory

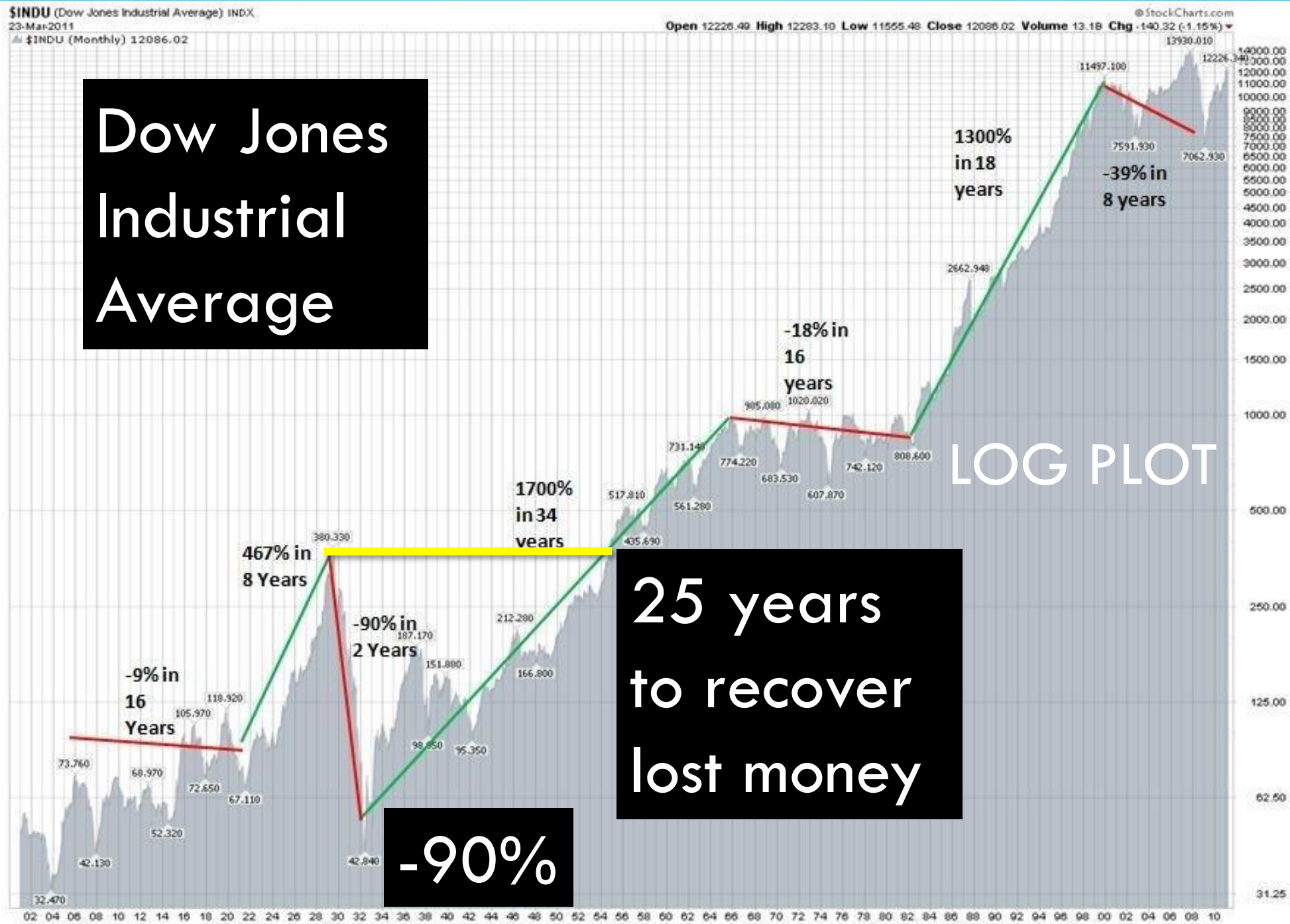
The background is a dark blue gradient. In the corners, there are decorative white line-art elements resembling circuit traces or neural network connections, with small circles at the end of the lines.

BUT STOCKS HAVE RISK

WHY I CAN'T DO BUY & HOLD

Log (logarithm) scale

Dow Jones Industrial Average



The Nikkei 225 and Post-Bubble Rallies

Daily closes with interim highs and lows noted

dshort.com
Data through
4/4/2013

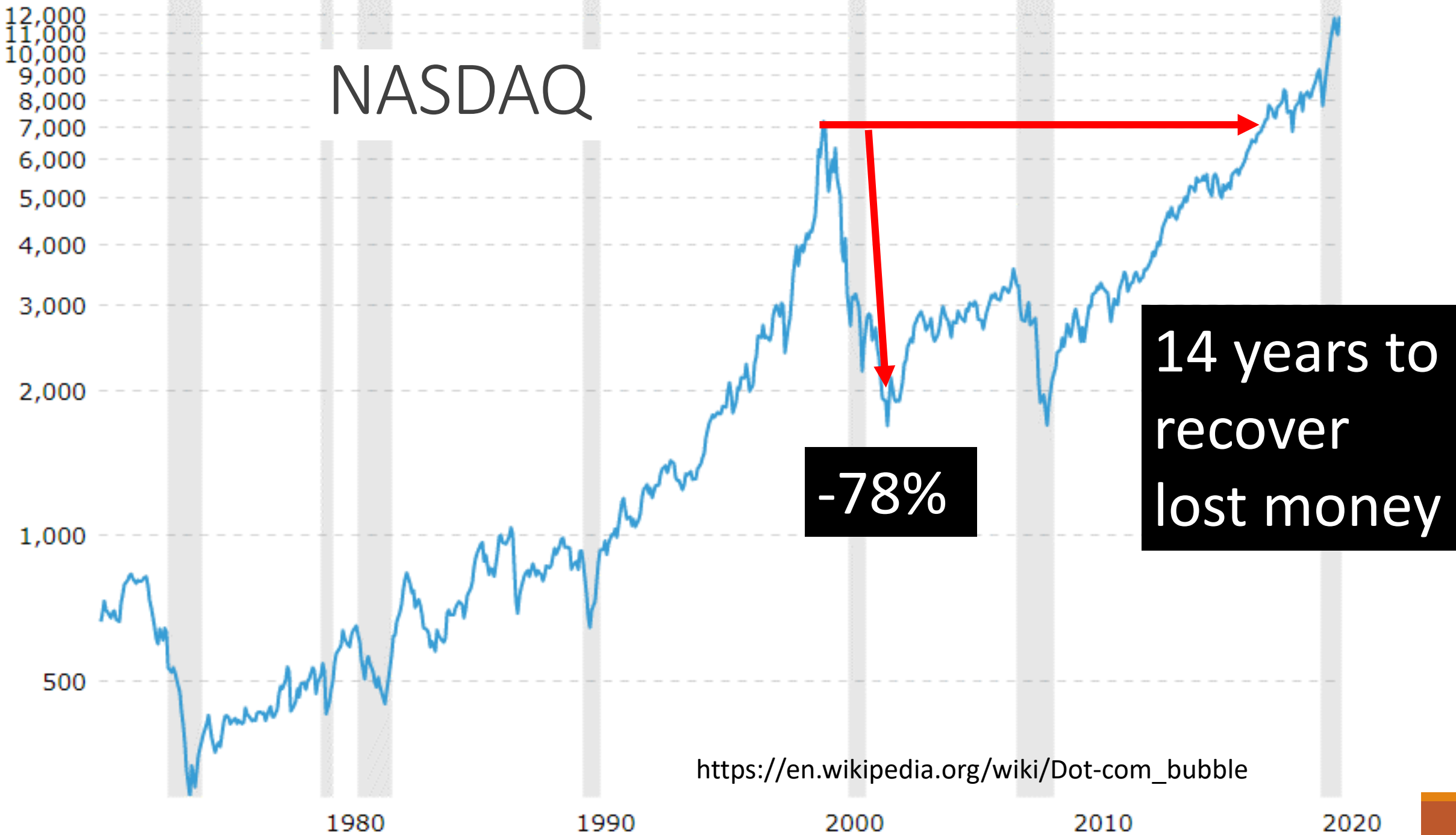
Linear Scale



41 years
to recover
lost money

Twenty Five Years

NASDAQ



https://en.wikipedia.org/wiki/Dot-com_bubble

Is it possible to outperform the S&P 500?

Yes

- Example 50D/200D moving average crossing

50Day/200Day moving average crossings



SPY SPDR S&P 500 ETF NYSE

© StockCharts.com

31-Dec-2001

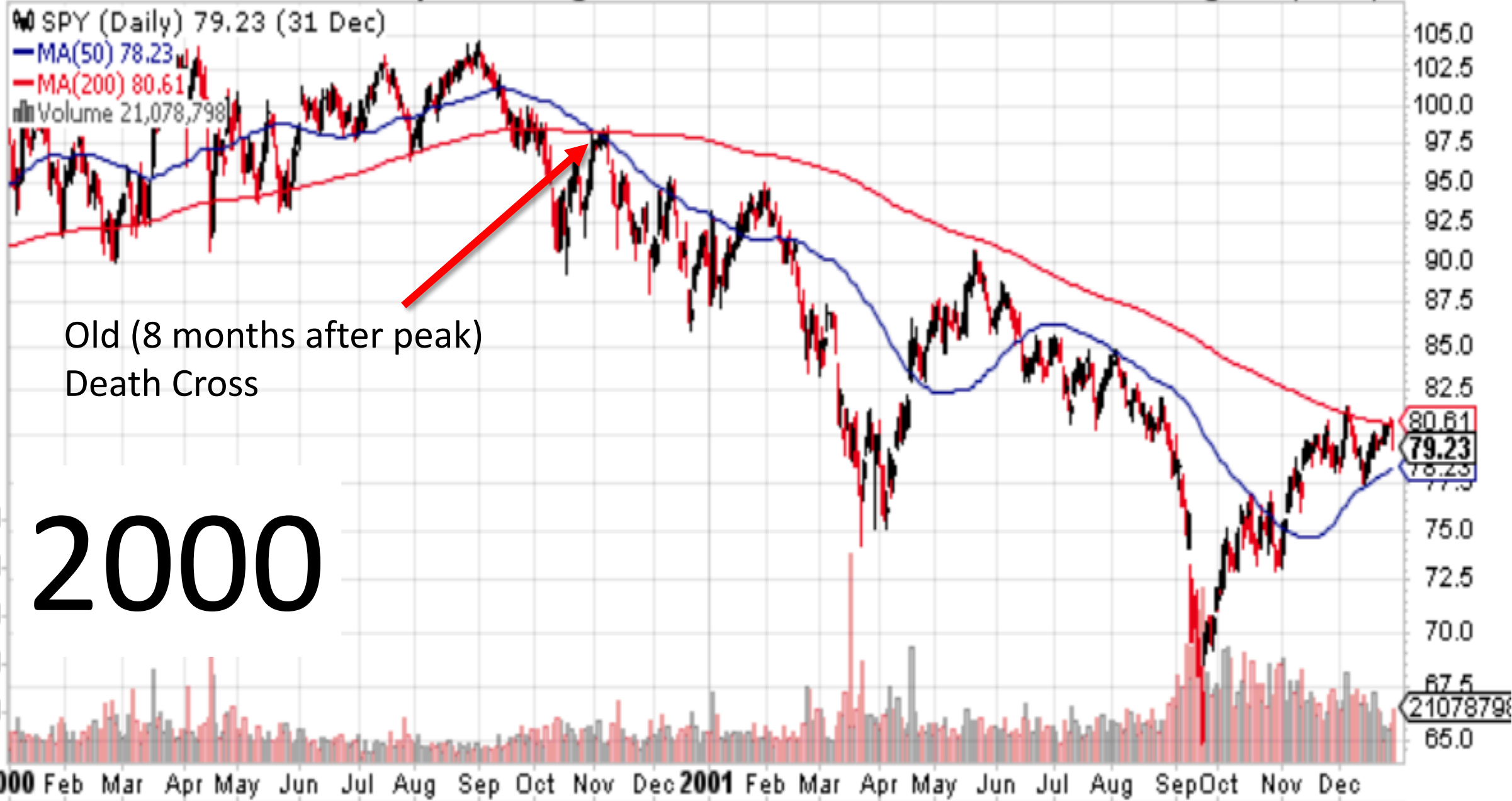
Open 80.56 High 80.73 Low 79.23 Close 79.23 Volume 21.1M Chg -1.23 (-1.53%) ▼

SPY (Daily) 79.23 (31 Dec)

MA(50) 78.23

MA(200) 80.61

Volume 21,078,798



Old (8 months after peak)
Death Cross

2000

80.61

79.23

78.23

77.5

75.0

72.5

70.0

67.5

65.0

21078798

31-Dec-2008

Open 70.27 High 71.77 Low 70.11 Close 71.19 Volume 246.0M Chg +1.00 (+1.43%) ▲

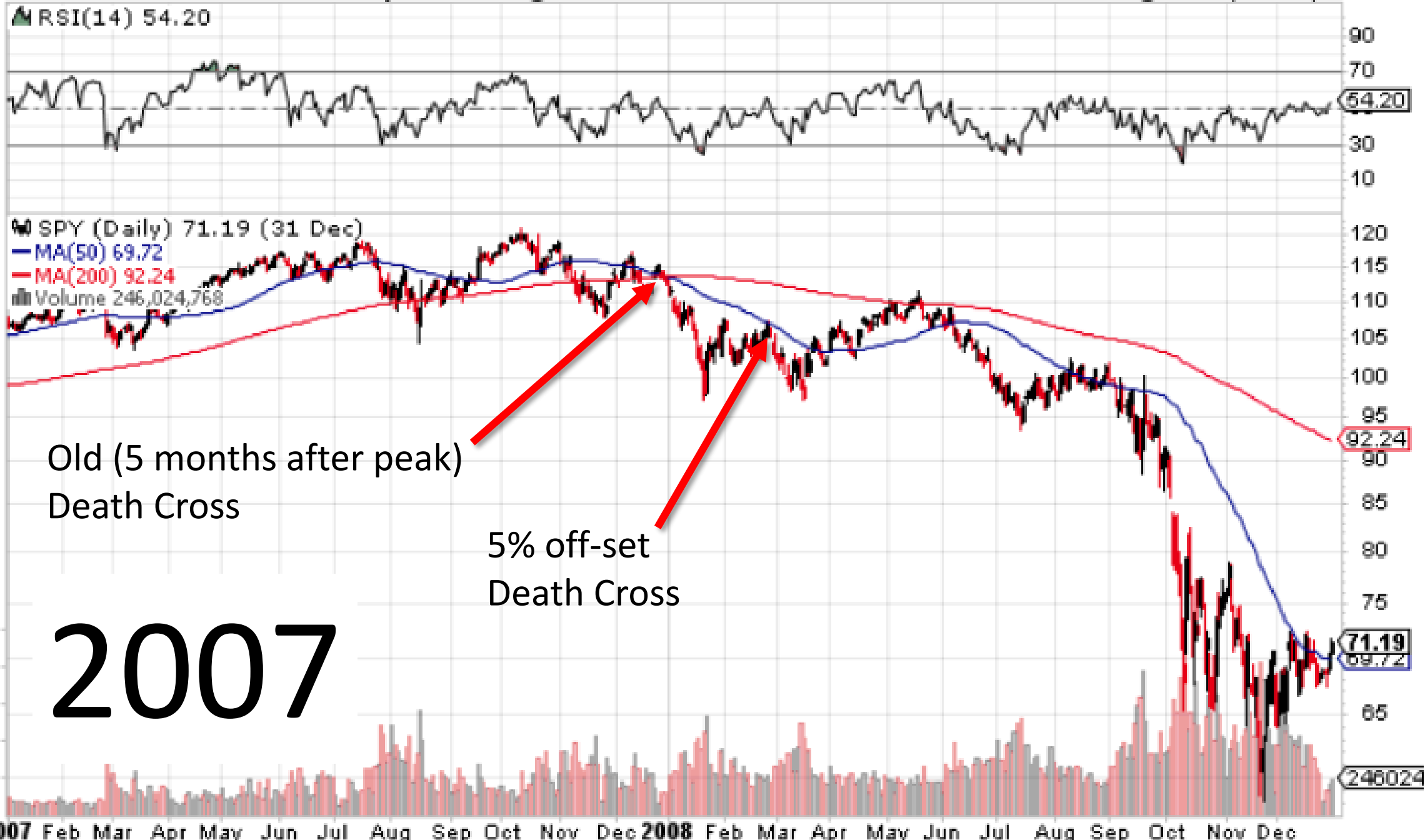
▲ RSI(14) 54.20

SPY (Daily) 71.19 (31 Dec)

MA(50) 69.72

MA(200) 92.24

Volume 246,024,768



Old (5 months after peak)
Death Cross

5% off-set
Death Cross

2007

2007 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2008 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

MONTHLY MOVING AVERAGE (MMA) TIMING STRATEGY	EXCESS ANN TR		WIN % ON ANN TR	
	vs. X/Y	vs. RISK	vs. X/Y	vs. RISK
U.S. EQUITIES, 1871 - 2015	1.5%	0.5%	100.0%	66.7%
U.S. FACTOR INDICES, 1928 - 2015	0.9%	-0.4%	93.3%	23.3%
30 U.S. INDUSTRIES, 1928 - 2015	1.0%	-0.2%	83.3%	43.3%
10 U.S. SECTORS, 1928 - 2015	1.1%	-0.4%	100.0%	40.0%
FOREIGN EQUITIES USD, 1971 - 2015	2.5%	1.9%	89.6%	74.0%
FOREIGN EQUITIES LOCAL CCY, 1971 - 2015	1.5%	1.4%	77.4%	74.2%
FOREIGN EQUITIES LOCAL CCY, 1901 - 1971	1.7%	0.0%	87.5%	37.5%
GLOBAL CURRENCIES, 1973 - 2015	1.5%	1.6%	90.9%	86.4%
FIXED INCOME, 1928 - 2015	0.4%	-0.3%	63.6%	9.1%
COMMODITIES, 1947 - 2015	3.4%	3.2%	100.0%	100.0%
100 LARGEST S&P 500 STOCKS, 1963 - 2015	-1.5%	-3.4%	27.0%	12.0%
BUBBLE ROADKILL SAMPLE, 1981 - 2015	3.8%	10.3%	71.4%	90.5%
ALL INDICES TESTED	1.6%	0.9%	87.6%	59.0%
ALL SECURITIES & INDICES TESTED	0.9%	0.3%	69.6%	47.6%

Trend Following In Financial Markets: A Comprehensive Backtest

<http://www.philosophicaleconomics.com/2016/01/movingaverage/>
market timing paper

Performance is excellent in all categories except the individual S&P stock category



S&P 500

Timed 7.08%/year

buy&hold -0.3%/year

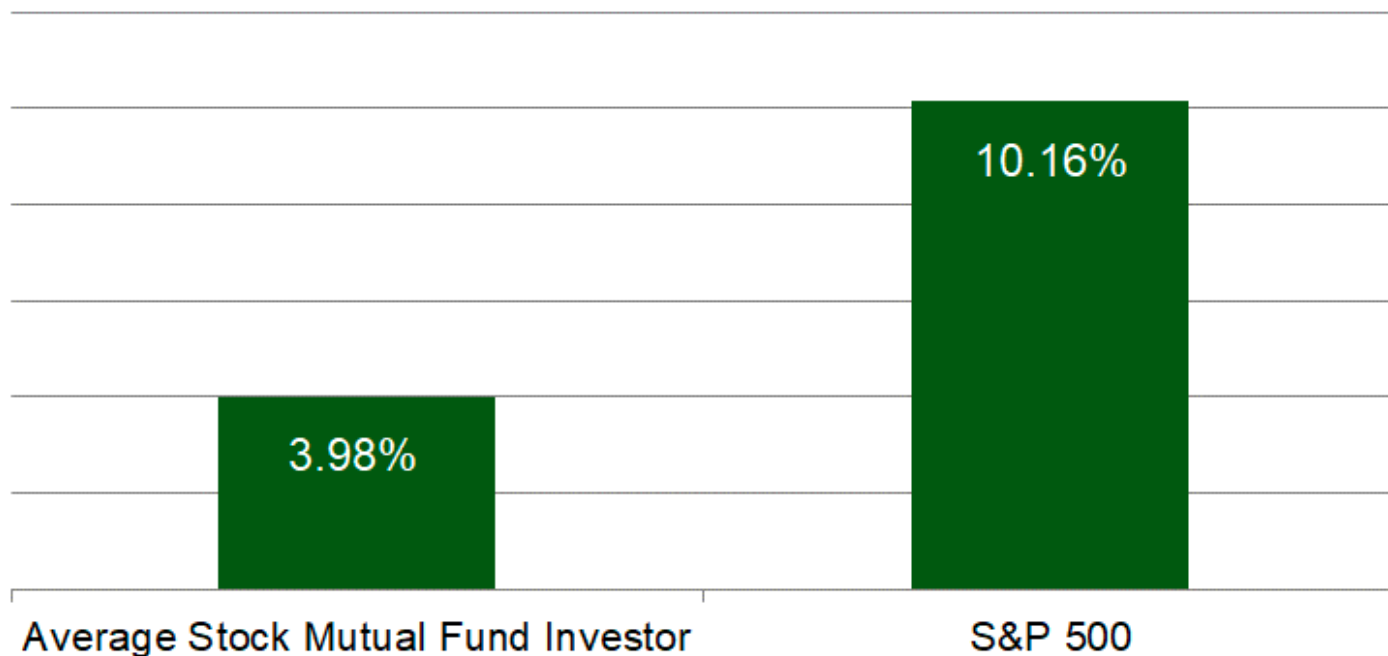
50D/200D MA CROSS

Return	Description	MDD
4.57	S&P500 DA - Buy and Hold	55.31
7.24	S&P500 DA - 50/200 MA Cross	18.09



*“THE INVESTOR’S CHIEF PROBLEM – AND
EVEN HIS WORST ENEMY – IS LIKELY TO
BE HIMSELF” – BEN GRAHAM*

**DALBAR
30 Year Study of
Investor Returns from 1987 - 2016**



*Source: “Quantitative Analysis of Investor Behavior,” DALBAR, Inc., March 2017. This study was conducted by an independent third party, DALBAR, Inc. A research firm specializing in financial services, DALBAR is not associated with U.S. Asset Management, Advisory Services Network or Calton & Assoc. The information herein is believed to be reliable, but accuracy and completeness cannot be

Investor Psychology Cycle

"THE INVESTOR'S CHIEF PROBLEM – AND EVEN HIS WORST ENEMY – IS LIKELY TO BE HIMSELF" – BEN GRAHAM



"Wow, am I Smart."

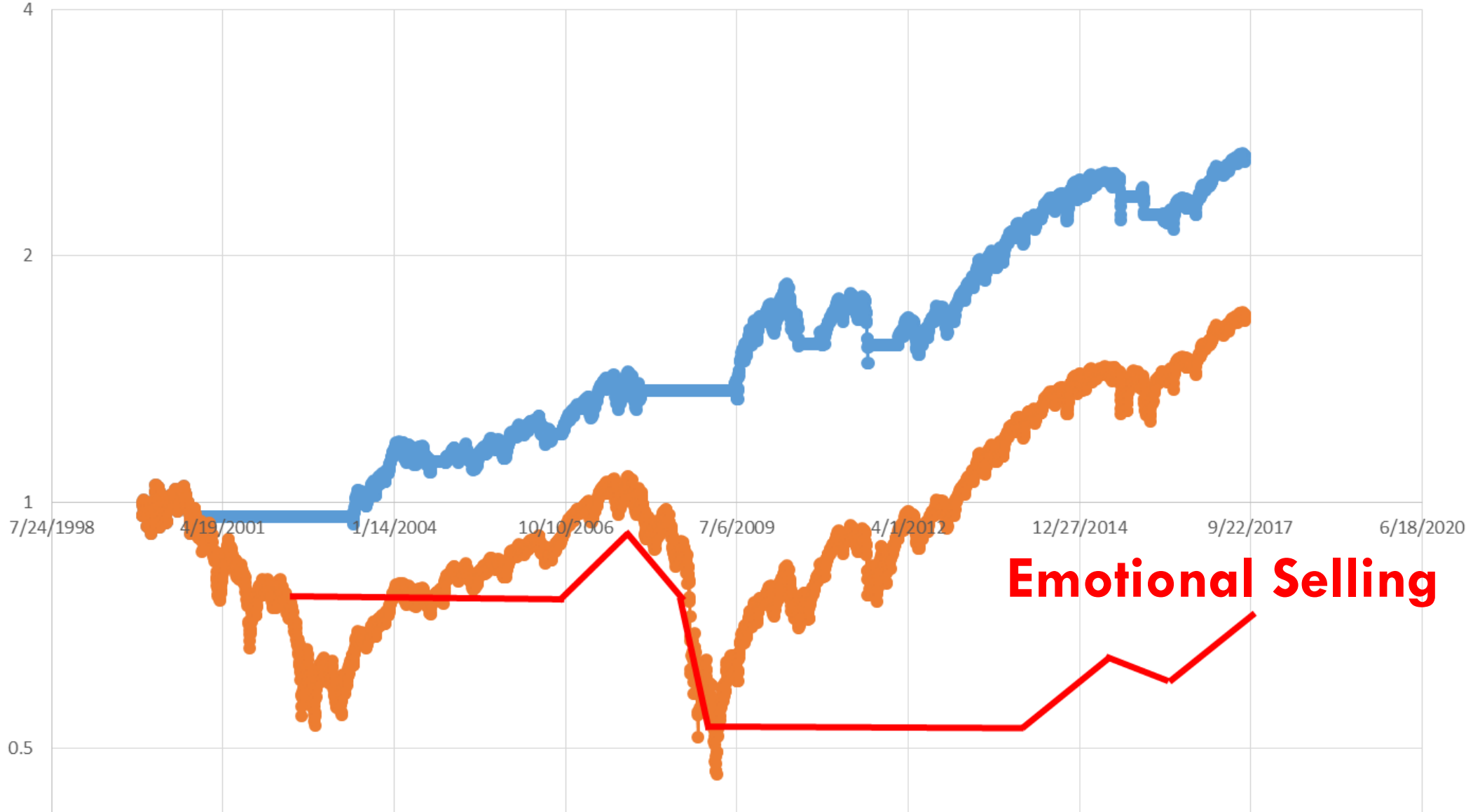
"Temporary Set Back - I'm A Long Term Investor."

"How Could I Have Been So Wrong?"

— S&P 500

EMOTIONAL SELLING

50D/200D Timing vs Emotional Selling



Emotional Selling

- But the 50D/200D moving average crossing approach
 - has developed a Serious Problem in the Post-Global Financial Crisis market
-



Strategy #32

Options: FWPT, SG-DeathX / \$CASH

Data: Investors FastTrack

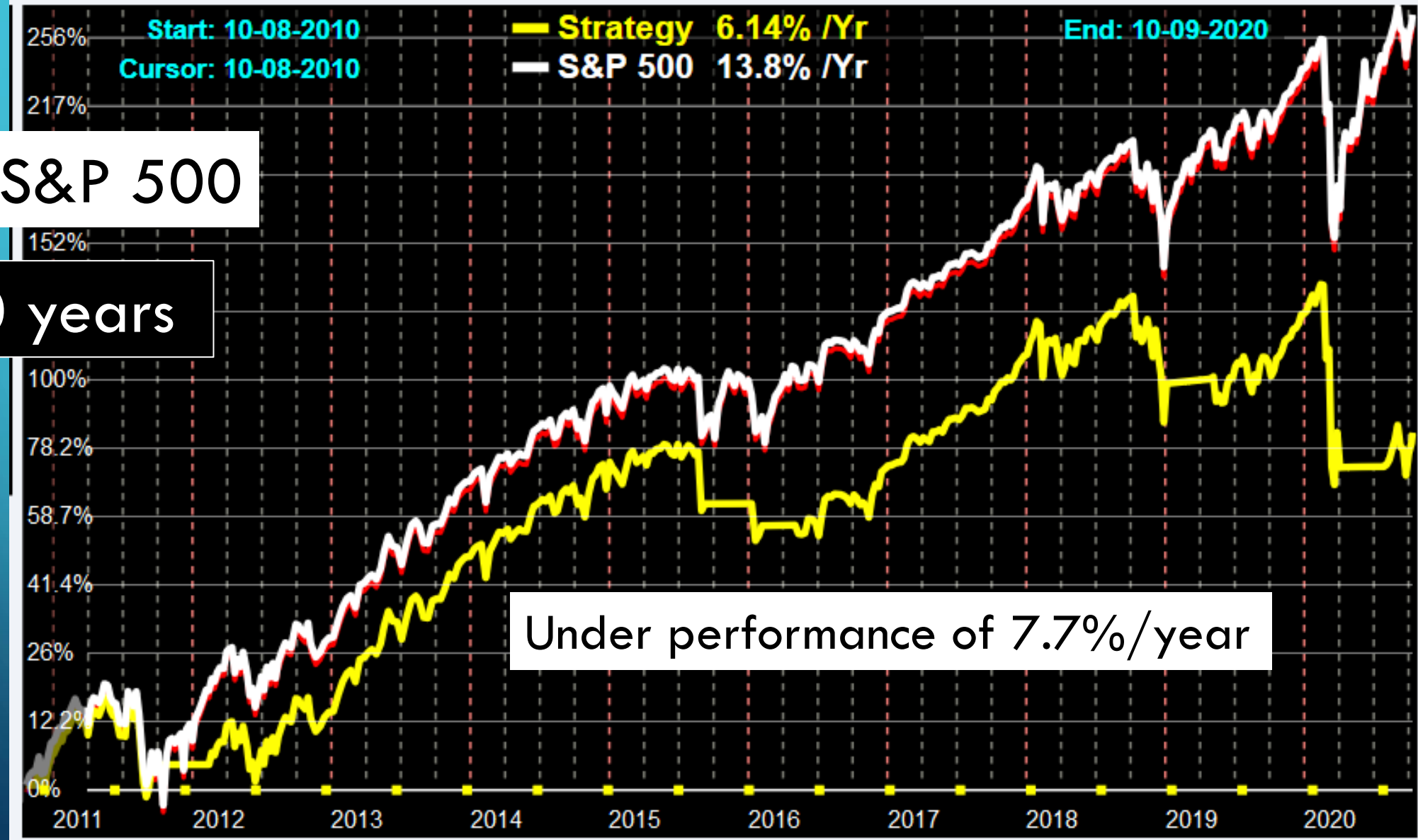
Start: 10-08-2010
Cursor: 10-08-2010

— Strategy 6.14% /Yr
— S&P 500 13.8% /Yr

End: 10-09-2020

S&P 500

10 years



Under performance of 7.7%/year

Strategy #32

Options: FWPT, SG-DeathX / \$CASH

Data: Investors FastTrack

Start: 10-08-2015

Cursor: 10-08-2015

— Strategy 2.43% /Yr

— S&P 500 13.8% /Yr

End: 10-09-2020

S&P 500

5 years



Under performance of 11.4%/year

Strategy #32

Options: FWPT, SG-DeathX / \$CASH

Data: Investors FastTrack

Start: 11-19-2018
Cursor: 11-19-2018

Strategy -5.76% /Yr
S&P 500 17.7% /Yr

End: 11-19-2020

S&P 500

2 years

Under performance of 23.5%/year





2020

S&P 500

1 year

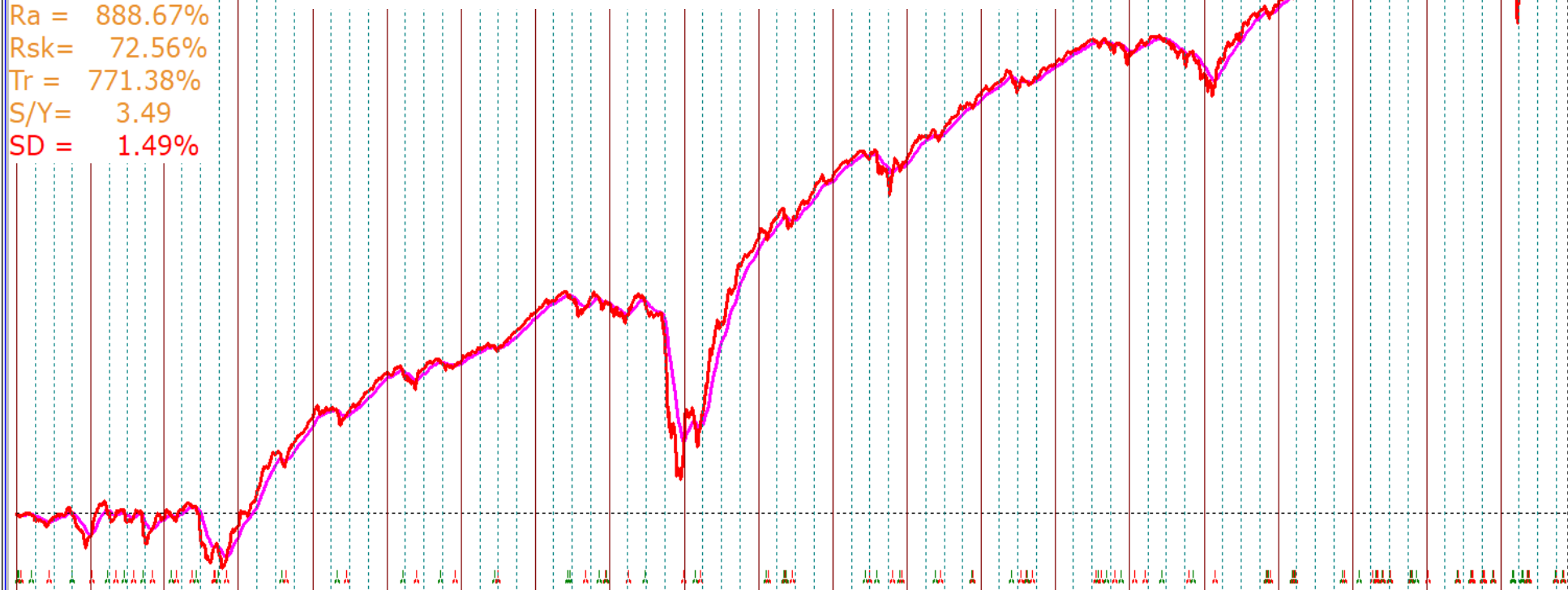
What can we do to fix this?



Junk Bonds Timed w/ Junk Bonds signal

Price
 50 50
 Mr = 13.46%
 Ra = 888.67%
 Rsk= 72.56%
 Tr = 771.38%
 S/Y= 3.49
 SD = 1.49%

MLHY Timed with 50-Day Moving Average



MLHY- - ICEBAML US Hi Yield Master II D
 CP = \$1,459.420 (up \$0.37/0.03%)
 BP = 300.54%(\$1,095.060)
 Ann= 6.88%

VMMXX - Vanguard Prime Money Market
 CP = \$1.000 (up \$0.00/0.00%)
 BP = 43.63%(\$0.363)
 Ann= 1.75%

Price
 CP = 1,459.420(1,095.1)
 MA = 1,430.723(1,068.1)
 MA = 1,430.723(1,068.1)

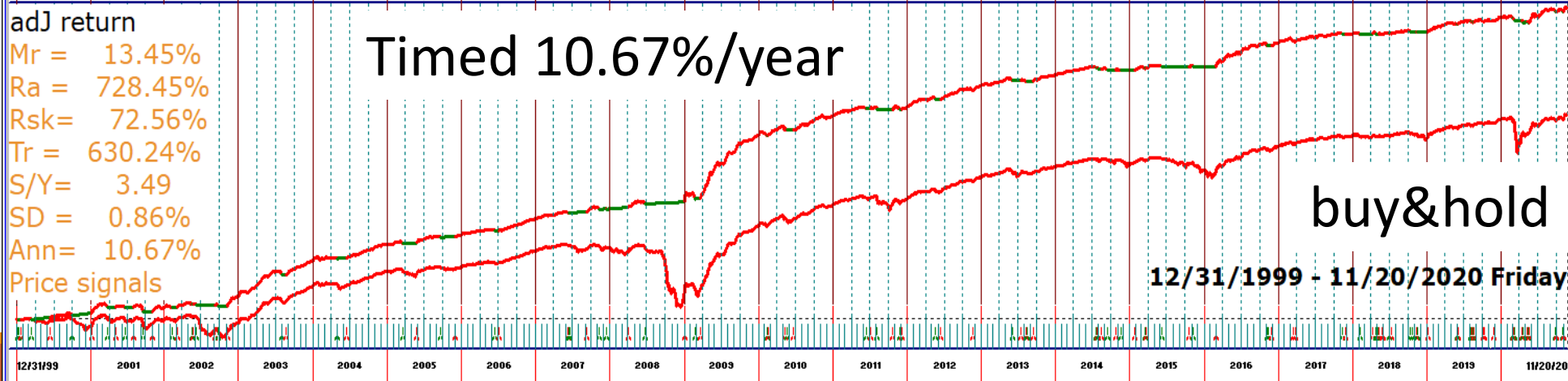
J Chart
 CP = \$3,278.234
 Adj= 728.45%(\$7.285)
 Ann= 10.67%

Calendar Stat
 MDY = 5257
 Years= 20.86
 CDY = 7630
 CMD = 8121

Sig/Trade=DEFAULT/DEFAULT
 Trnd=DEFAULT
 CDF=DEFAULT
 PARAM=DEFAULT

adJ return
 Mr = 13.45%
 Ra = 728.45%
 Rsk= 72.56%
 Tr = 630.24%
 S/Y= 3.49
 SD = 0.86%
 Ann= 10.67%

Timed 10.67%/year



buy&hold 6.88%/year

12/31/1999 - 11/20/2020 Friday

12/31/99 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 11/20/20

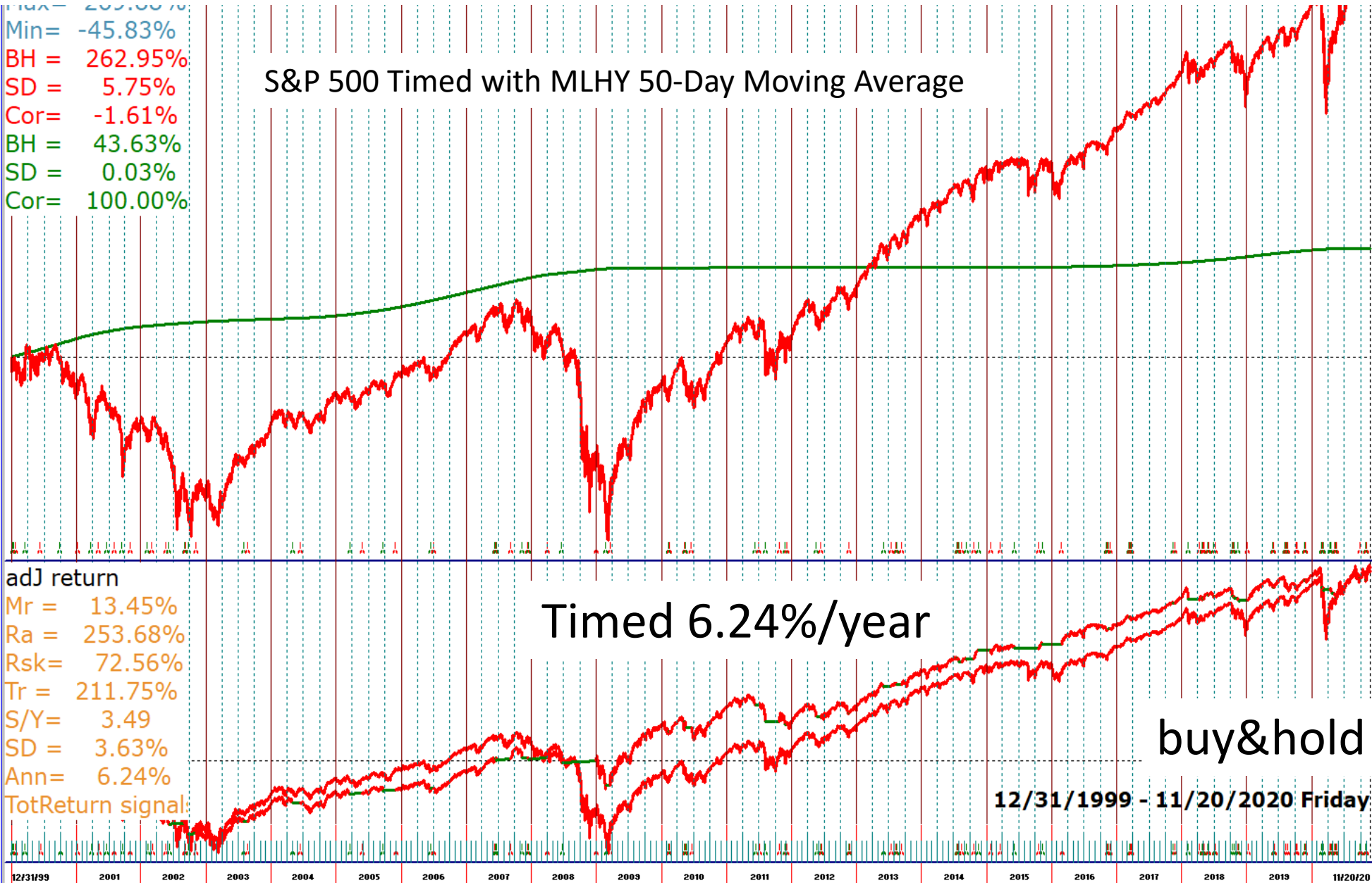
MLHY-

VMMXX

S&P500 Dividend Adjusted Timed w/Junk Bonds signal

Min = -45.83%
 BH = 262.95%
 SD = 5.75%
 Cor = -1.61%
 BH = 43.63%
 SD = 0.03%
 Cor = 100.00%

S&P 500 Timed with MLHY 50-Day Moving Average



Timed 6.24%/year

buy&hold 6.37%/year

12/31/1999 - 11/20/2020 Friday

Help Export

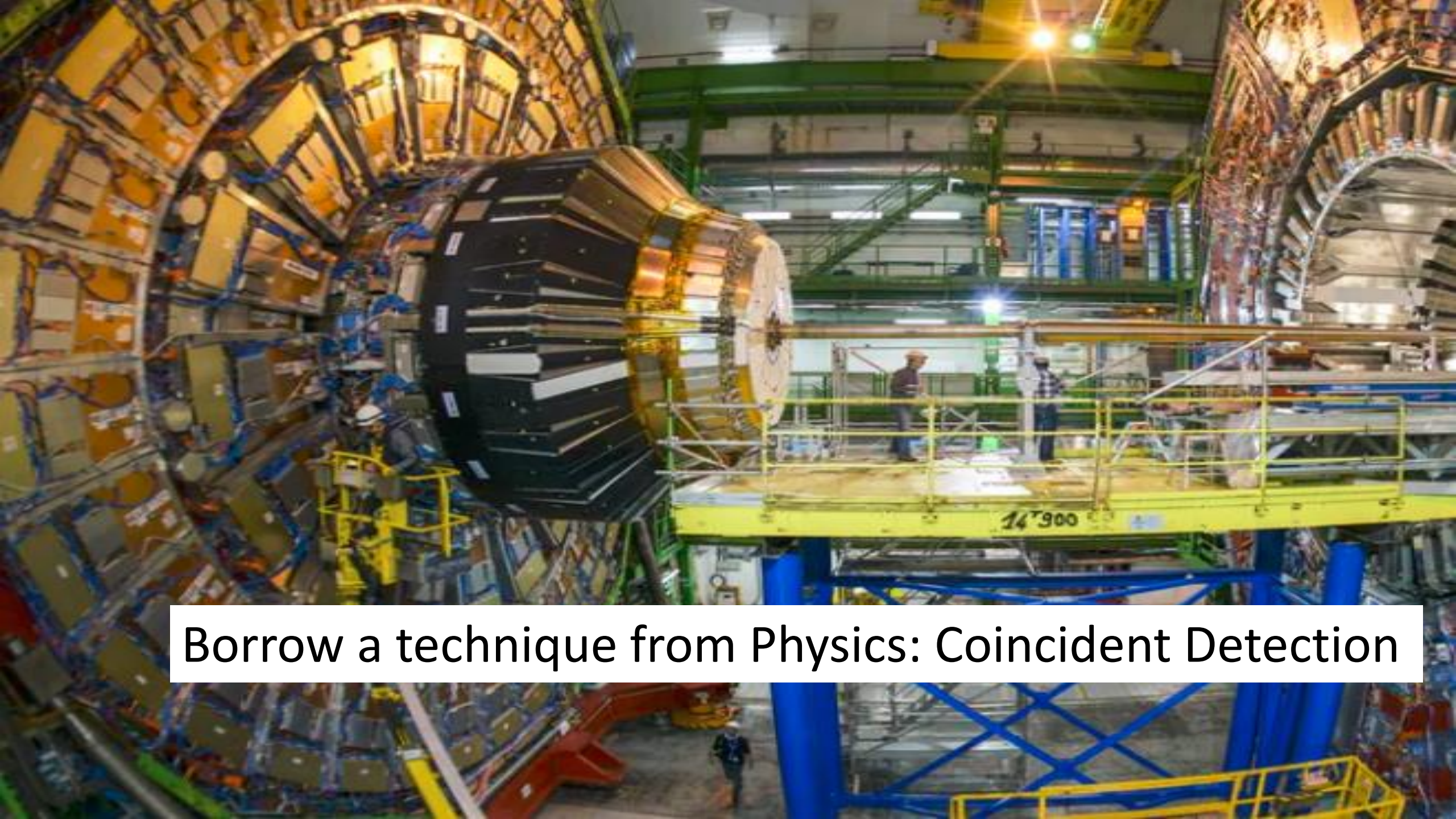
-DA - S&P 500 Dividend Adjusted Idx
 CP = \$7,336.760 (dn \$-50.10/-0.68%)
 BP = 262.95%(\$5,315.360)
 Ann = 6.37%

VMMXX - Vanguard Prime Money Market
 CP = \$1.000 (up \$0.00/0.00%)
 BP = 43.63%(\$0.363)
 Ann = 1.75%

J Chart
 CP = \$5,873.023
 Adj = 253.68%(\$2.537)
 Ann = 6.24%

Calendar Stat
 MDY = 5257
 Years = 20.86
 CDY = 7630
 CMD = 8121
 Sig/Trade = MLHY-/DEFAULT
 Trnd = DEFAULT
 CDF = DEFAULT
 PARAM = DEFAULT

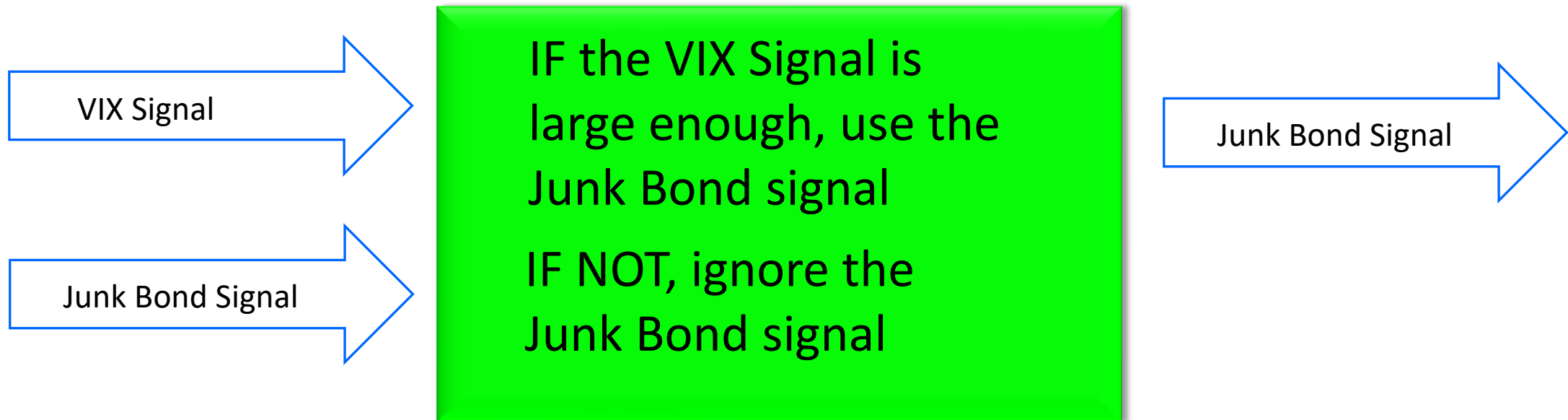
Val Index List



Borrow a technique from Physics: Coincident Detection

Recipe

Use the Junk Bond signal to SELL but only when the Stock Market is fearful



What is the VIX?

- [Chicago Board Options Exchange](#)'s **CBOE Volatility Index**, a popular measure of the [stock market](#)'s expectation of [volatility](#) based on [S&P 500](#) index [options](#)
- often referred to as the *fear index* or *fear gauge*
- the expected annualized change in the S&P 500 index over the following 30 days
 - as computed from options-based theory and current options-market data.
- current VIX didn't begin trading until 1993

60

50

40

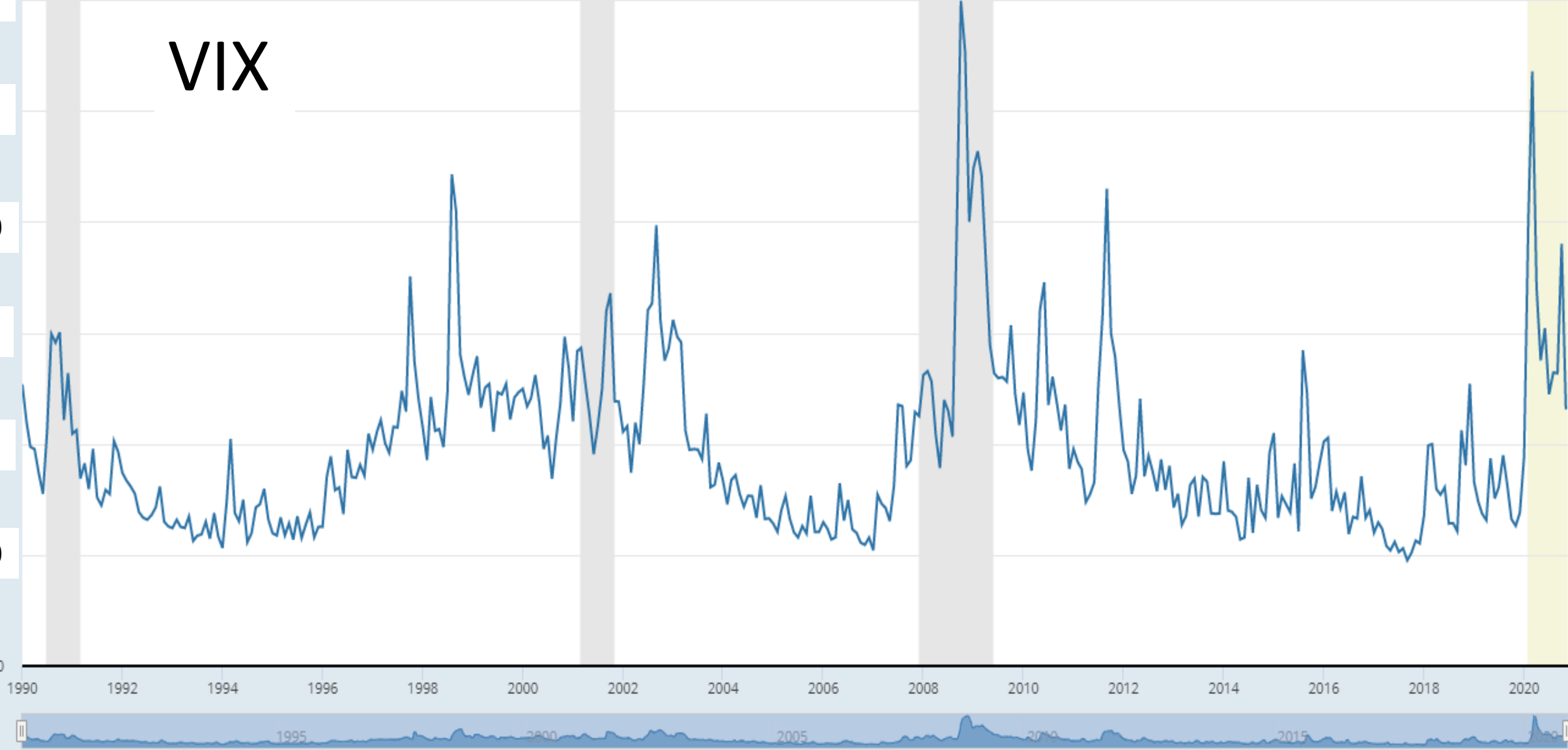
30

20

10

0

VIX



U.S. recessions are shaded; the most recent end date is undecided.

Source: Chicago Board Options Exchange

fred.stlouisfed.org



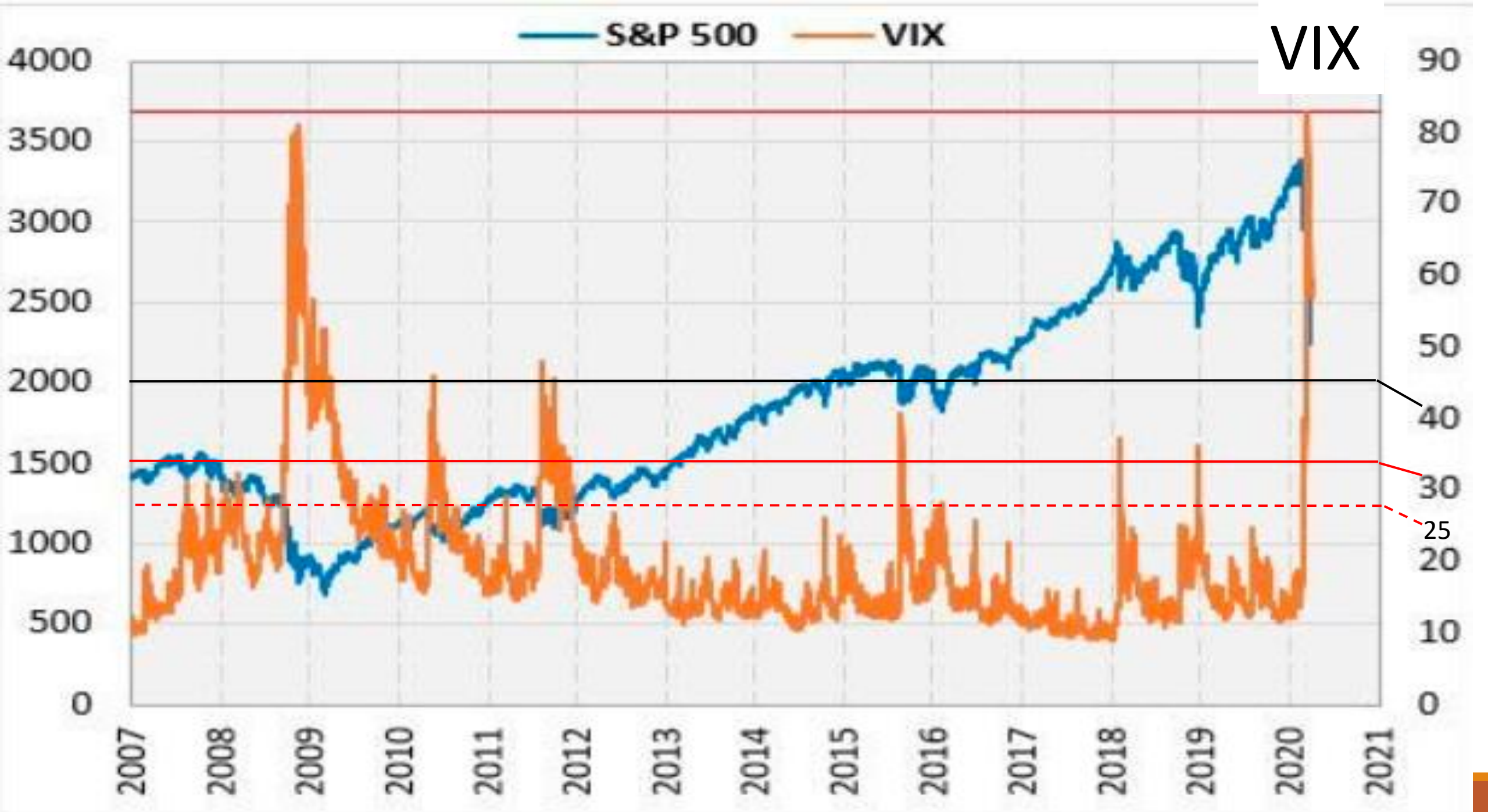


U.S. recessions are shaded; the most recent end date is undecided.

Source: Chicago Board Options Exchange

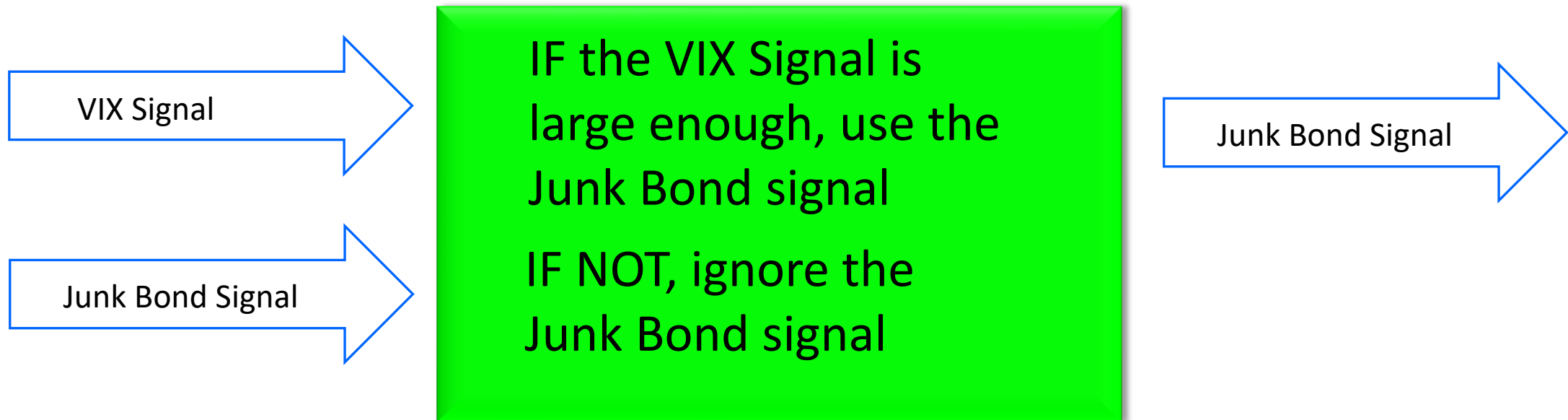
fred.stlouisfed.org





Recipe

Use the Junk Bond signal to SELL but only when the Stock Market is fearful



Categories > Money, Banking, & Finance > Financial Indicators > Bond Market Indexes > BofA Merrill Lynch Total Bond Return Index Values

☆ ICE BofA US High Yield Index Total Return Index Value (BAMLHYH0A0HYM2TRIV)

DOWNLOAD

Observation:
2020-12-03: **1,479.540** (+ more)
Updated: 9:06 AM CST

Units:
Index,
Not Seasonally Adjusted

Frequency:
Daily,
Close

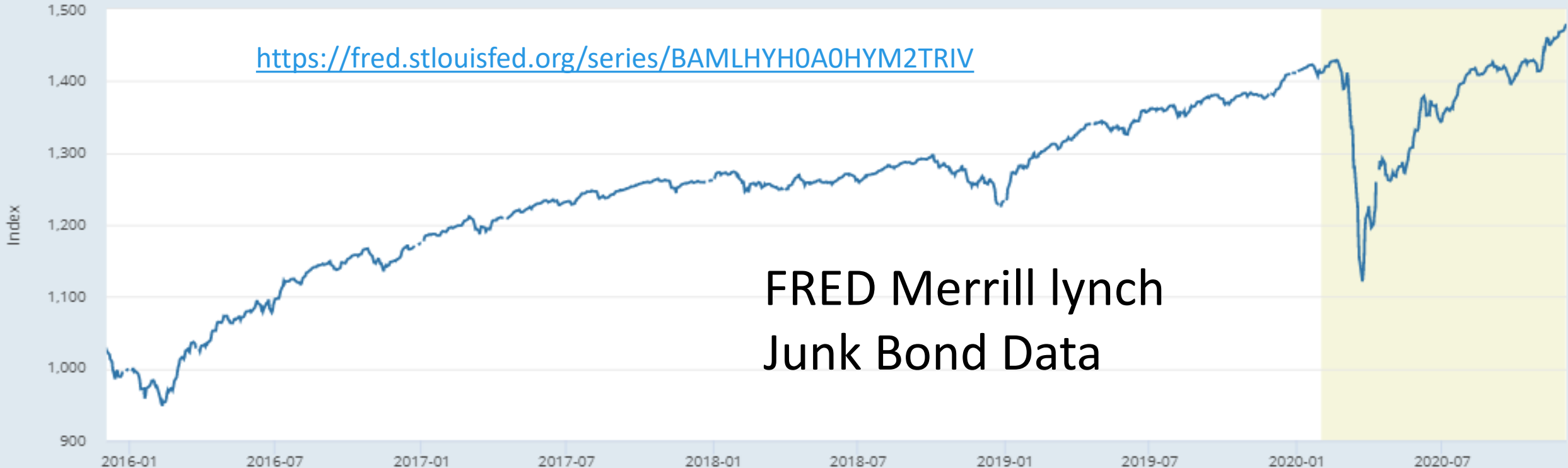
1Y | 5Y | 10Y | Max

2015-12-03 to 2020-12-03

EDIT GRAPH

FRED — ICE BofA US High Yield Index Total Return Index Value

<https://fred.stlouisfed.org/series/BAMLHYH0A0HYM2TRIV>



FRED Merrill Lynch
Junk Bond Data

major junk bond mutual funds

Vanguard High Yield Corporate Fund

VWEHX \$27Billion <https://money.usnews.com/funds/mutual-funds/high-yield-bond/vanguard-high-yield-corporate-fund/vwehx>

PGIM

PBHAX \$19 Billion <https://money.usnews.com/funds/mutual-funds/high-yield-bond/pgim-high-yield-fund/pbhax>

Blackrock

BHYAX 26B <https://money.usnews.com/funds/mutual-funds/high-yield-bond/blackrock-high-yield-bond-portfolio/bhyax>

Pimco

PHDAX 10B <https://money.usnews.com/funds/mutual-funds/high-yield-bond/pimco-high-yield-fund/phdax>

Vanguard High Yield Corporate Fund

Overall Score 7.7/10

#12 in High Yield Bond

Class Inv: VWEHX

Overview Interactive Chart Performance Holdings Costs & Fees Risk Fund Family

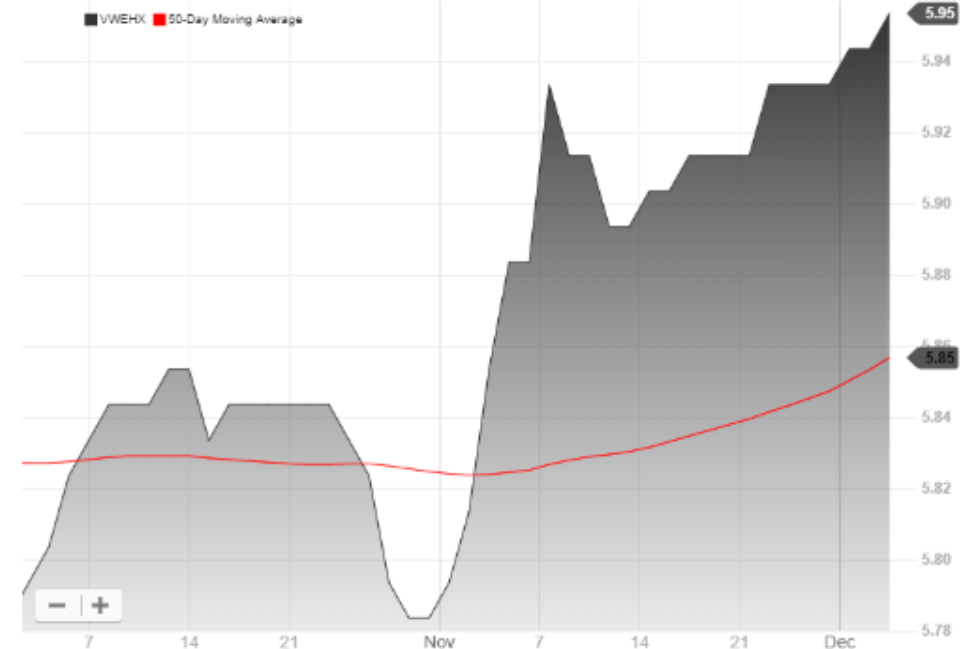
1Y 5Y 10Y Max

Range

Line

Indicators

Compare



Search

Ticke

USA

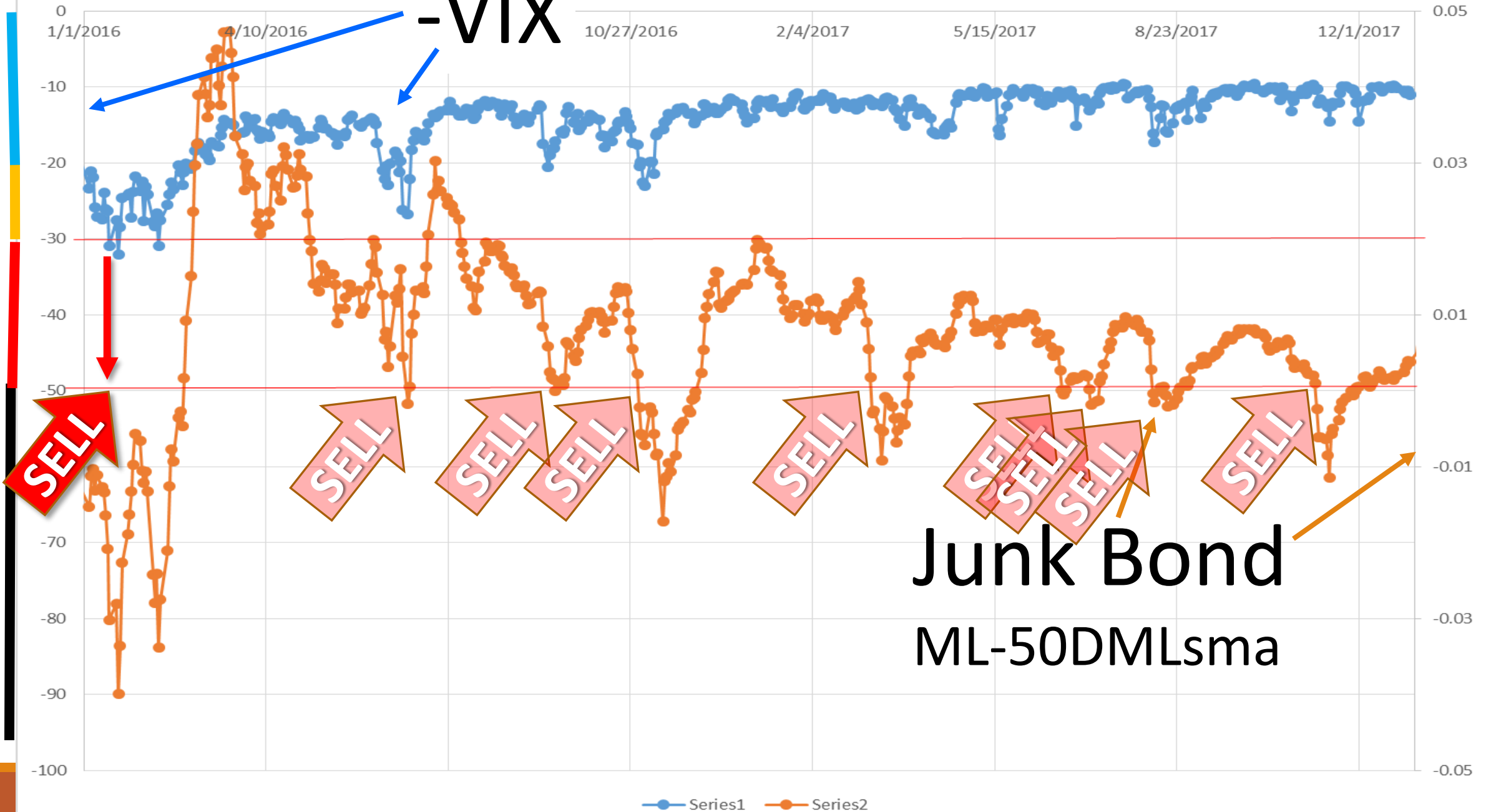
For U.S. to W

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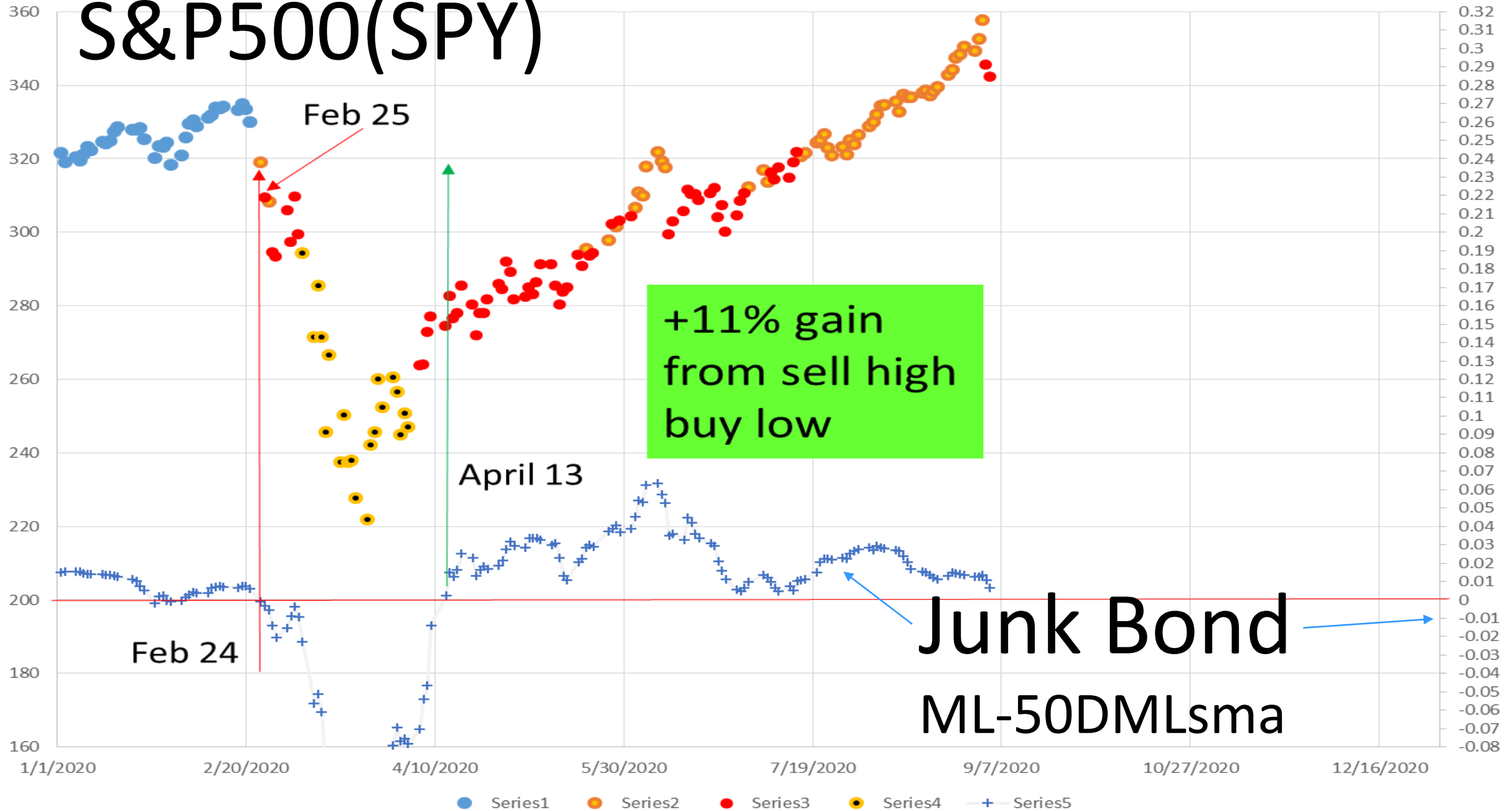
Email

VIX and Junk Bond signal



Junk Bond
ML-50DMLsma

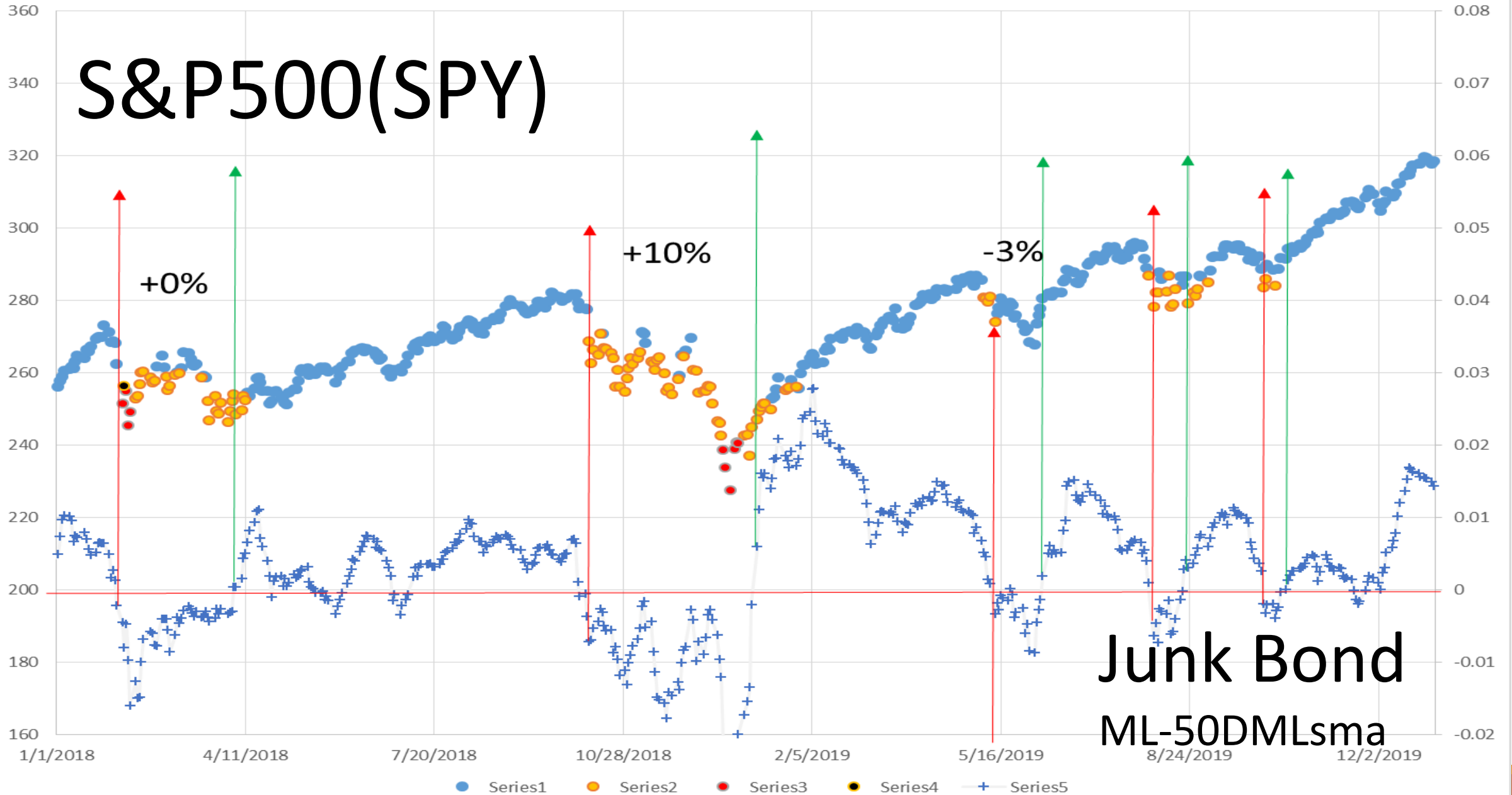
S&P500(SPY)



+11% gain
from sell high
buy low

Junk Bond
ML-50DMLsma

S&P500 (SPY) and Junk Bond signal



S&P500 Dividend Adjusted Timed J B & VIX signal

Charts

Tot return

Max= 742.90%

Min= -45.83%

BH = 273.83%

SD = 5.75%

Cor= 66.81%

BH = 674.84%

SD = 3.62%

Cor= 100.00%

BH = 631.11%

SD = 3.81%

Cor= 93.16%

Vix>25 Timed 10.30%/year

Vix>30 Timed 9.99%/year

Buy&Hold 6.52%/year

12/31/1999 - 12/01/2020 Tuesday

Help Export

SP-DA - S&P 500 Dividend Adjusted

CP = \$7,556.510 (up \$84.45/1.13)

BP = 273.83%(\$5,535.110)

Ann= 6.52%

V25 - Lowest Composite or Yellow L

CP = \$15,662.684 (up \$175.04/1.13)

BP = 674.84%(\$13,641.268)

Ann= 10.30%

V30 - Lowest Composite or Yellow L

CP = \$14,778.866 (up \$165.17/1.13)

BP = 631.11%(\$12,757.450)

Ann= 9.99%

Calendar Stat

MDY = 5263

Years= 20.88

CDY = 7641

CMD = 8127

Sig/Trade=DEFAULT/DEFAULT

Trnd=DEFAULT

CDF=DEFAULT

PARAM=DEFAULT

12/31/99 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 12/1/20

SP-DA

V25

V30

Val Index List

Why does this work?

The classic 200D/50D moving average approach is slow

- It can only protect from slow market declines
 - 50Days or longer timeframes

VIX JB is fast

- VIX is instantaneous
- JB is available daily
 - Daily(1D) crossing the 50D
- Protects on a few days time-scale
 - JB holders need to react to move the JB signal

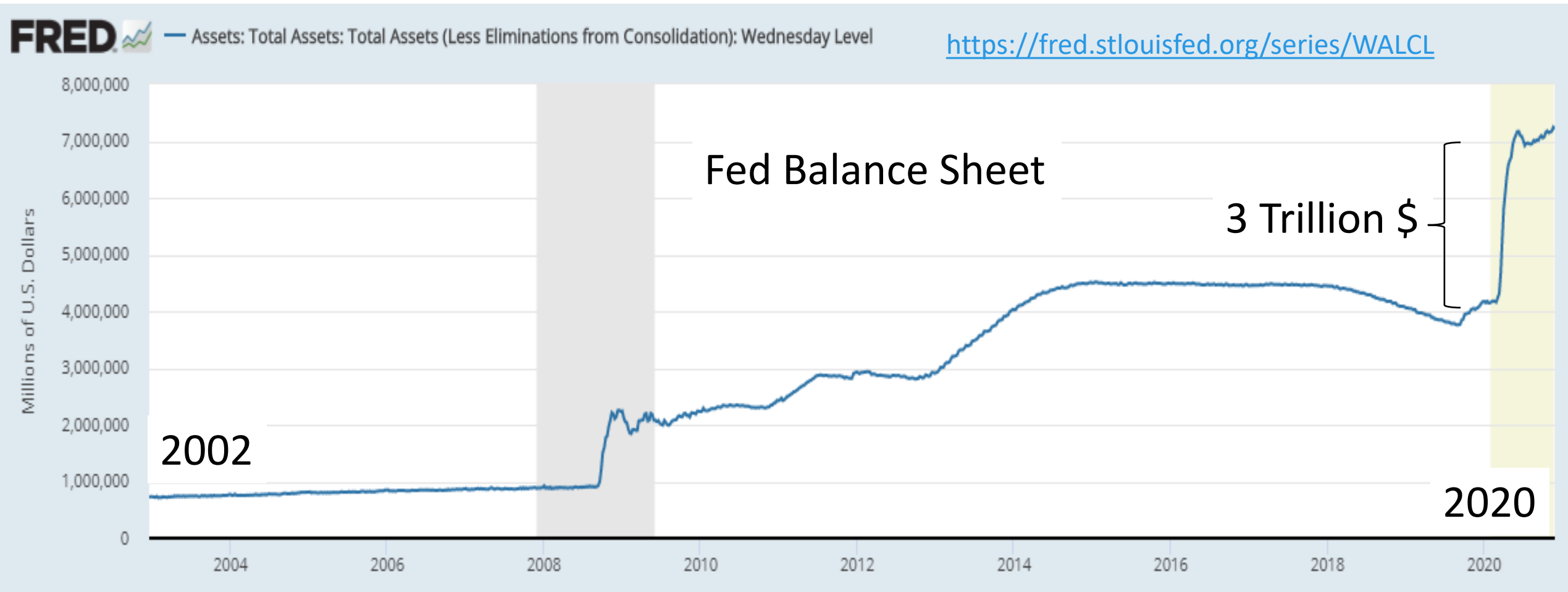
What are its limitations?

This approach does not yet solve the Black Monday 1987 problem

- 20% drop in one day
- Studied this problem many years ago and did not find a solution other than hold on and take the hit
- Any intra-day reaction I tested (e.g. if the market drops by X% intra-day, then sell) led to losses compared to holding through the daily loss

What is going on?

Why is the stock market different?



Piketty's Inequality

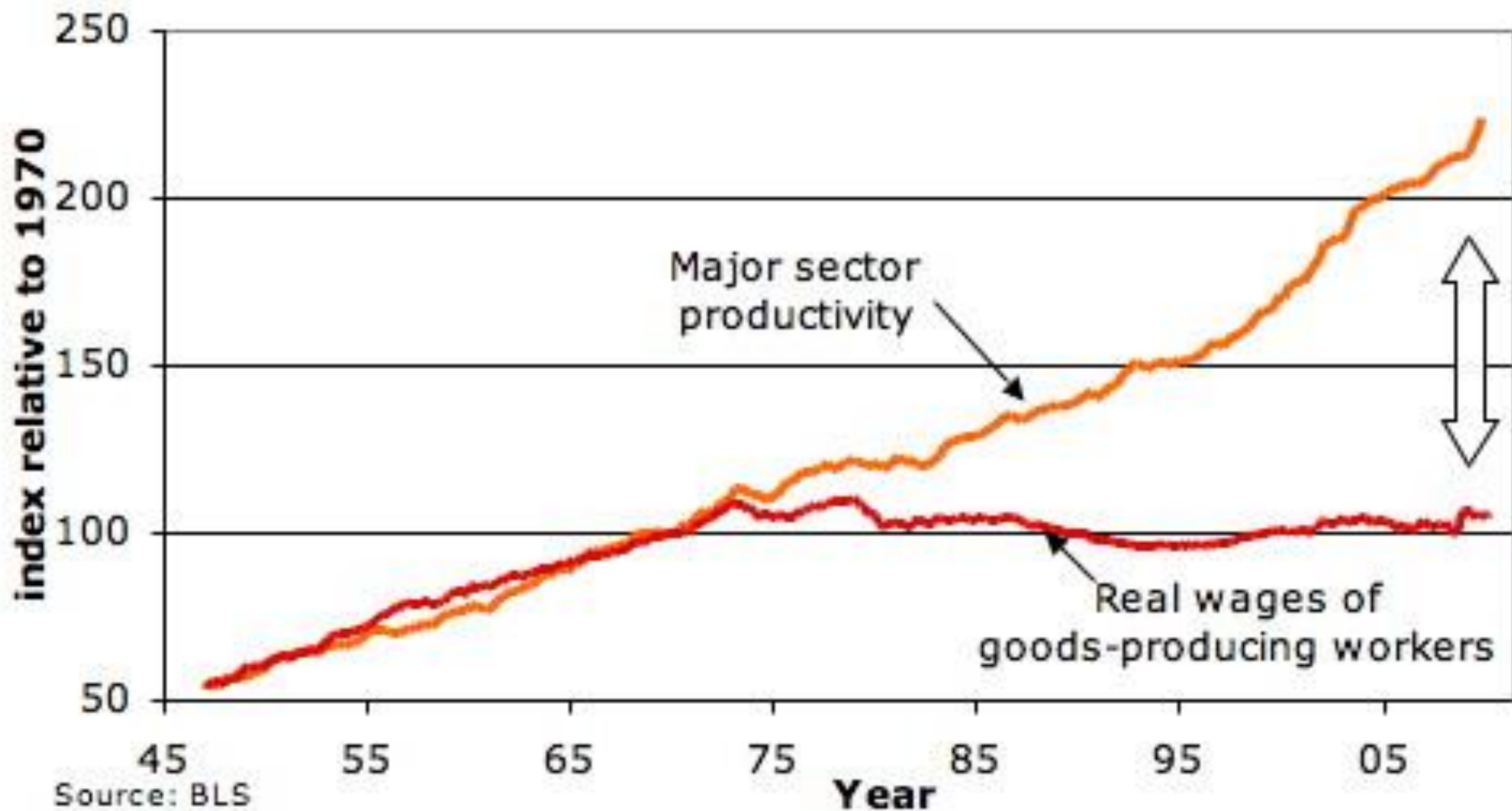
<https://www.newyorker.com/news/john-cassidy/piketlys-inequality-story-in-six-charts>



INCOME INEQUALITY IN THE UNITED STATES, 1910-2010

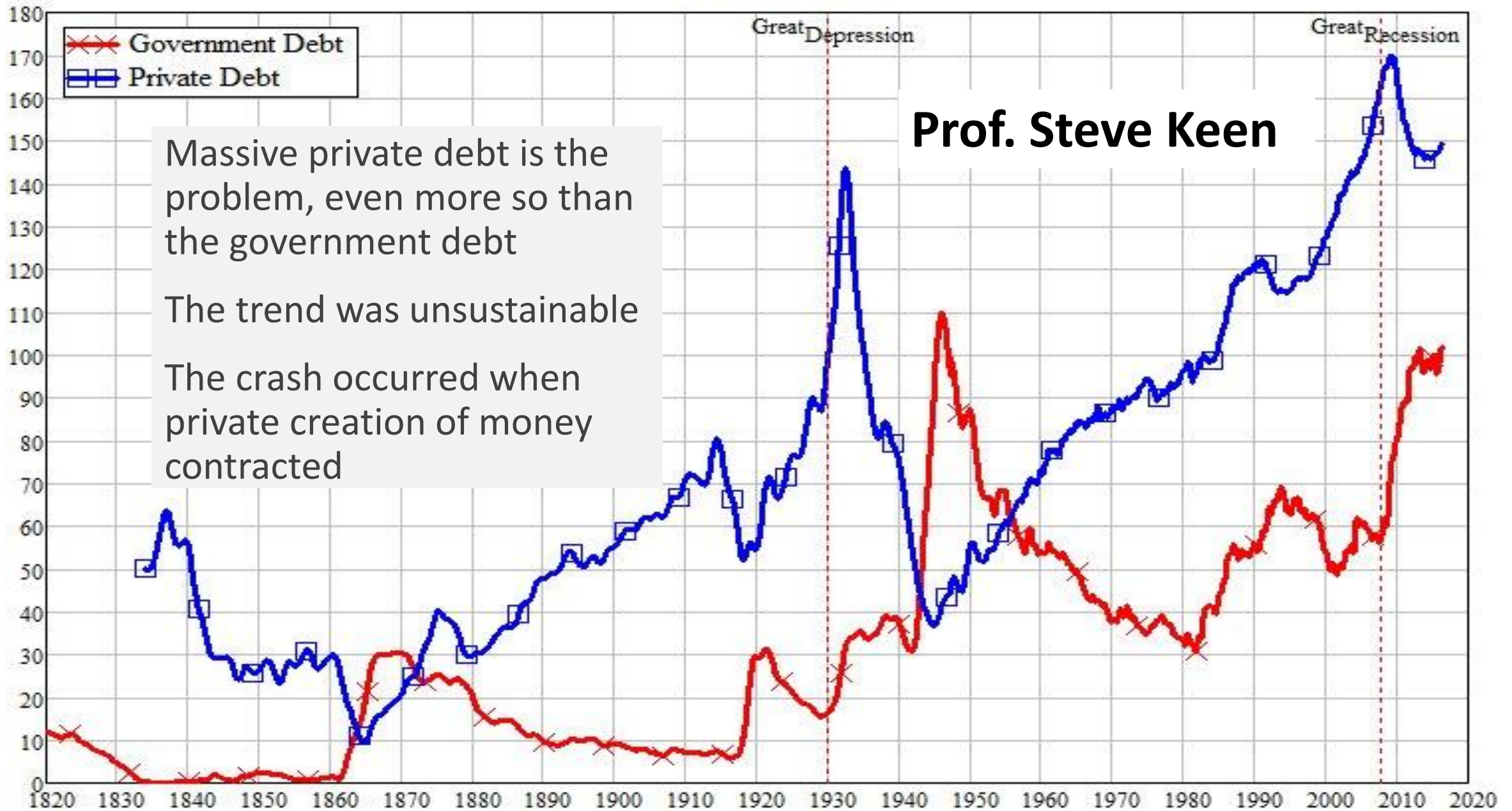


Productivity and average real earnings



Source: BLS

USA Debt Levels



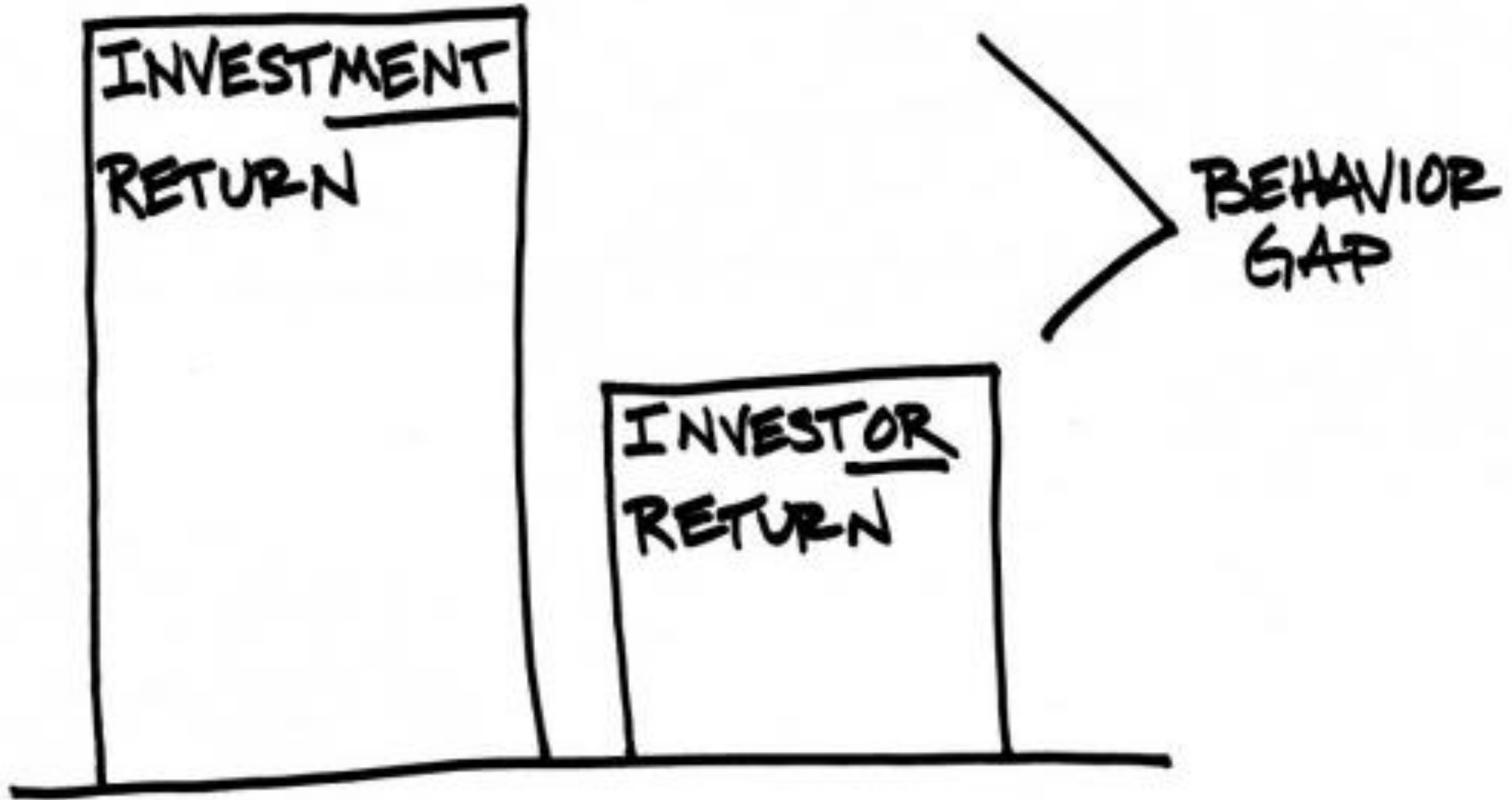
Massive private debt is the problem, even more so than the government debt

The trend was unsustainable

The crash occurred when private creation of money contracted

Prof. Steve Keen

Summary



Carl Richards cartoon

Questions?



randallbolsen@gmail.com

OVERHAULING ECONOMIC THEORY

[HTTP://WWW.DEBTDEFLATION.COM/BLOGS/DEBUNKING-ECONOMICS/](http://www.debtdeflation.com/blogs/debunking-economics/)

- Mainstream Economic Theory

- Static (Equilibrium)
- Does not understand that bank loans create money (e.g. home equity loans)
- Does not predict economic cycles (booms and busts)

- Steve Keen's Theory

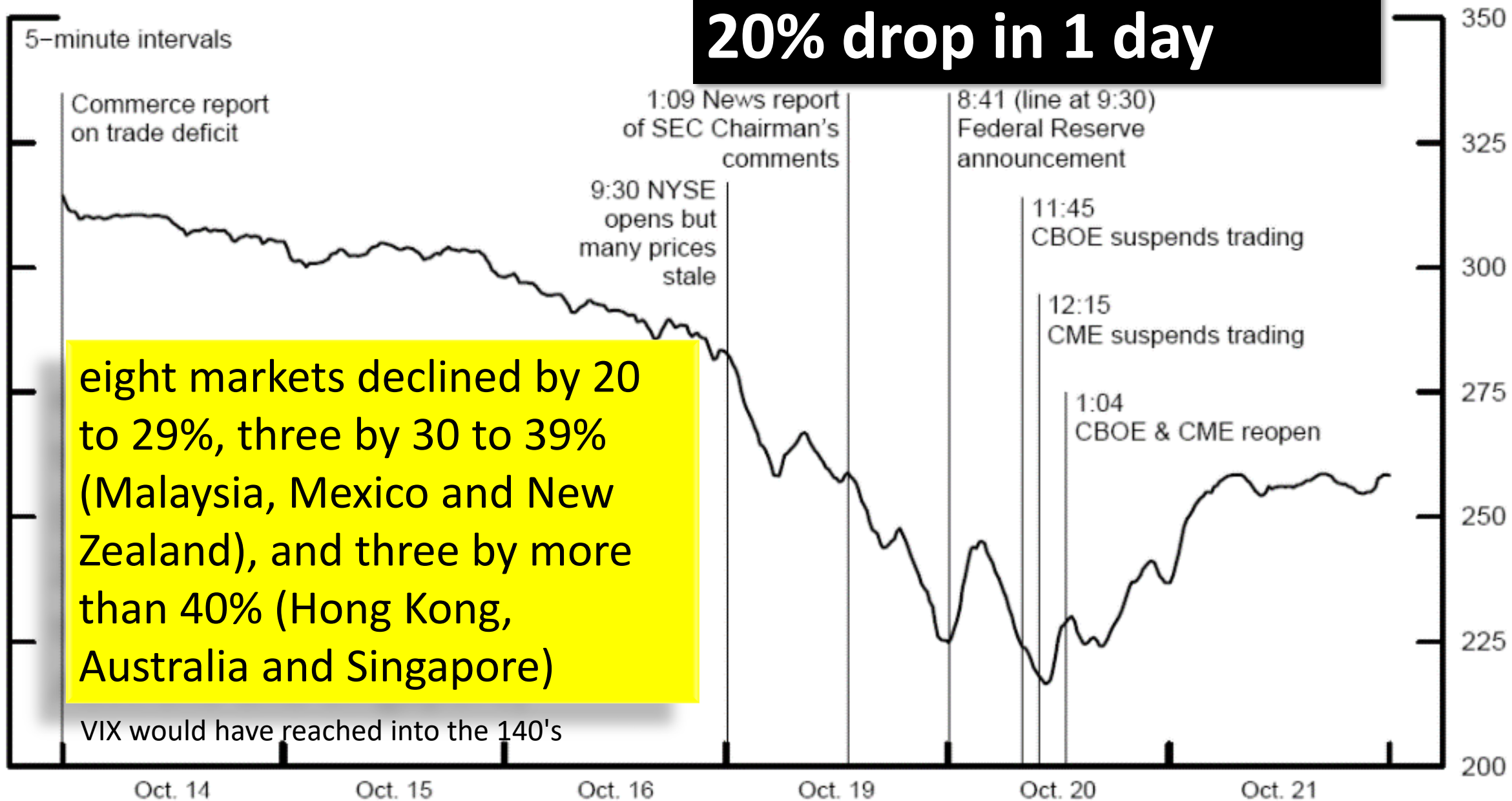
- Dynamic
- Does understand that banks create money
- Predicts economic cycles



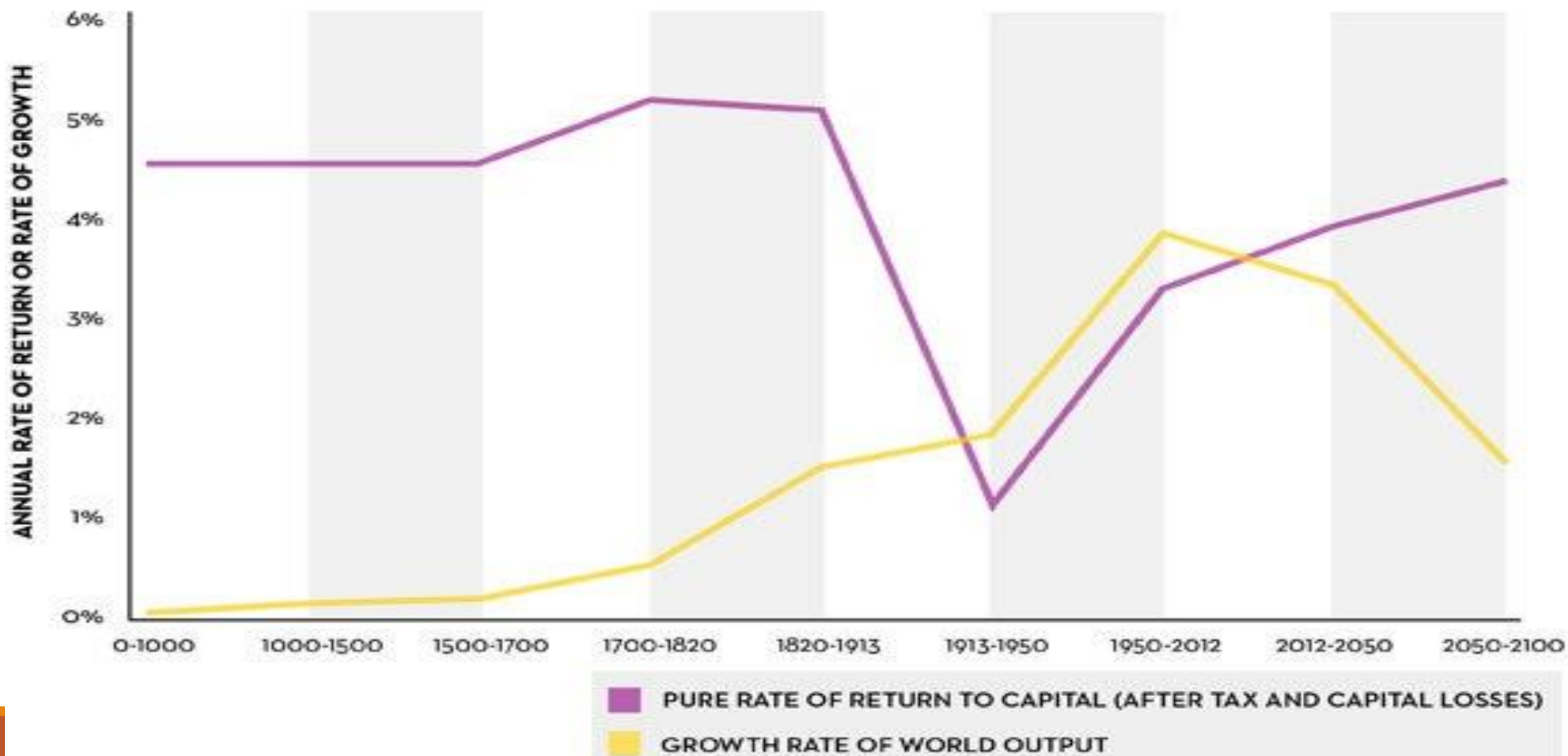
Predicted the Crash before it happened, 2005

Black Monday (1987) 20% drop in 1 day

S&P 500 index around the time of the crash



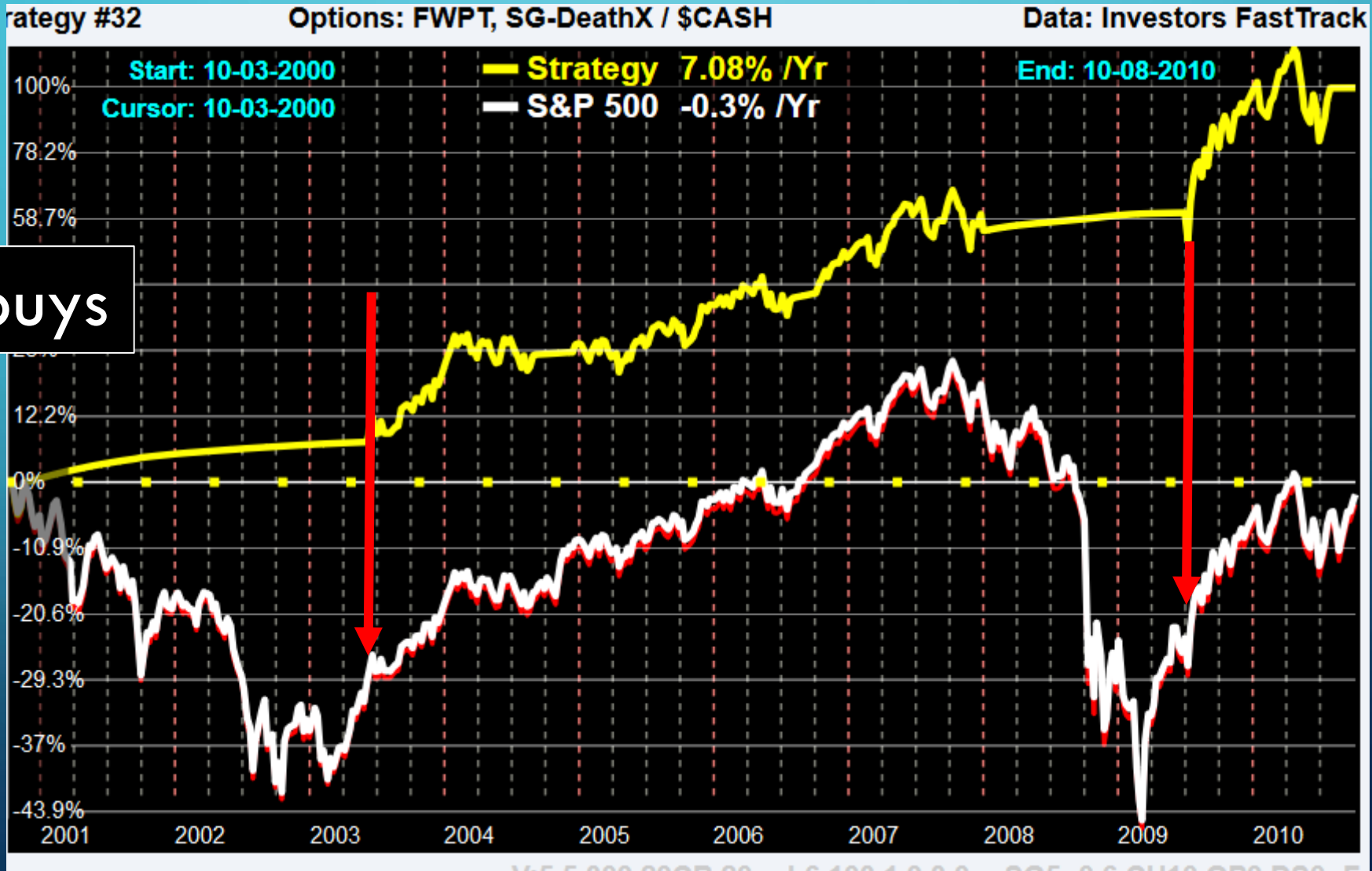
AFTER TAX RATE OF RETURN VS. GROWTH RATE AT THE WORLD LEVEL, FROM ANTIQUITY UNTIL 2100



BUT THE APPROACH HAS PROBLEMS

.....OR AT LEAST ROOM FOR IMPROVEMENT

Late buys



Return (CAGR= compound annual growth rate(%/yr))

Gain

Net after Costs (advisor fees, mutual fund fees, taxes....)

Greed

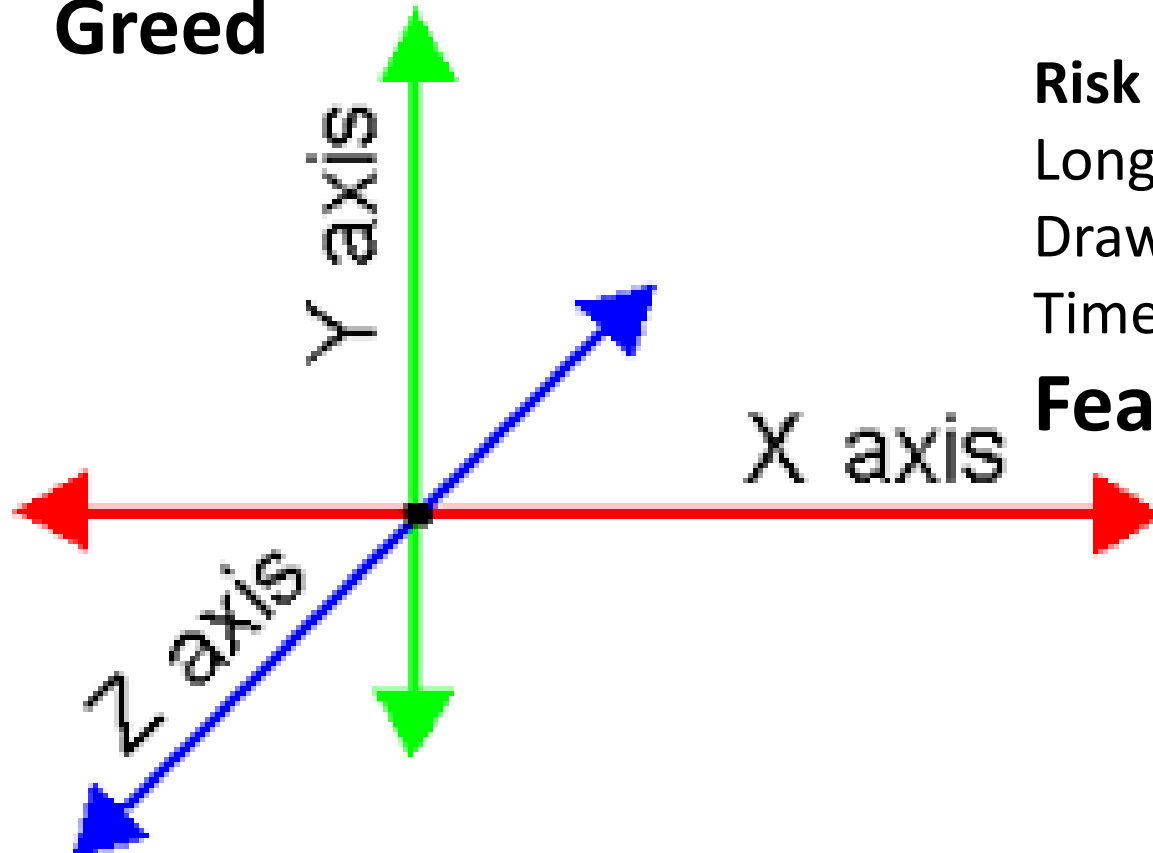
Risk (Beta= standard deviation of return)

Long term loss of money

Draw down or maximum draw down(%)

Time lost (Years)

Fear



Effort

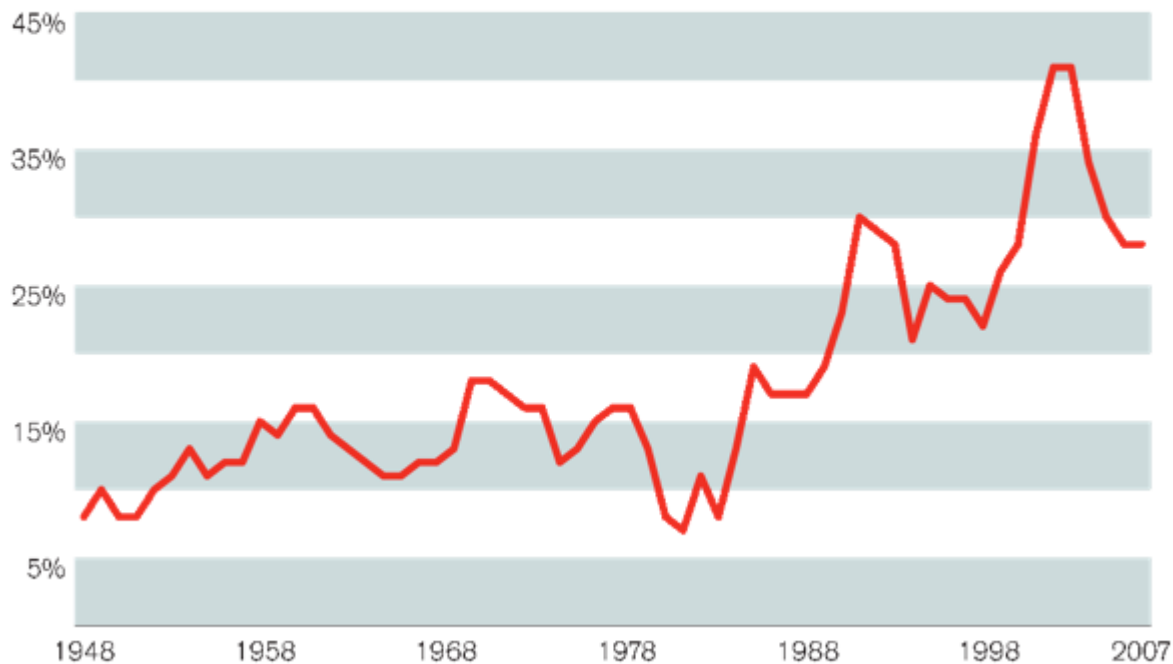
Personal effort (accounting, self education....)

Time spent managing portfolio and communicating with others (e.g. spouse)

MONEY DISTORTED INFORMATION ABOUT INVESTING MAKES FIGURING OUT THE TRUTH MUCH HARDER THAN PHYSICS



**FINANCIAL-INDUSTRY PROFITS
AS A SHARE OF U.S. BUSINESS PROFITS**



**US GDP by Industry
(2007)**



Strategy #32

Options: FWPT, SG-DeathX / \$CASH

Data: Investors FastTrack



Yikes!

1998

1 year

VIX(=40) SIGNAL ALONE DOES NOT WORK

