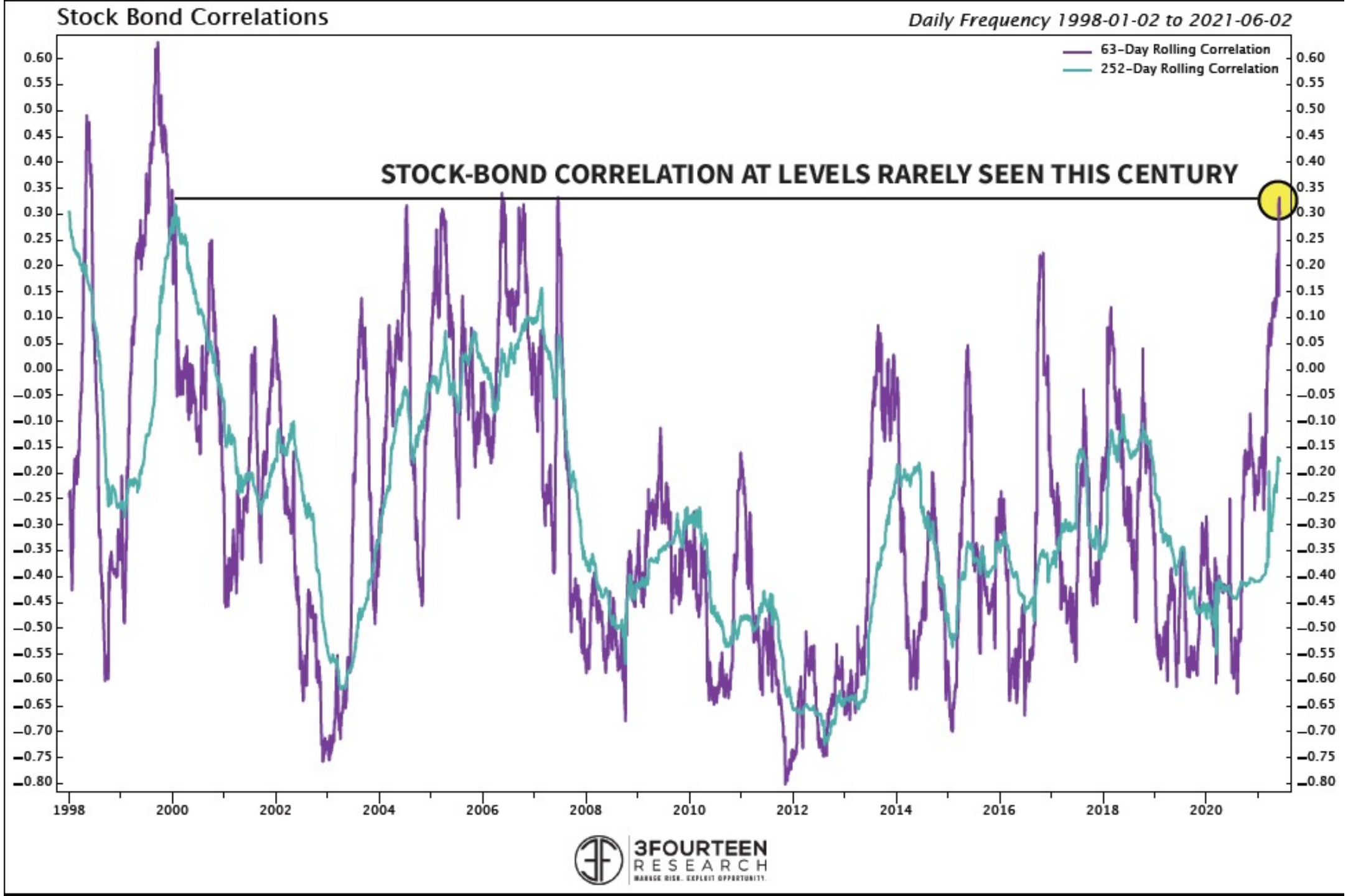
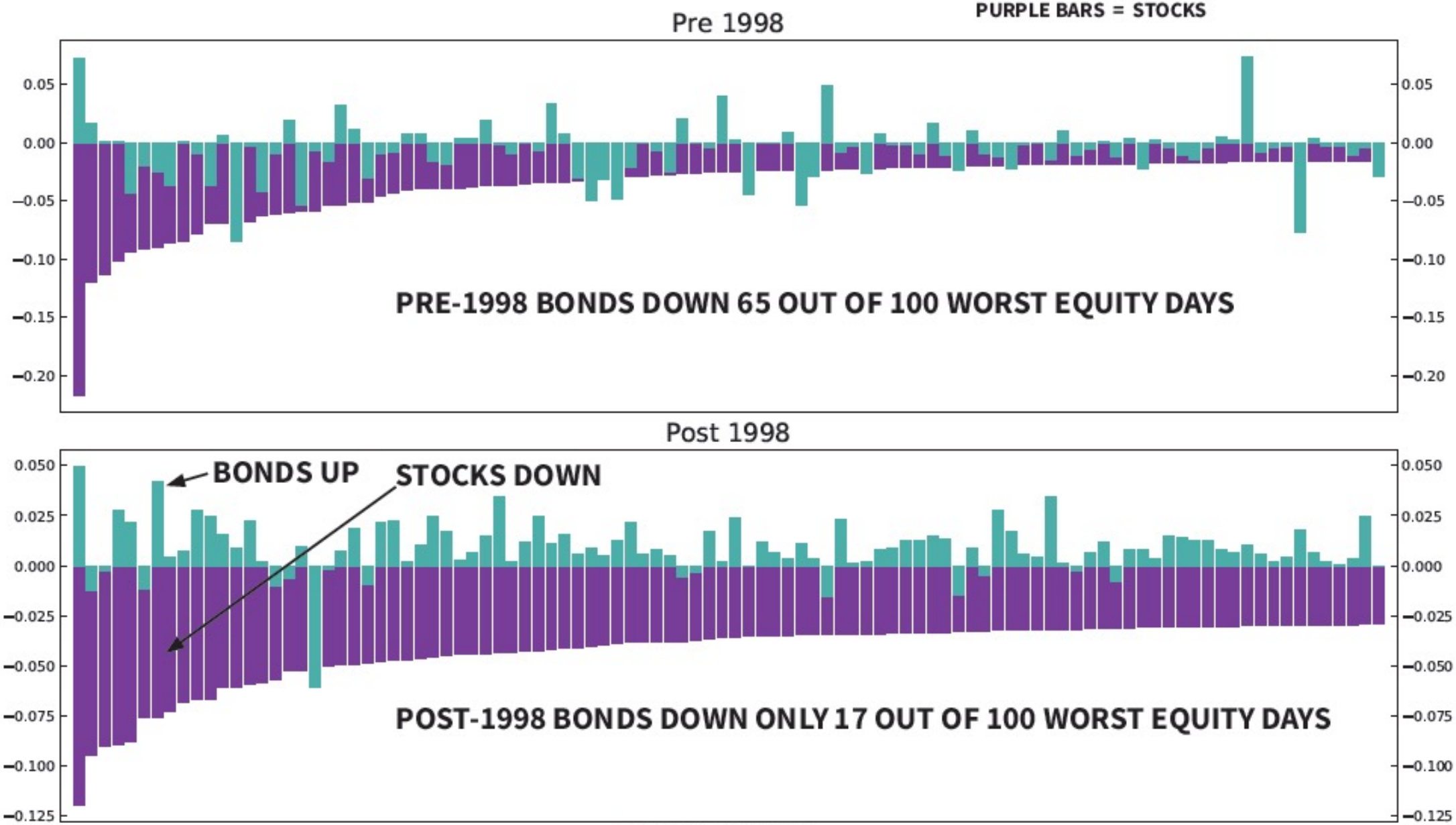
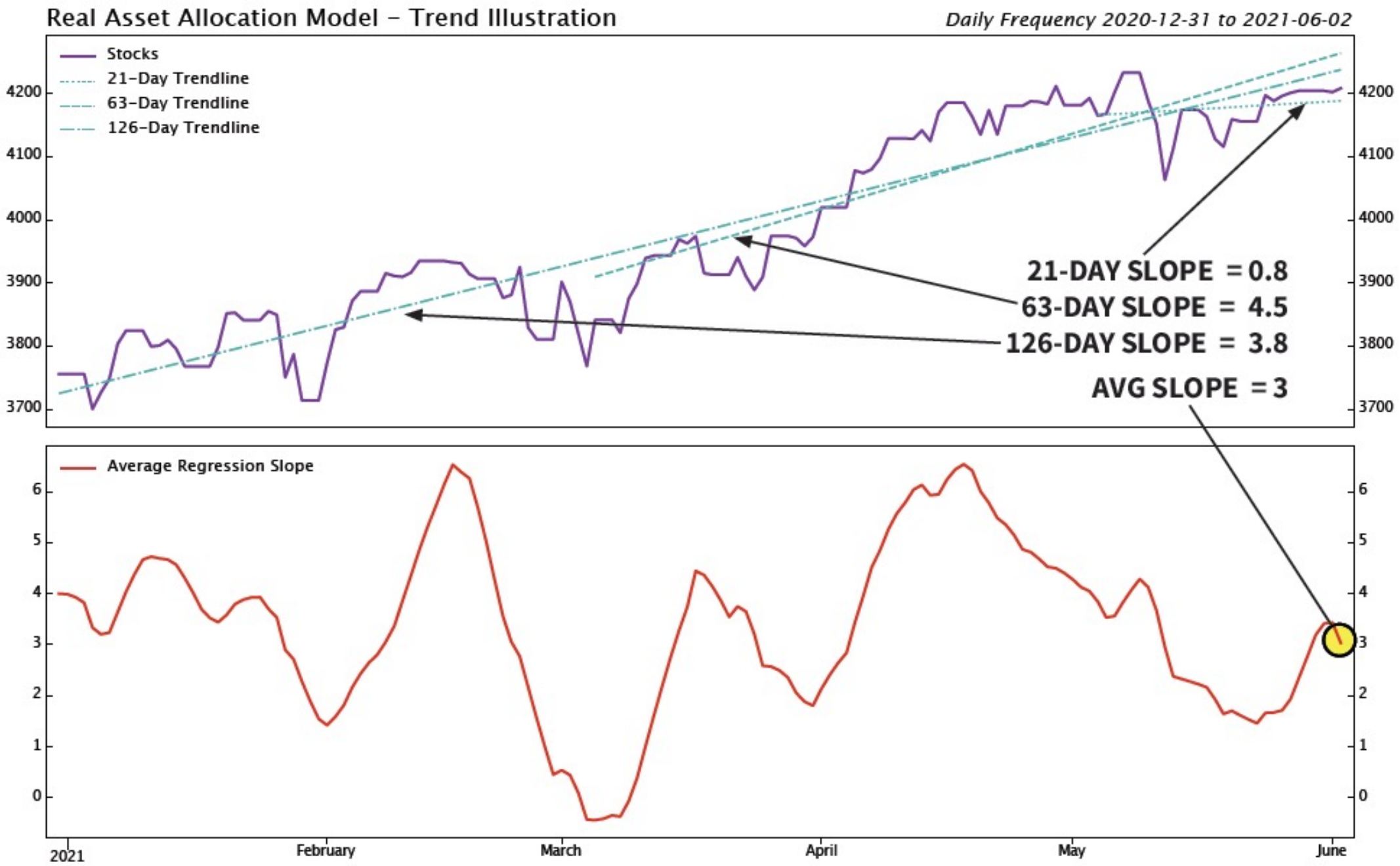

Stock Bond Correlations
Daily Frequency 1998-01-02 to 2021-06-02
63-Day Rolling Correlation
252-Day Rolling Correlation
STOCK-BOND CORRELATION AT LEVELS RARELY SEEN THIS CENTURY
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
−0.05
−0.10
−0.15
−0.20
−0.25
−0.30
−0.35
−0.40
−0.45
−0.50
−0.55
−0.60
−0.65
−0.70
−0.75
−0.80
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
3FOURTEEN
RESEARCH

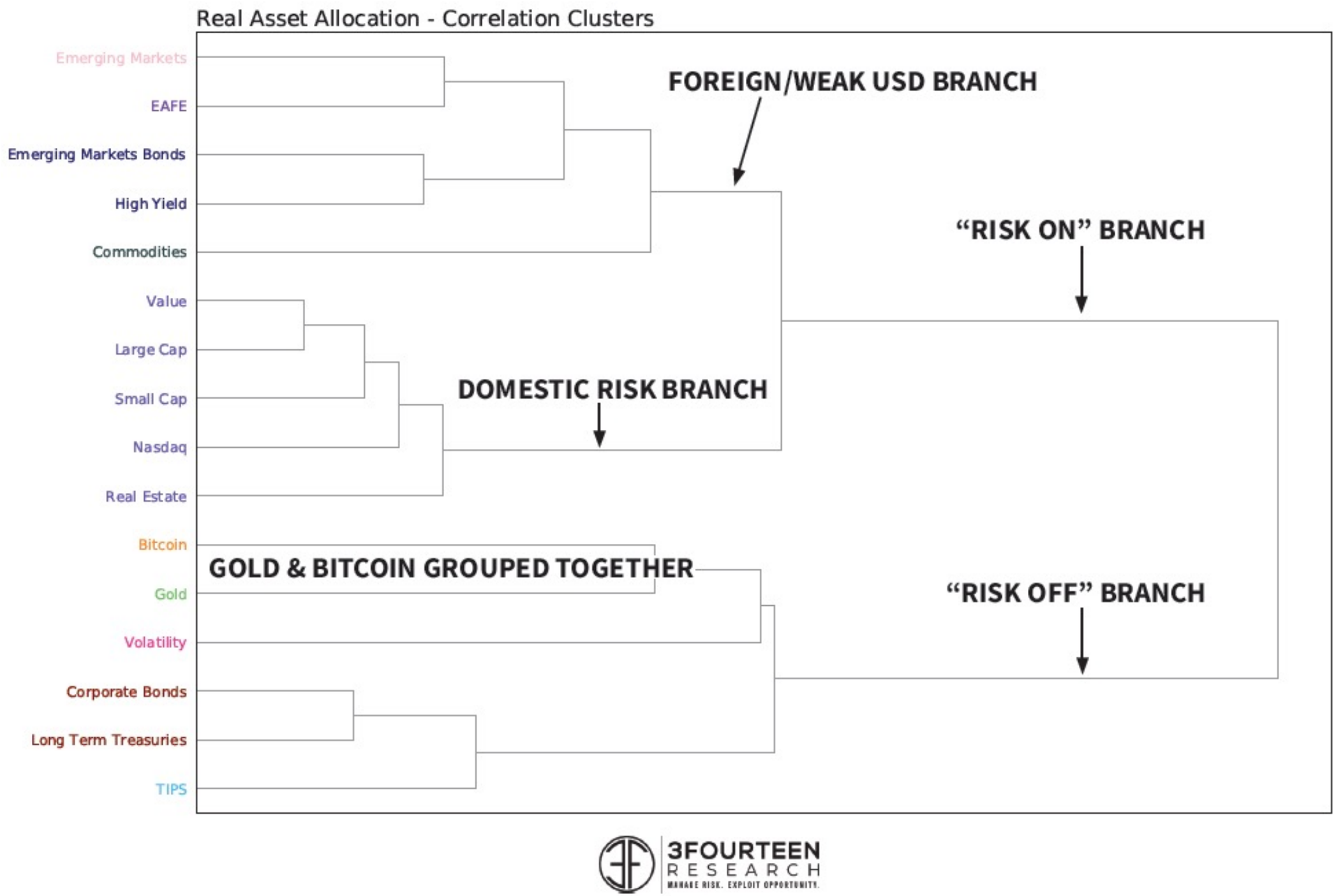
Worst 100 Days of Stock Returns - Bond Performance

BLUE BARS = BONDS
PURPLE BARS = STOCKS



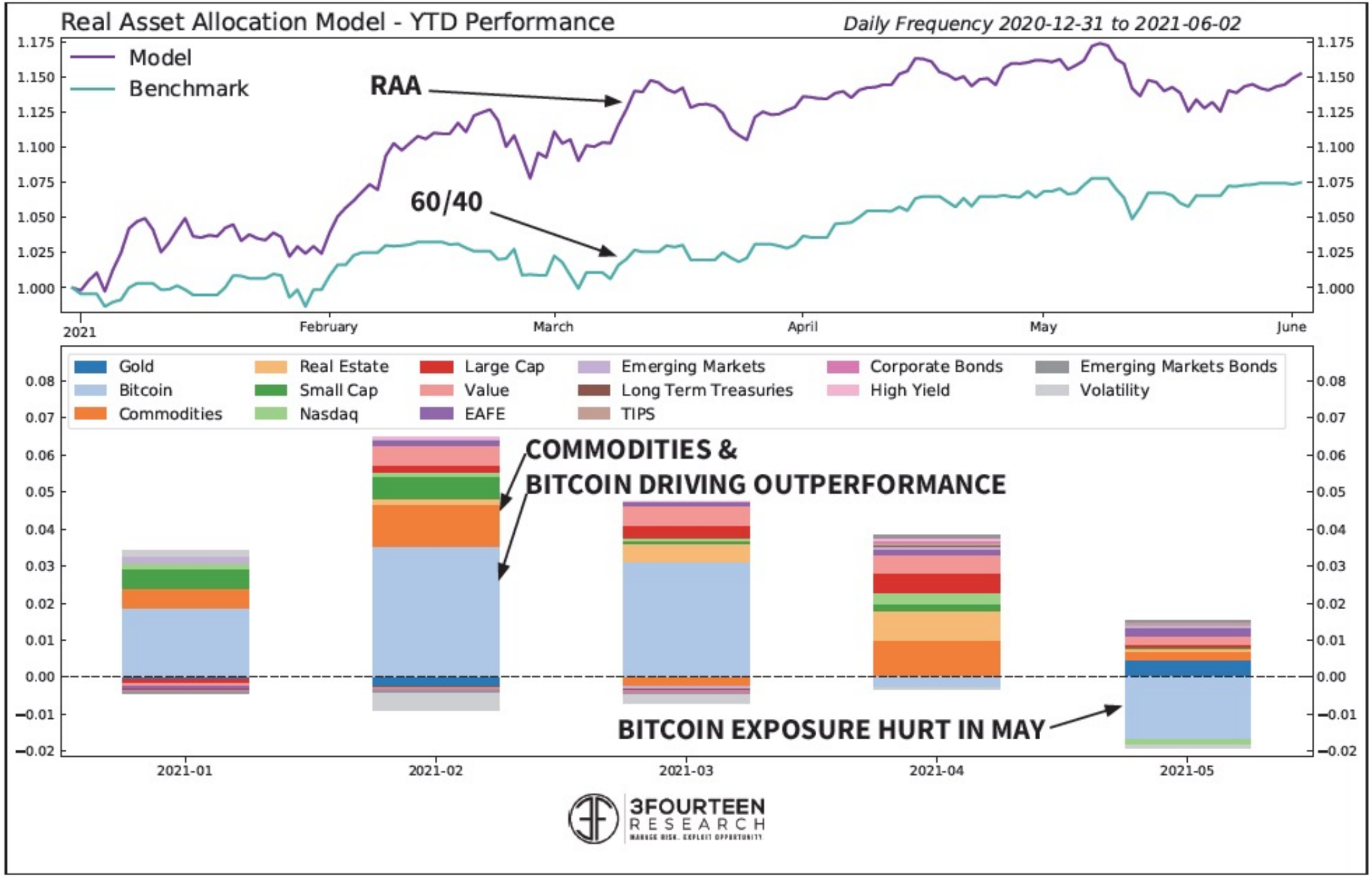
3FOURTEEN RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.

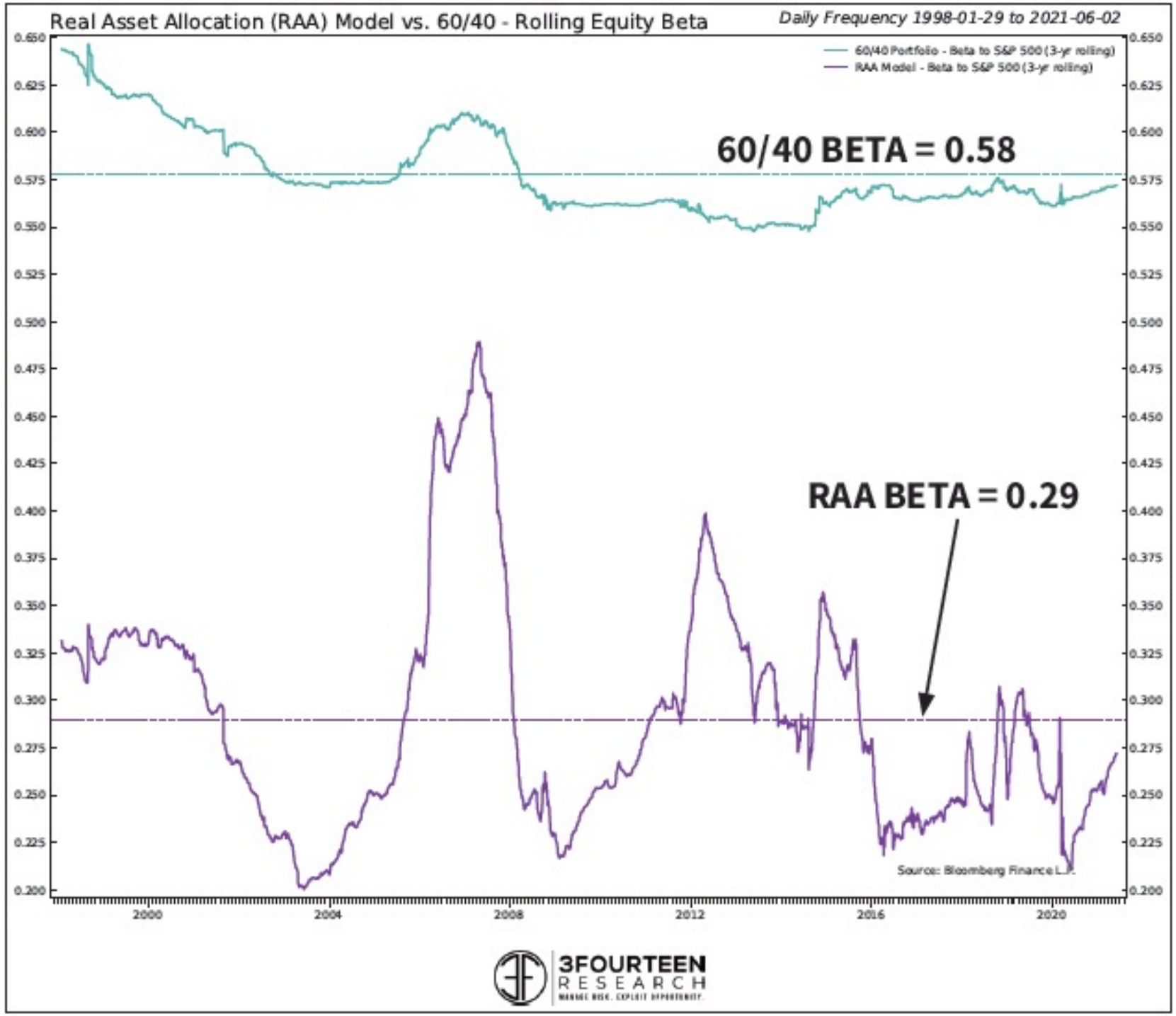

Real Asset Allocation Model – Trend Illustration
Daily Frequency 2020-12-31 to 2021-06-02
Stocks
21-Day Trendline
63-Day Trendline
126-Day Trendline
21-DAY SLOPE = 0.8
63-DAY SLOPE = 4.5
126-DAY SLOPE = 3.8
AVG SLOPE = 3
Average Regression Slope
2021
February
March
April
May
June
3FOURTEEN
RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.

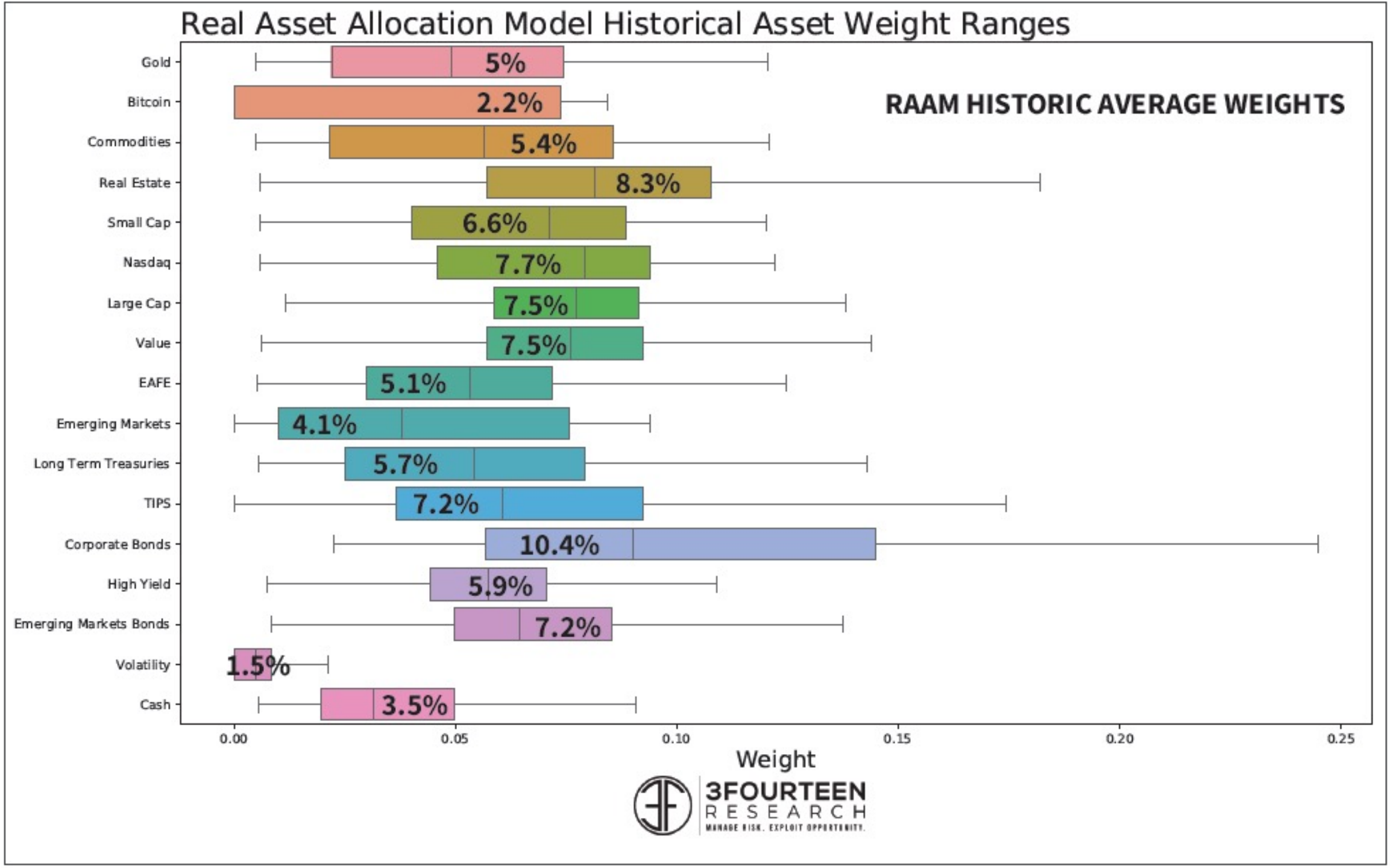

Real Asset Allocation - Correlation Clusters
Emerging Markets
EAFE
Emerging Markets Bonds
High Yield
Commodities
Value
Large Cap
Small Cap
Nasdaq
Real Estate
Bitcoin
Gold
Volatility
Corporate Bonds
Long Term Treasuries
TIPS
FOREIGN/WEAK USD BRANCH
"RISK ON" BRANCH
DOMESTIC RISK BRANCH
GOLD & BITCOIN GROUPED TOGETHER
"RISK OFF" BRANCH
3FOURTEEN
RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.

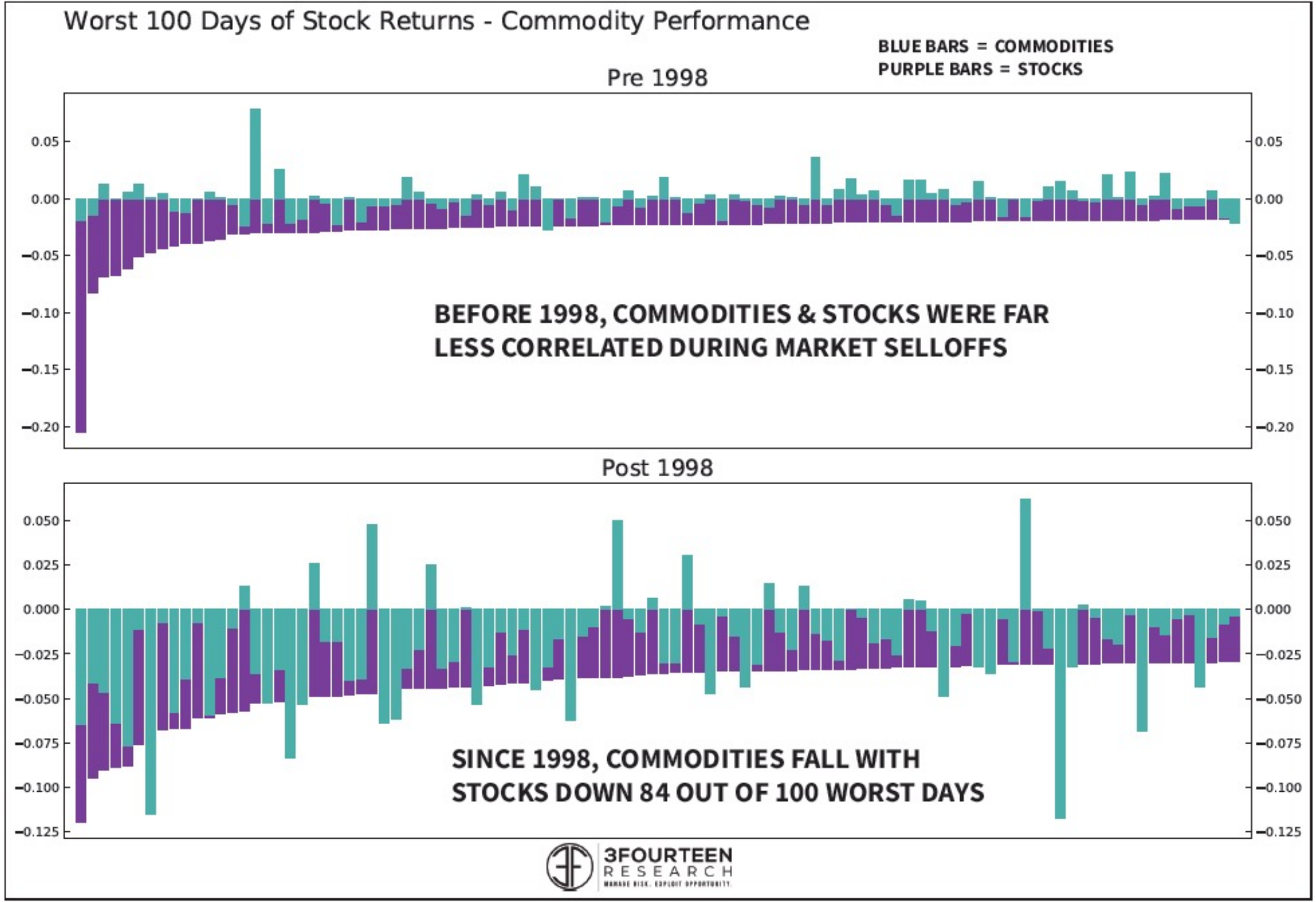
REAL ASSET ALLOCATION INTERNAL SCORECARD

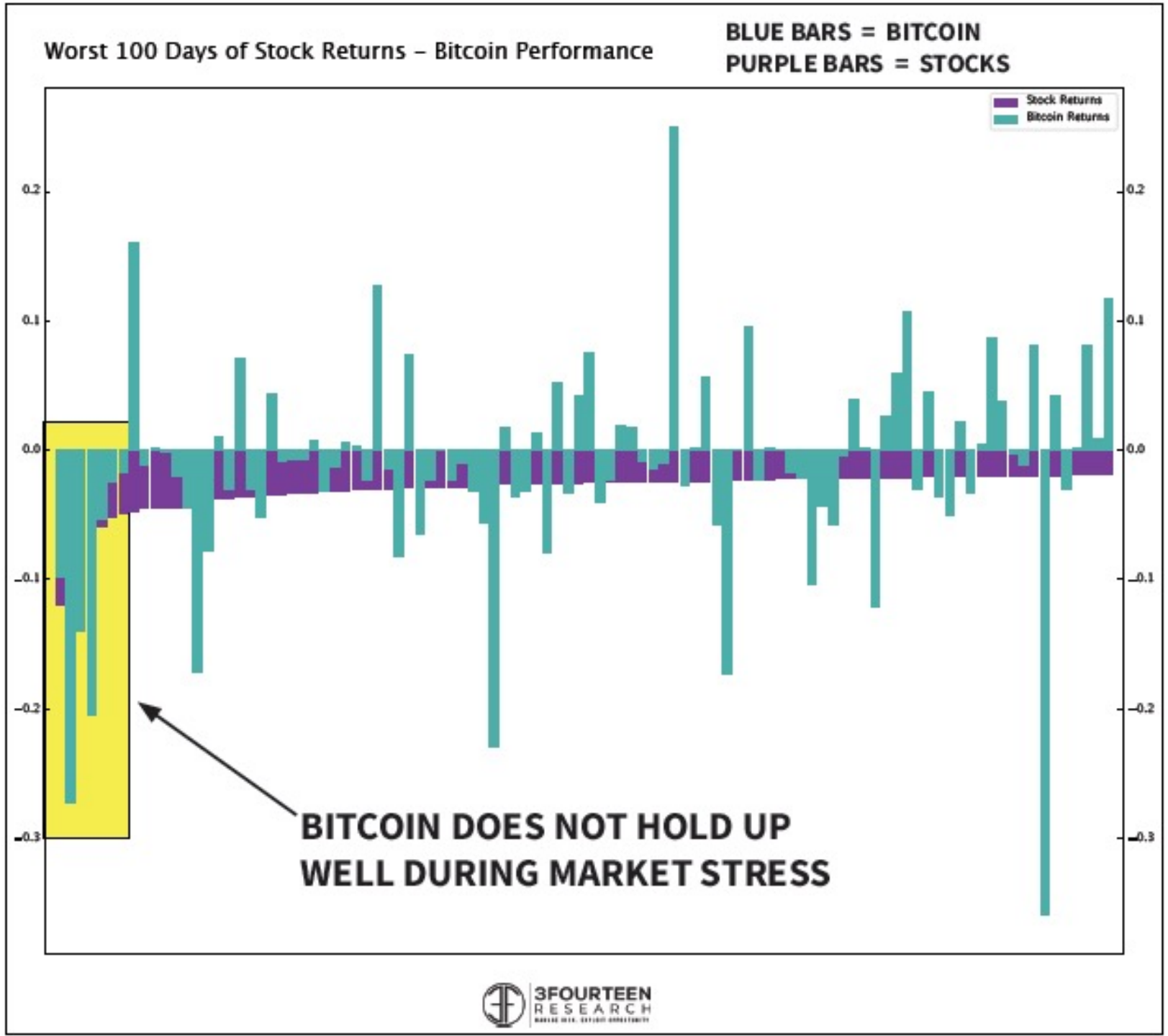
Asset Name	Trend Score	Volatility/Correlation Score	Model Weight
Gold	89	67	10.0%
Value	78	78	9.4%
TIPS	61	89	9.3%
Real Estate	83	61	9.3%
Corporate Bonds	39	94	9.0%
Commodities	94	44	8.8%
Large Cap	67	83	8.7%
EAFE	72	17	6.4%
Emerging Markets Bonds	56	33	5.2%
High Yield	50	22	4.6%
Long Term Treasuries	44	39	4.3%
Nasdaq	17	72	3.8%
Small Cap	22	56	3.7%
Emerging Markets	33	11	3.0%
Cash	28	6	2.5%
Volatility	11	50	1.5%
Bitcoin	6	28	0.7%

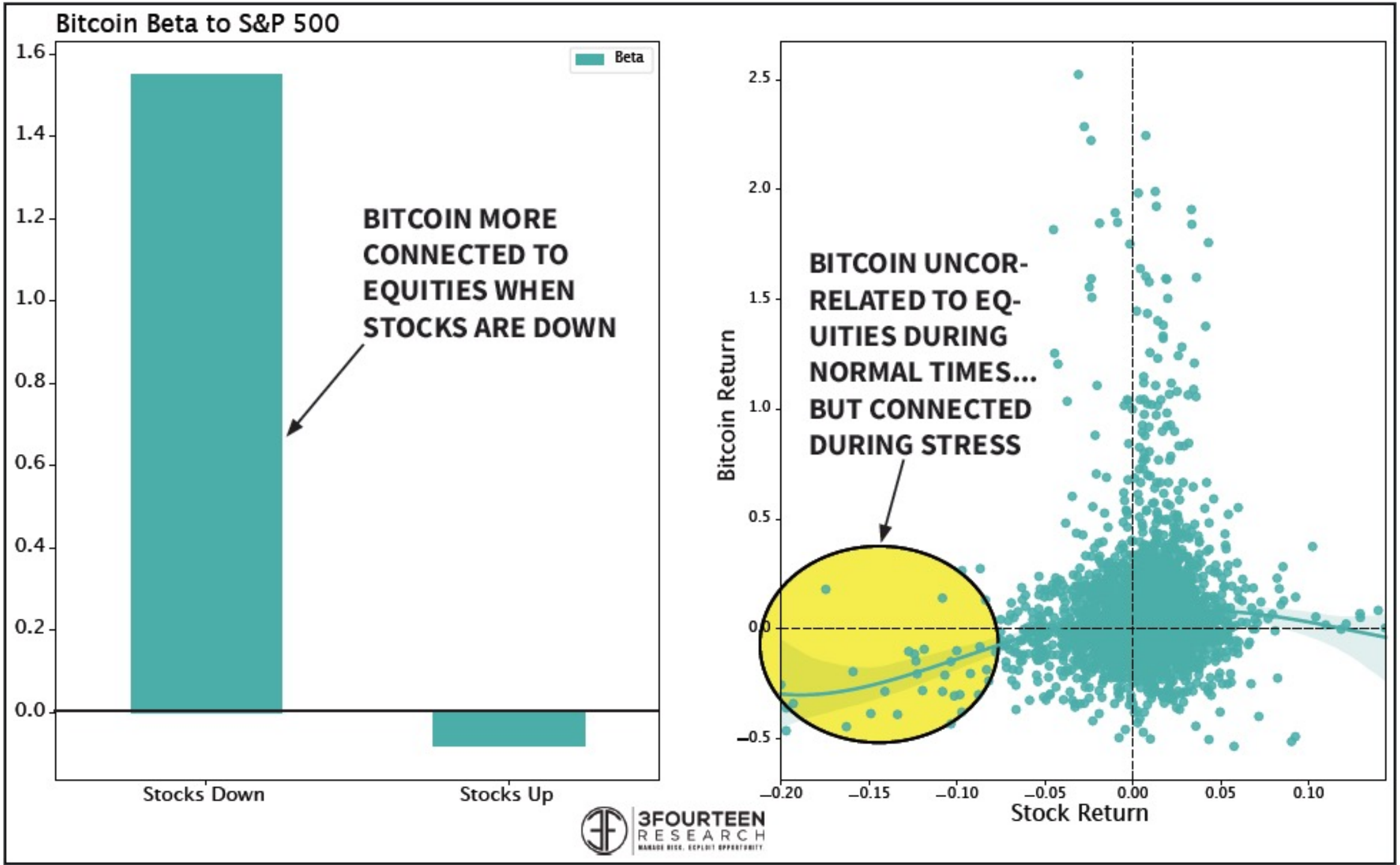

Real Asset Allocation Model - YTD Performance
Daily Frequency 2020-12-31 to 2021-06-02
Model
Benchmark
RAA
60/40
1.175
1.150
1.125
1.100
1.075
1.050
1.025
1.000
2021
February
March
April
May
June
Gold
Bitcoin
Commodities
Real Estate
Small Cap
Nasdaq
Large Cap
Value
EAFE
Emerging Markets
Long Term Treasuries
TIPS
Corporate Bonds
High Yield
Emerging Markets Bonds
Volatility
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
−0.01
−0.02
COMMODITIES &
BITCOIN DRIVING OUTPERFORMANCE
BITCOIN EXPOSURE HURT IN MAY
2021-01
2021-02
2021-03
2021-04
2021-05
3FOURTEEN
RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.

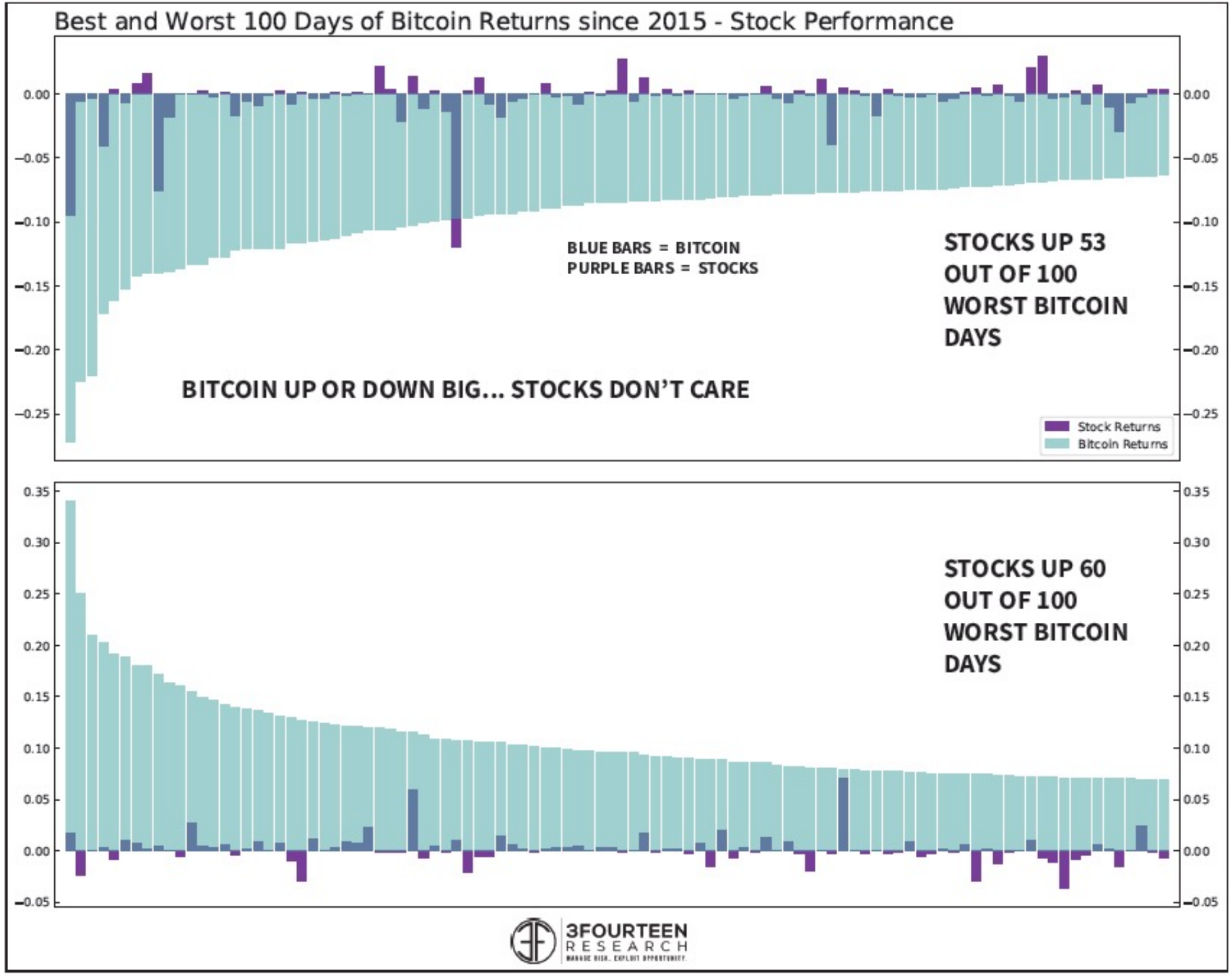

Real Asset Allocation (RAA) Model vs. 60/40 - Rolling Equity Beta
Daily Frequency 1998-01-29 to 2021-06-02
60/40 Portfolio - Beta to S&P 500 (3-yr rolling)
RAA Model - Beta to S&P 500 (3-yr rolling)
60/40 BETA = 0.58
RAA BETA = 0.29
Source: Bloomberg Finance L.P.
0.650
0.625
0.600
0.575
0.550
0.525
0.500
0.475
0.450
0.425
0.400
0.375
0.350
0.325
0.300
0.275
0.250
0.225
0.200
2000
2004
2008
2012
2016
2020
3FOURTEEN
RESEARCH

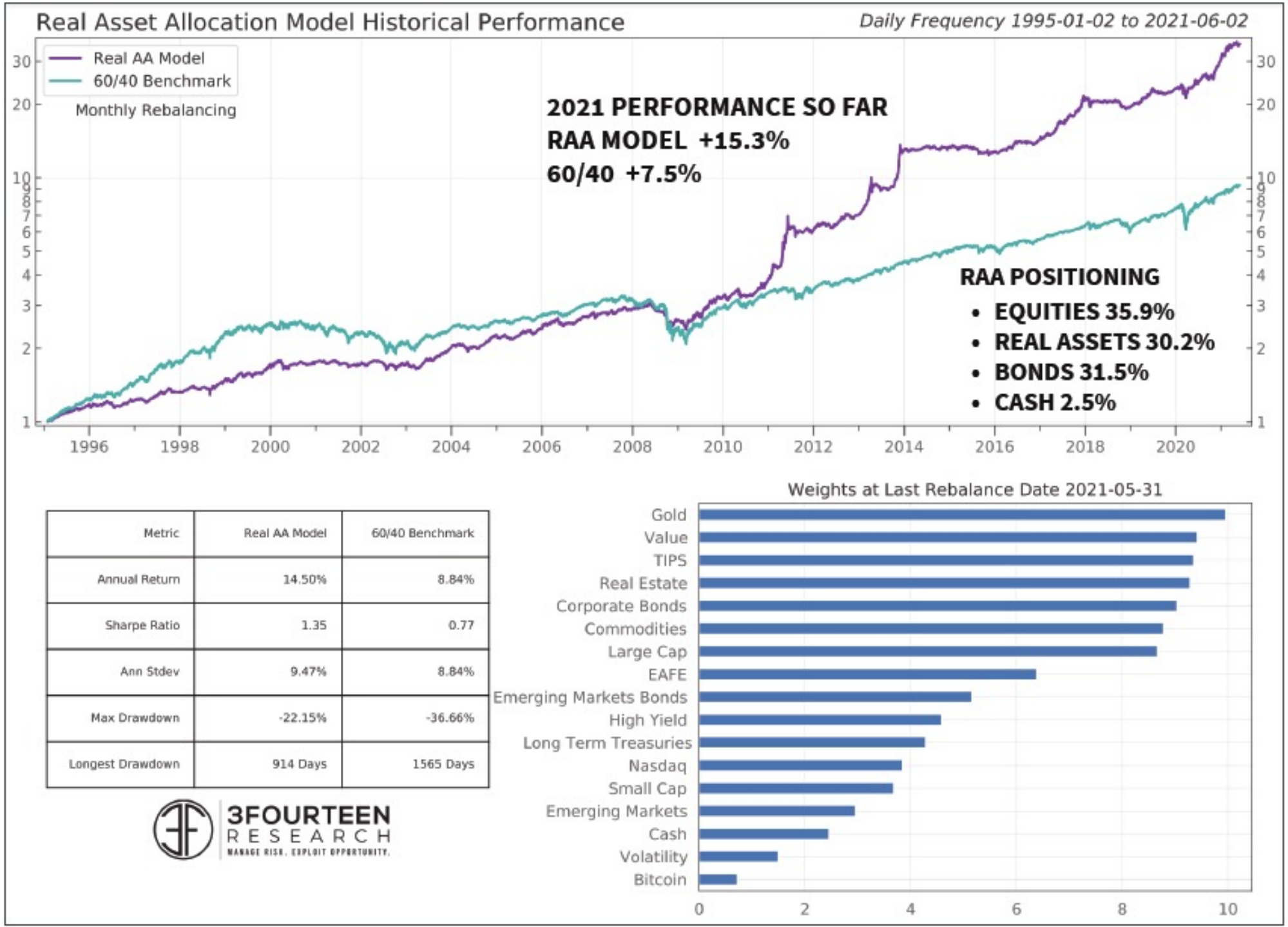

Real Asset Allocation Model Historical Asset Weight Ranges
RAAM HISTORIC AVERAGE WEIGHTS
Gold
Bitcoin
Commodities
Real Estate
Small Cap
Nasdaq
Large Cap
Value
EAFE
Emerging Markets
Long Term Treasuries
TIPS
Corporate Bonds
High Yield
Emerging Markets Bonds
Volatility
Cash
5%
2.2%
5.4%
8.3%
6.6%
7.7%
7.5%
7.5%
5.1%
4.1%
5.7%
7.2%
10.4%
5.9%
7.2%
1.5%
3.5%
0.00
0.05
0.10
0.15
0.20
0.25
Weight
3FOURTEEN
RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.


Worst 100 Days of Stock Returns - Commodity Performance
BLUE BARS = COMMODITIES
PURPLE BARS = STOCKS
Pre 1998
0.05
0.00
−0.05
−0.10
−0.15
−0.20
BEFORE 1998, COMMODITIES & STOCKS WERE FAR
LESS CORRELATED DURING MARKET SELLOFFS
Post 1998
0.050
0.025
0.000
−0.025
−0.050
−0.075
−0.100
−0.125
SINCE 1998, COMMODITIES FALL WITH
STOCKS DOWN 84 OUT OF 100 WORST DAYS
3FOURTEEN
RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.


Worst 100 Days of Stock Returns – Bitcoin Performance
BLUE BARS = BITCOIN
PURPLE BARS = STOCKS
Stock Returns
Bitcoin Returns
0.2
0.1
0.0
−0.1
−0.2
−0.3
BITCOIN DOES NOT HOLD UP
WELL DURING MARKET STRESS
3FOURTEEN
RESEARCH


Bitcoin Beta to S&P 500
Beta
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
BITCOIN MORE CONNECTED TO EQUITIES WHEN STOCKS ARE DOWN
Stocks Down
Stocks Up
Bitcoin Return
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
BITCOIN UNCOR-RELATED TO EQ-UITIES DURING NORMAL TIMES... BUT CONNECTED DURING STRESS
−0.20
−0.15
−0.10
−0.05
0.00
0.05
0.10
Stock Return
3FOURTEEN RESEARCH


Best and Worst 100 Days of Bitcoin Returns since 2015 - Stock Performance
BLUE BARS = BITCOIN
PURPLE BARS = STOCKS
STOCKS UP 53
OUT OF 100
WORST BITCOIN
DAYS
BITCOIN UP OR DOWN BIG... STOCKS DON'T CARE
Stock Returns
Bitcoin Returns
STOCKS UP 60
OUT OF 100
WORST BITCOIN
DAYS
3FOURTEEN
RESEARCH



Metric	Real AA Model	60/40 Benchmark
Annual Return	14.50%	8.84%
Sharpe Ratio	1.35	0.77
Ann Stdev	9.47%	8.84%
Max Drawdown	-22.15%	-36.66%
Longest Drawdown	914 Days	1565 Days

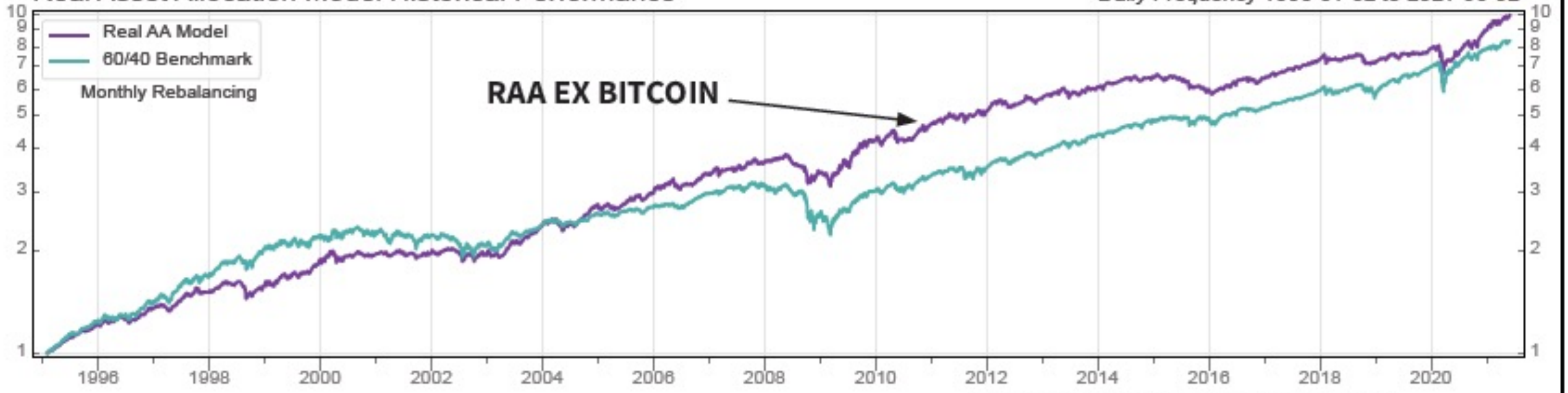
3FOURTEEN RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.

OUR PICKS

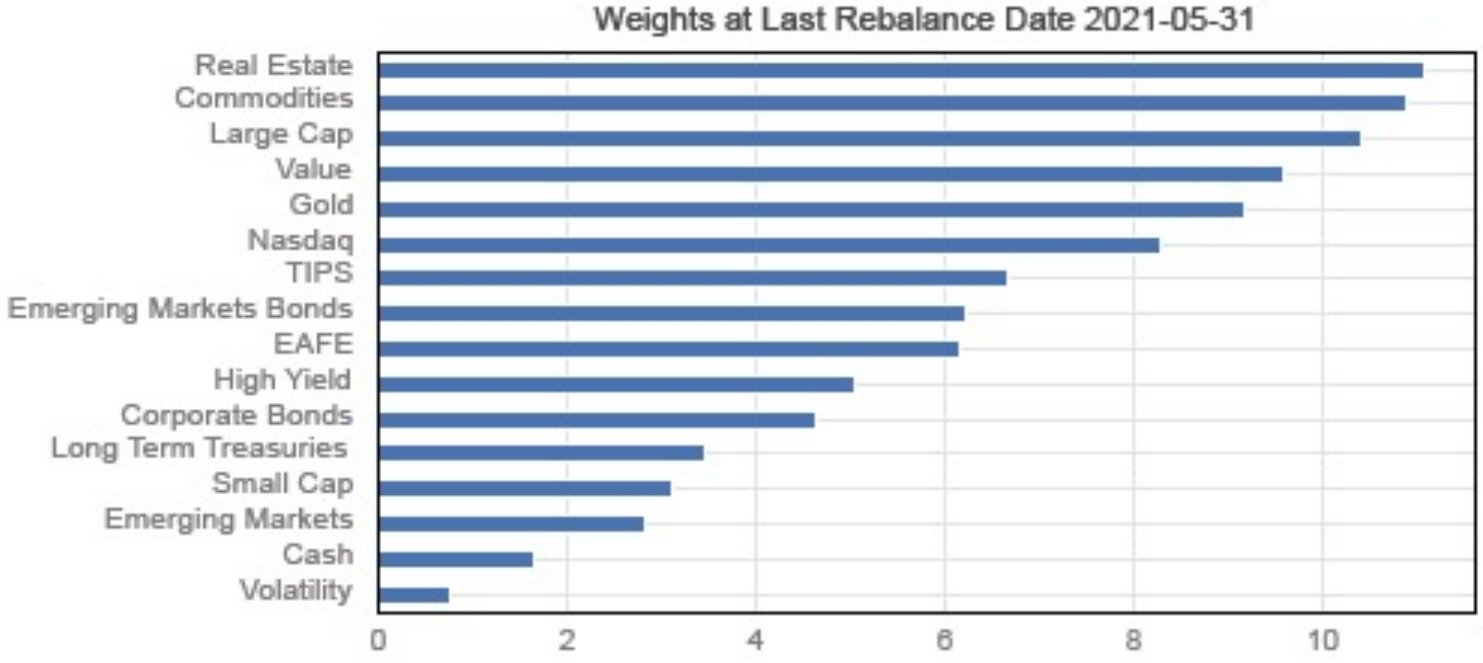
Ticker	% Change	S&P 500 % Chg	Start Date	Report	Close Date
XLF	22.2%	11.4%	JAN 14, 2021	The Great Yield Famine The Warm Embrace of Consensus	--
SU	30.6%	11.4%			--
CNQ	44.4%	11.4%			--
ENB	13.3%	11.4%			--
LNC	24.9%	10.3%	FEB 25, 2021	Historic Turbulence Ahead	--
COF	39.5%	10.3%			--
DFS	27.9%	10.3%			--
MO	13.8%	11.9%	MAR 4, 2021	Model Update	--
XLE	5.4%	9.9%	MAR 5, 2021	Position Update	--
OSK	9.2%	2.9%	APR 8, 2021	Bracing for the Hangover	--
NOC	8.9%	1.8%	APR 13, 2021	Position Update	--
CC	8.0%	0.3%	MAY 6, 2021	Inflation: Are We Missing...	--

Real Asset Allocation Model Historical Performance

Daily Frequency 1995-01-02 to 2021-06-02



Metric	Real AA Model	60/40 Benchmark
Annual Return	9.11%	8.37%
Sharpe Ratio	1.19	0.90
Ann Stdev	7.34%	8.37%
Max Drawdown	-19.72%	-29.94%
Longest Drawdown	751 Days	1197 Days



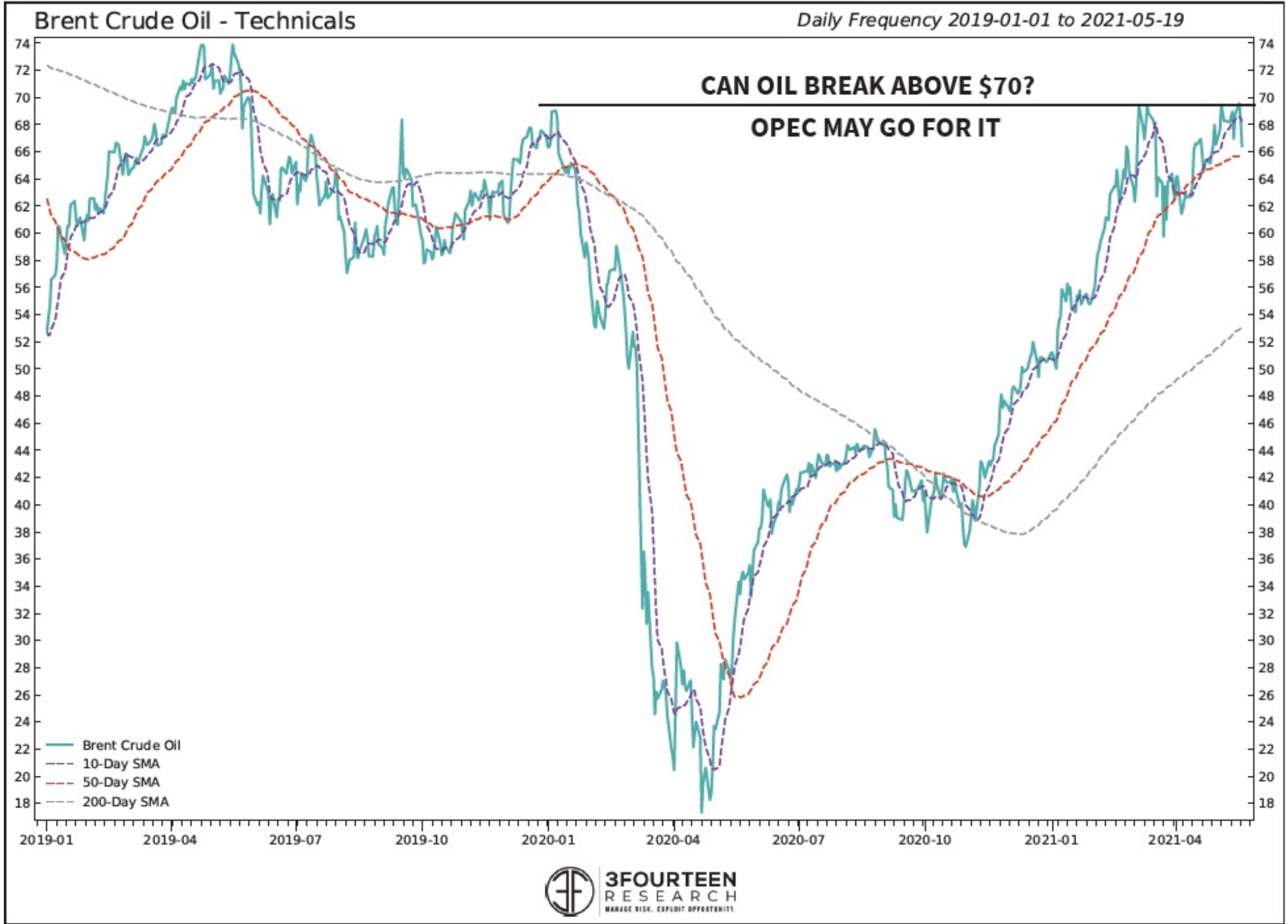
3FOURTEEN RESEARCH

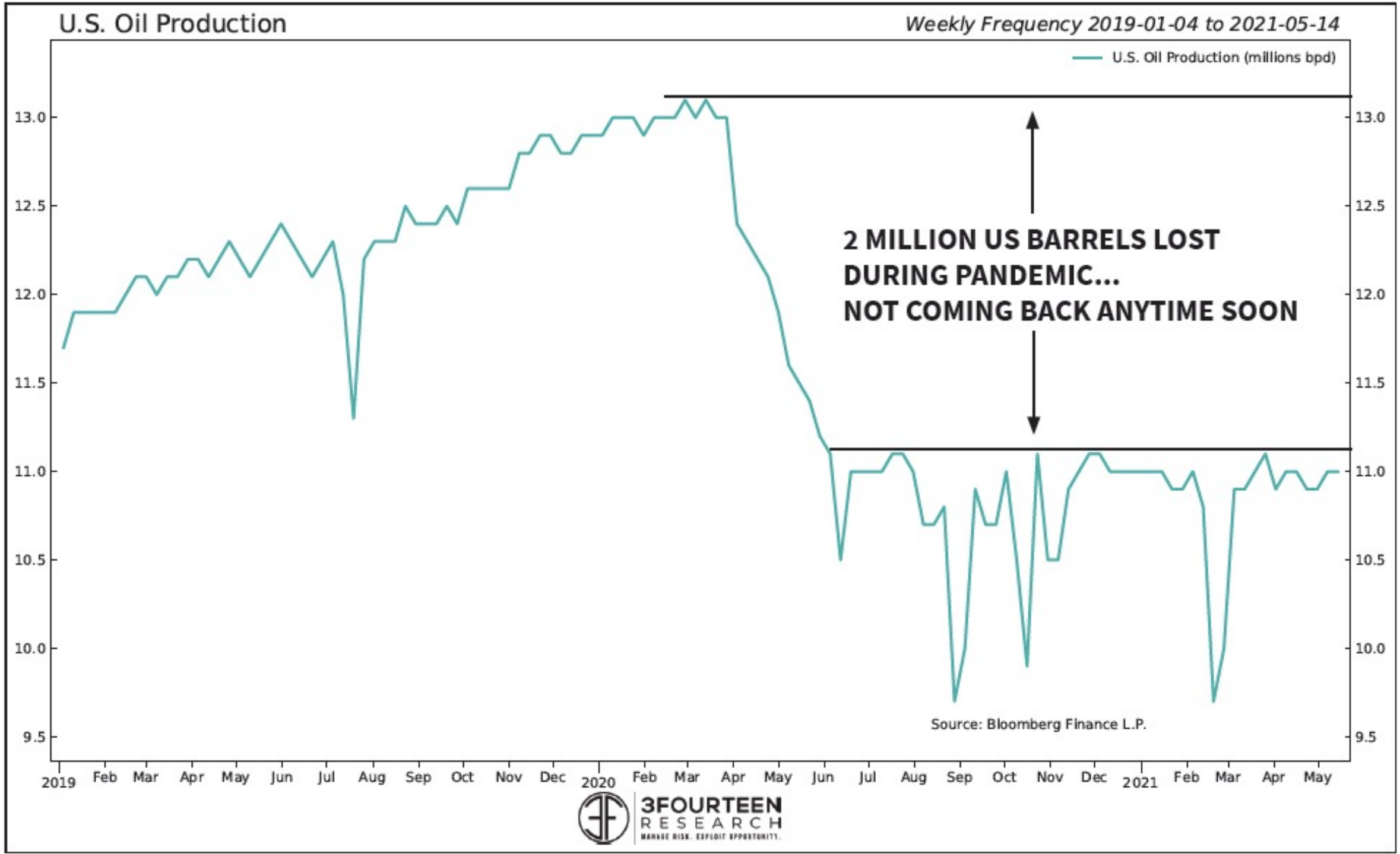
ASSET	TICKER (SUGGESTED)	2021-06-02	2021-05-31	2021-04-30	2021-03-31
BONDS		**31.4%**	**32.4%**	**21.1%**	**24.0%**
Corporate Bonds	AGG	**9.0%**	9.0%	3.5%	5.1%
Emerging Markets Bonds	EMB	**5.2%**	5.2%	4.5%	6.1%
High Yield	JNK	**4.1%**	4.6%	5.7%	6.5%
Long Term Treasuries	TLT	**3.3%**	4.3%	2.1%	1.1%
TIPS	TIP	**9.8%**	9.3%	5.4%	5.1%
CASH		**2.5%**	**2.5%**	**1.0%**	**4.9%**
Cash	Cash	**2.5%**	2.5%	1.0%	4.9%
EQUITIES		**35.9%**	**34.9%**	**45.5%**	**41.6%**
EAFE	EFA	**6.4%**	6.4%	6.0%	5.8%
Emerging Markets	VWO	**4.4%**	3.0%	3.0%	2.3%
Large Cap	SPY	**8.2%**	8.7%	11.4%	9.6%
Nasdaq	QQQ	**3.8%**	3.8%	9.9%	5.2%
Small Cap	IWM	**3.7%**	3.7%	5.6%	7.9%
Value	SDY	**9.4%**	9.4%	9.6%	10.8%
REAL ASSETS		**30.2%**	**30.2%**	**32.4%**	**29.5%**
Bitcoin	GBTC	**0.7%**	0.7%	7.4%	8.3%
Commodities	GSG	**8.8%**	8.8%	8.4%	10.1%
Gold	GLD	**10.0%**	10.0%	5.4%	1.5%
Real Estate	USRT	**9.3%**	9.3%	10.8%	9.1%
Volatility	VXX	**1.5%**	1.5%	0.5%	0.5%

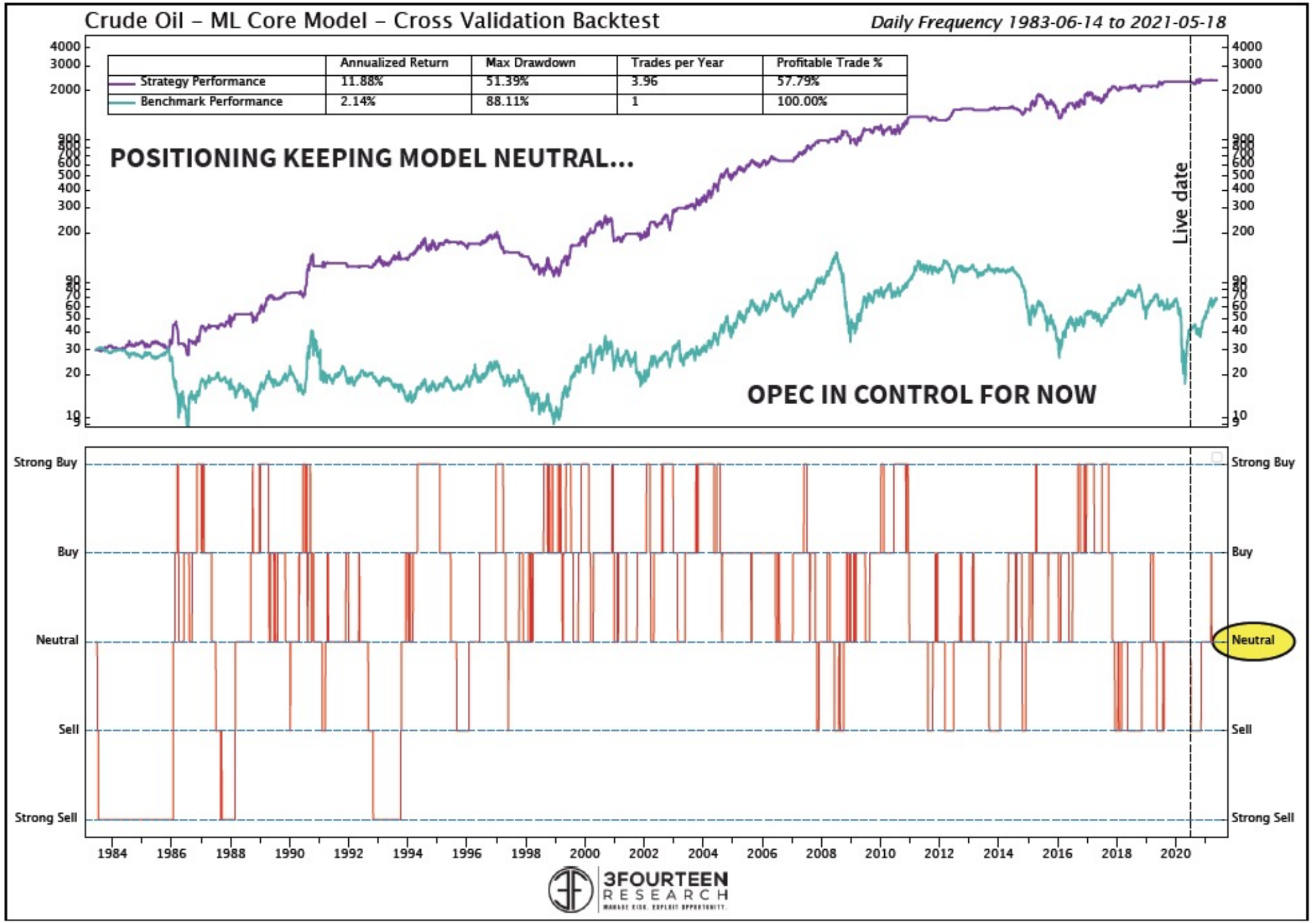
ALLOCATION INCREASE SINCE LAST REBALANCE

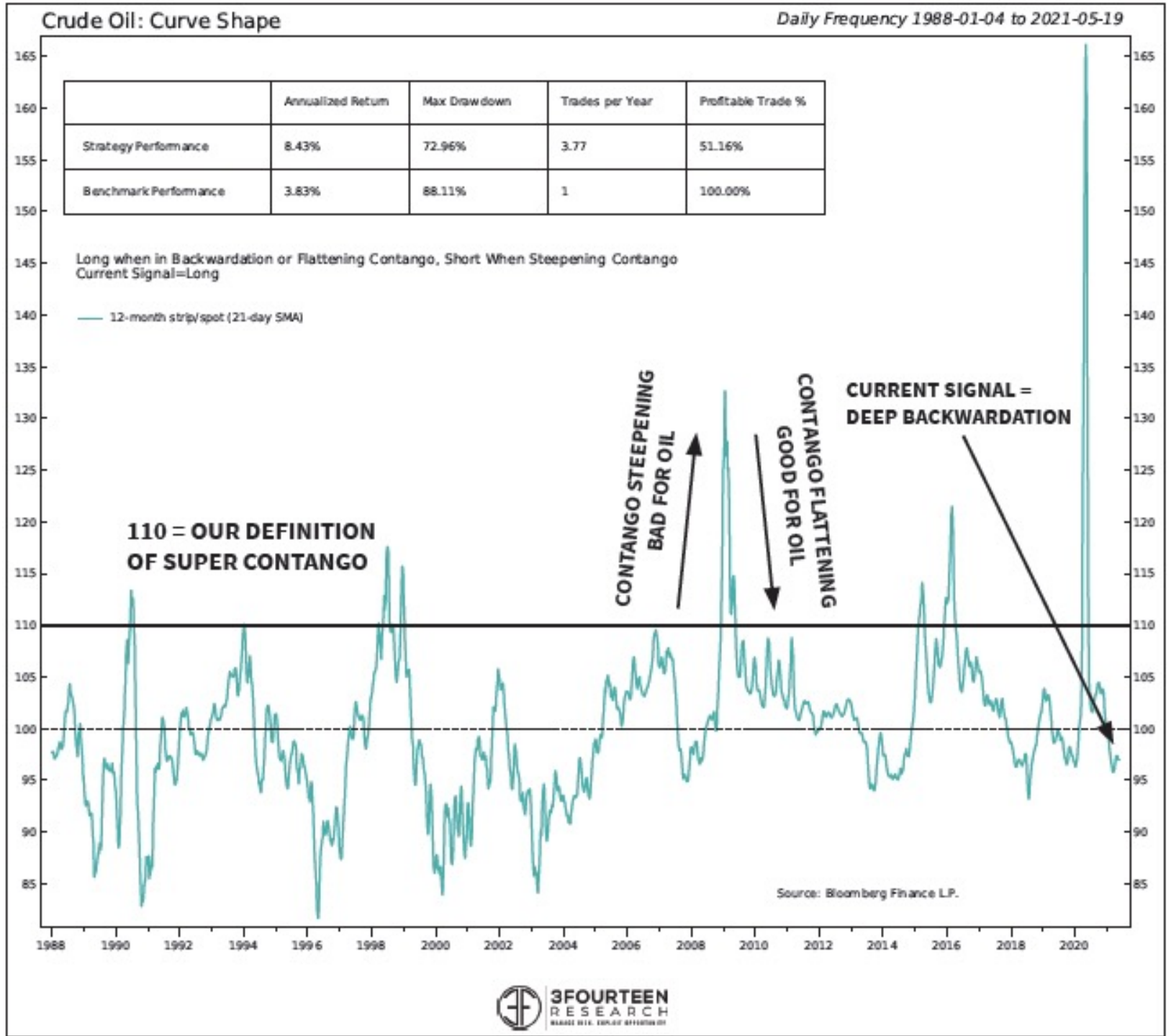
NO CHANGE IN ALLOCATION SINCE LAST REBALANCE

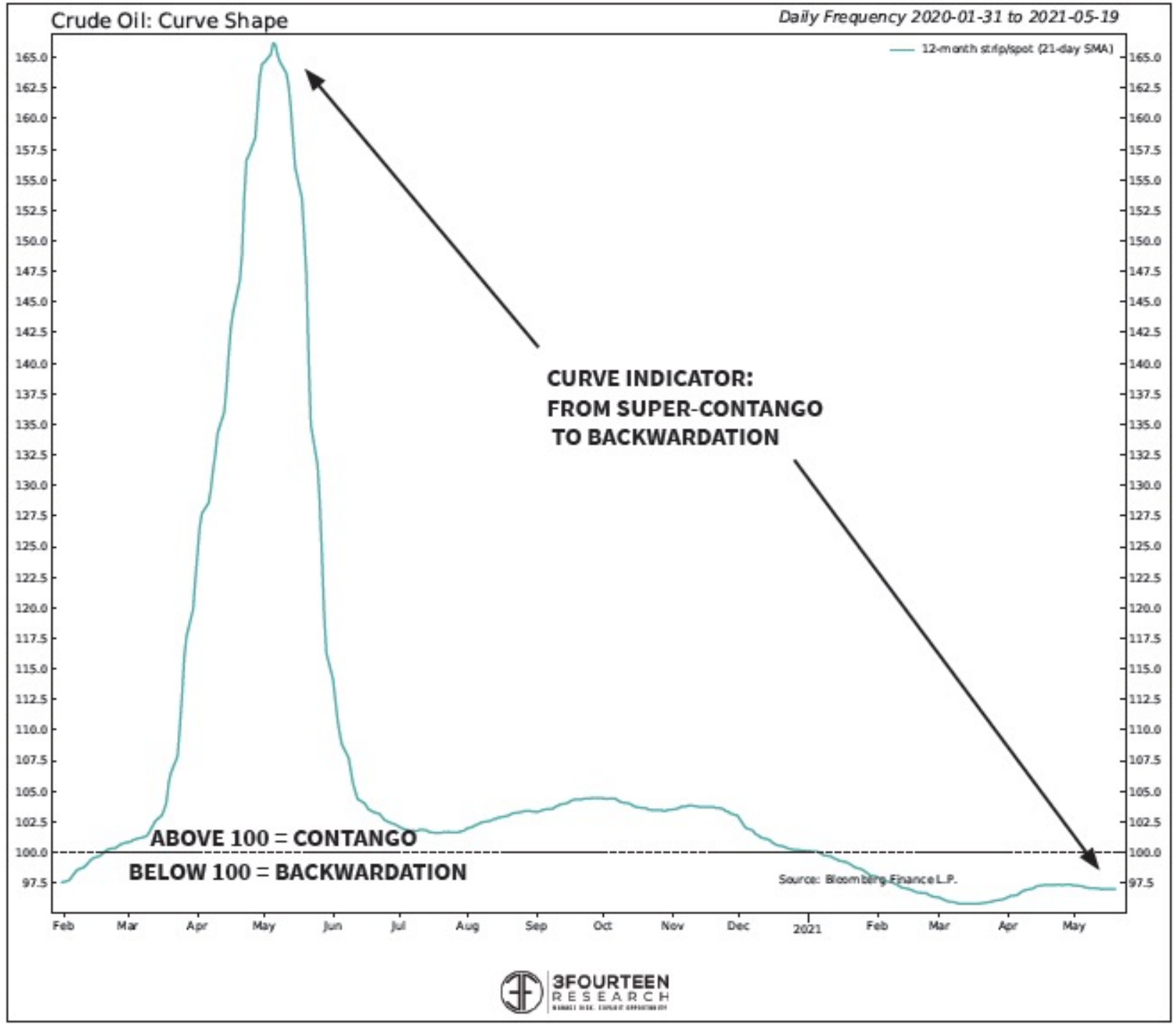
ALLOCATION DECREASE SINCE LAST REBALANCE

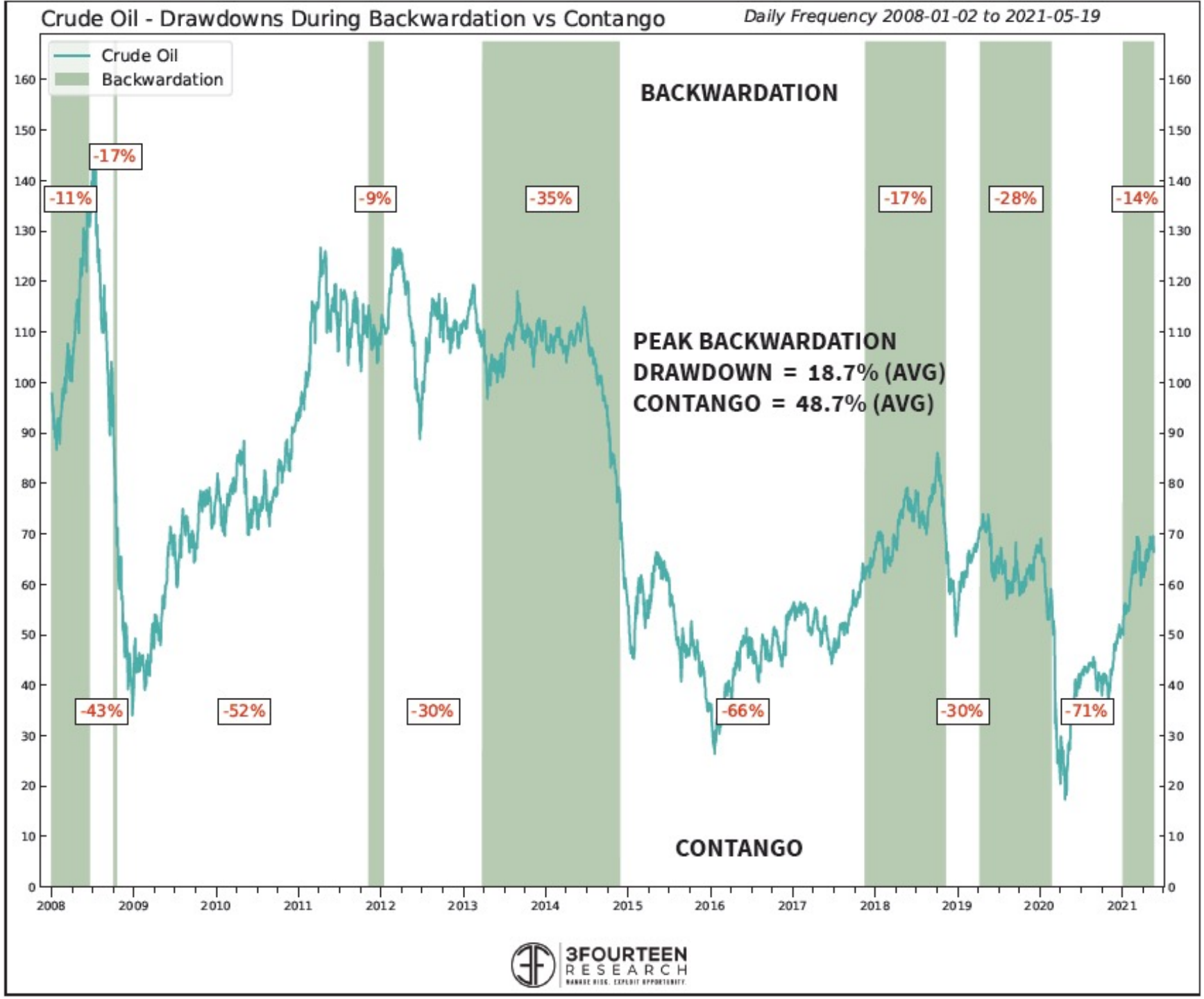

Brent Crude Oil - Technicals
Daily Frequency 2019-01-01 to 2021-05-19
CAN OIL BREAK ABOVE $70?
OPEC MAY GO FOR IT
Brent Crude Oil
10-Day SMA
50-Day SMA
200-Day SMA
2019-01
2019-04
2019-07
2019-10
2020-01
2020-04
2020-07
2020-10
2021-01
2021-04
3FOURTEEN
RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.

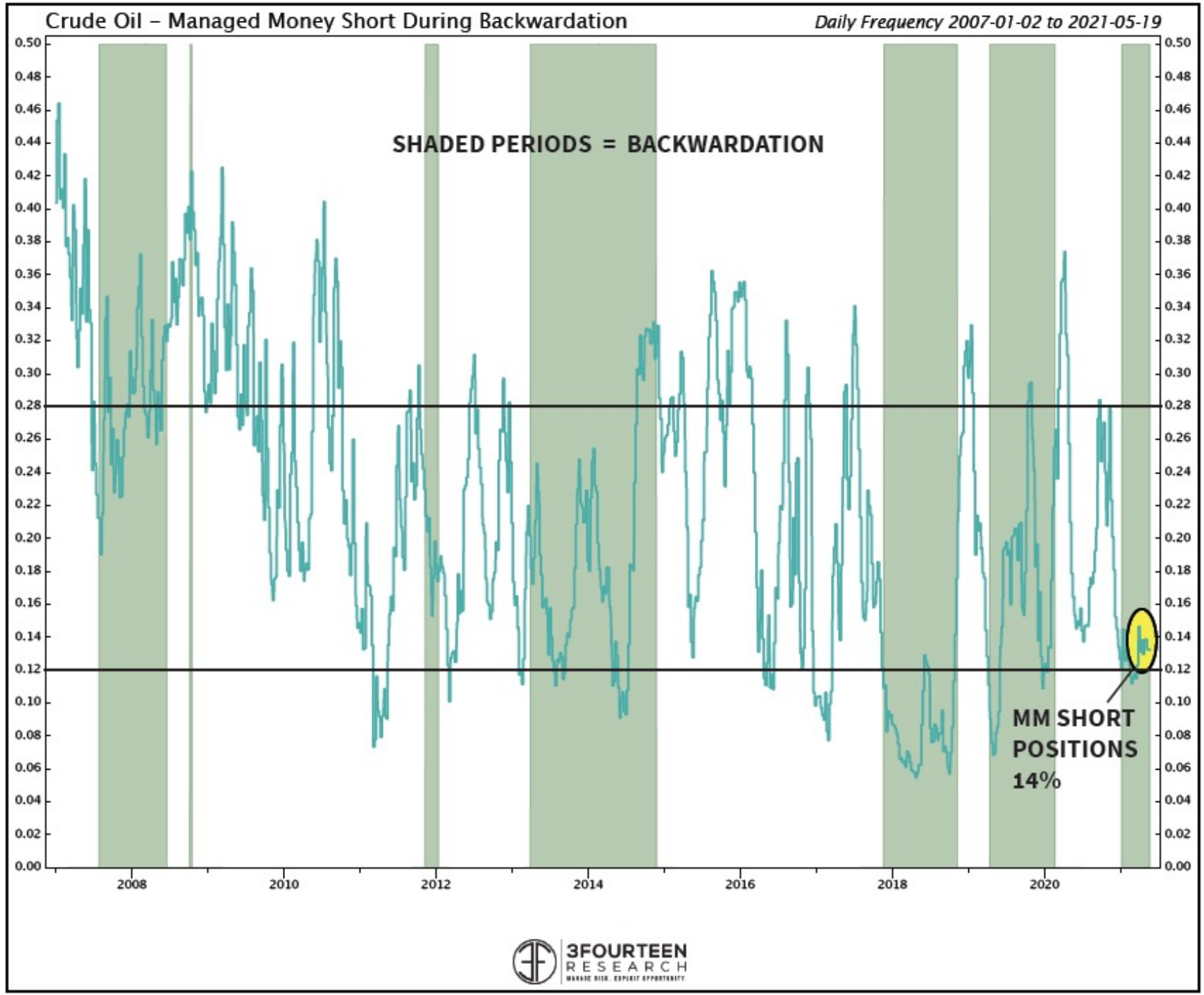

U.S. Oil Production
Weekly Frequency 2019-01-04 to 2021-05-14
U.S. Oil Production (millions bpd)
2 MILLION US BARRELS LOST
DURING PANDEMIC...
NOT COMING BACK ANYTIME SOON
Source: Bloomberg Finance L.P.
13.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
2019
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2020
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2021
Feb
Mar
Apr
May
3FOURTEEN
RESEARCH
MANAGE RISK. EXPLOIT OPPORTUNITY.

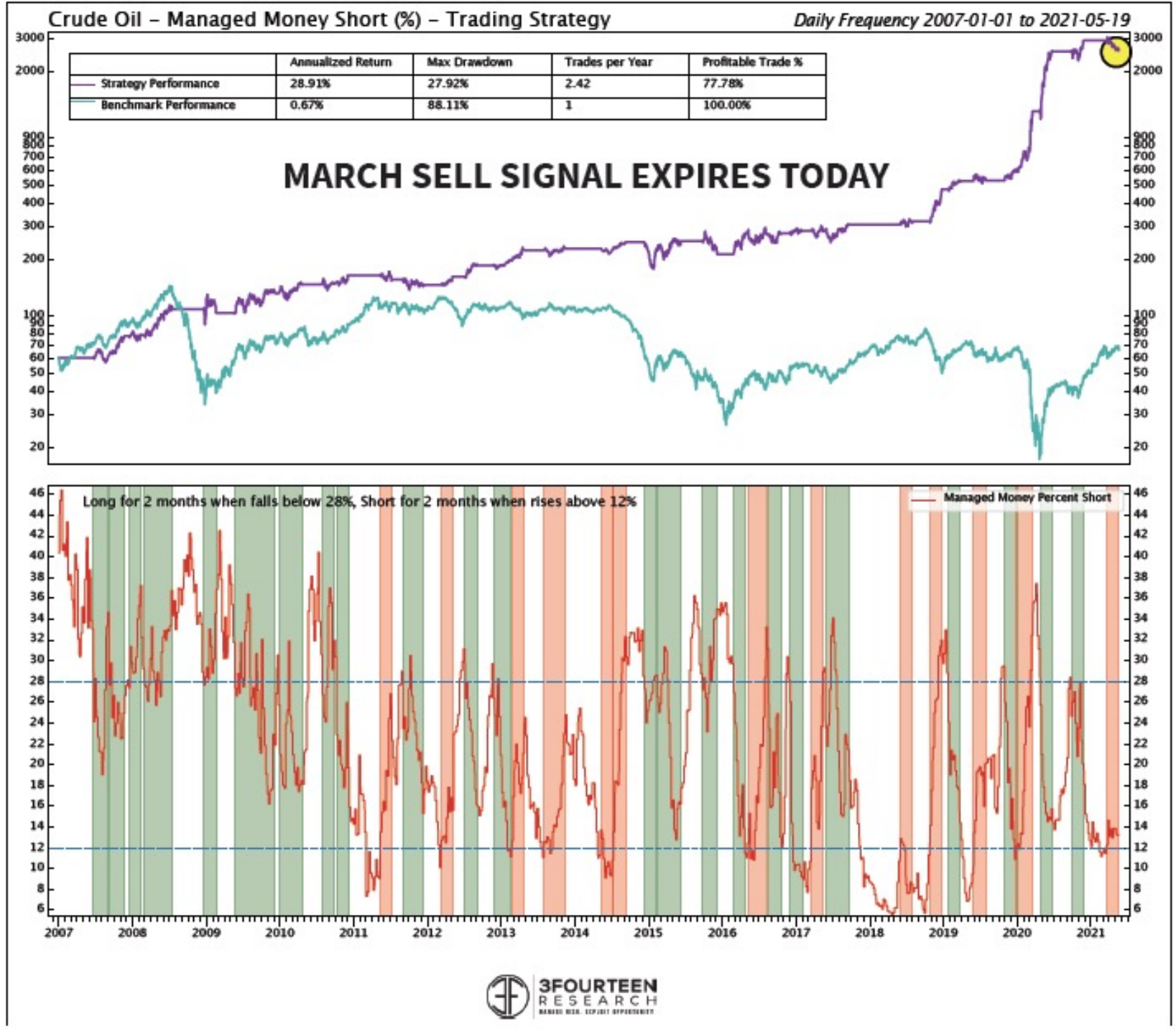

Crude Oil – ML Core Model – Cross Validation Backtest
Daily Frequency 1983-06-14 to 2021-05-18
Annualized Return
Max Drawdown
Trades per Year
Profitable Trade %
Strategy Performance
11.88%
51.39%
3.96
57.79%
Benchmark Performance
2.14%
88.11%
1
100.00%
POSITIONING KEEPING MODEL NEUTRAL...
OPEC IN CONTROL FOR NOW
Live date
Strong Buy
Buy
Neutral
Sell
Strong Sell
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
3FOURTEEN
RESEARCH

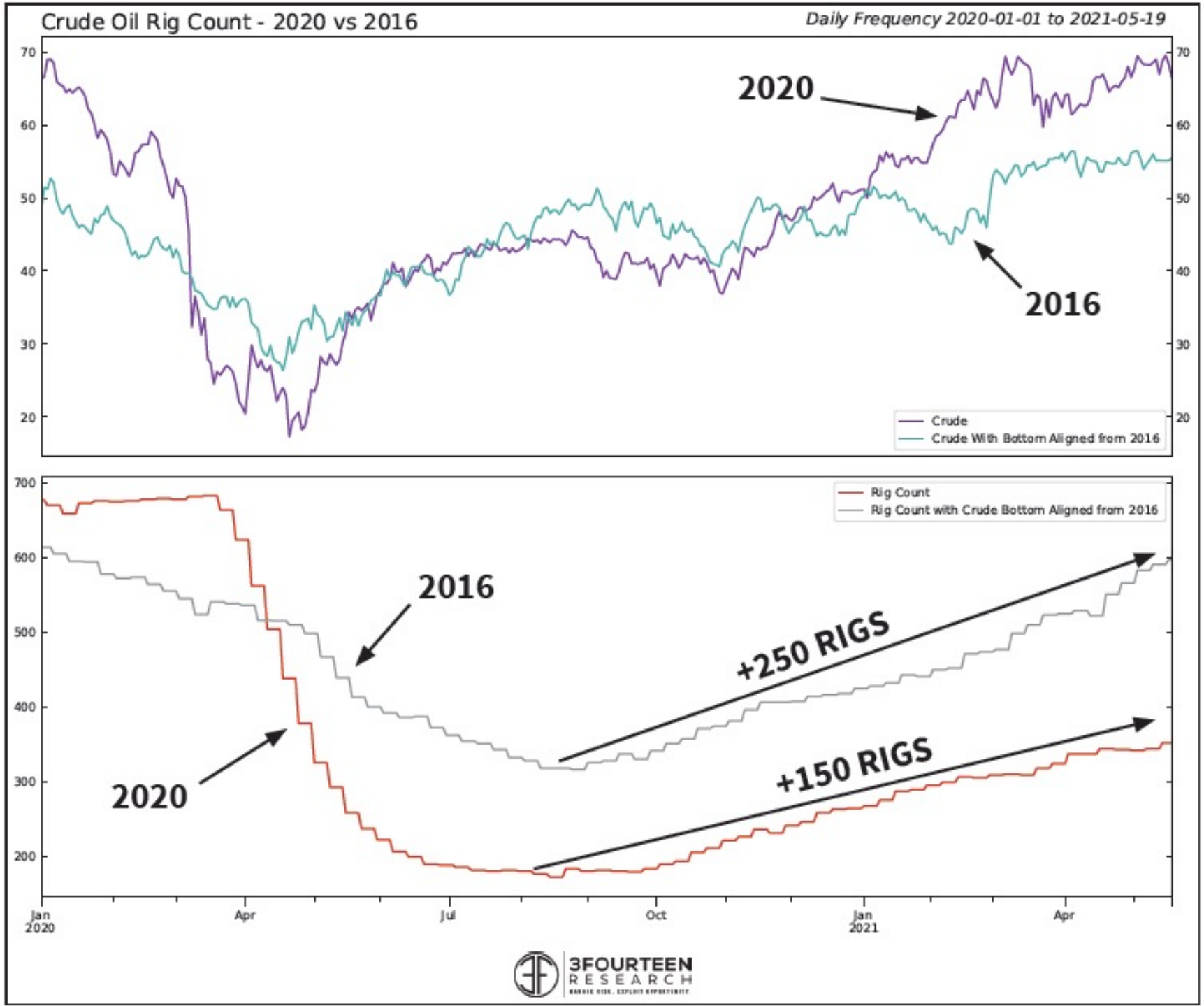

Crude Oil: Curve Shape
Daily Frequency 1988-01-04 to 2021-05-19
Annualized Return
Max Drawdown
Trades per Year
Profitable Trade %
Strategy Performance
8.43%
72.96%
3.77
51.16%
Benchmark Performance
3.83%
88.11%
1
100.00%
Long when in Backwardation or Flattening Contango, Short When Steepening Contango
Current Signal=Long
12-month strip/spot (21-day SMA)
110 = OUR DEFINITION OF SUPER CONTANGO
CONTANGO STEEPENING BAD FOR OIL
CONTANGO FLATTENING GOOD FOR OIL
CURRENT SIGNAL = DEEP BACKWARDATION
Source: Bloomberg Finance LP.
3FOURTEEN RESEARCH

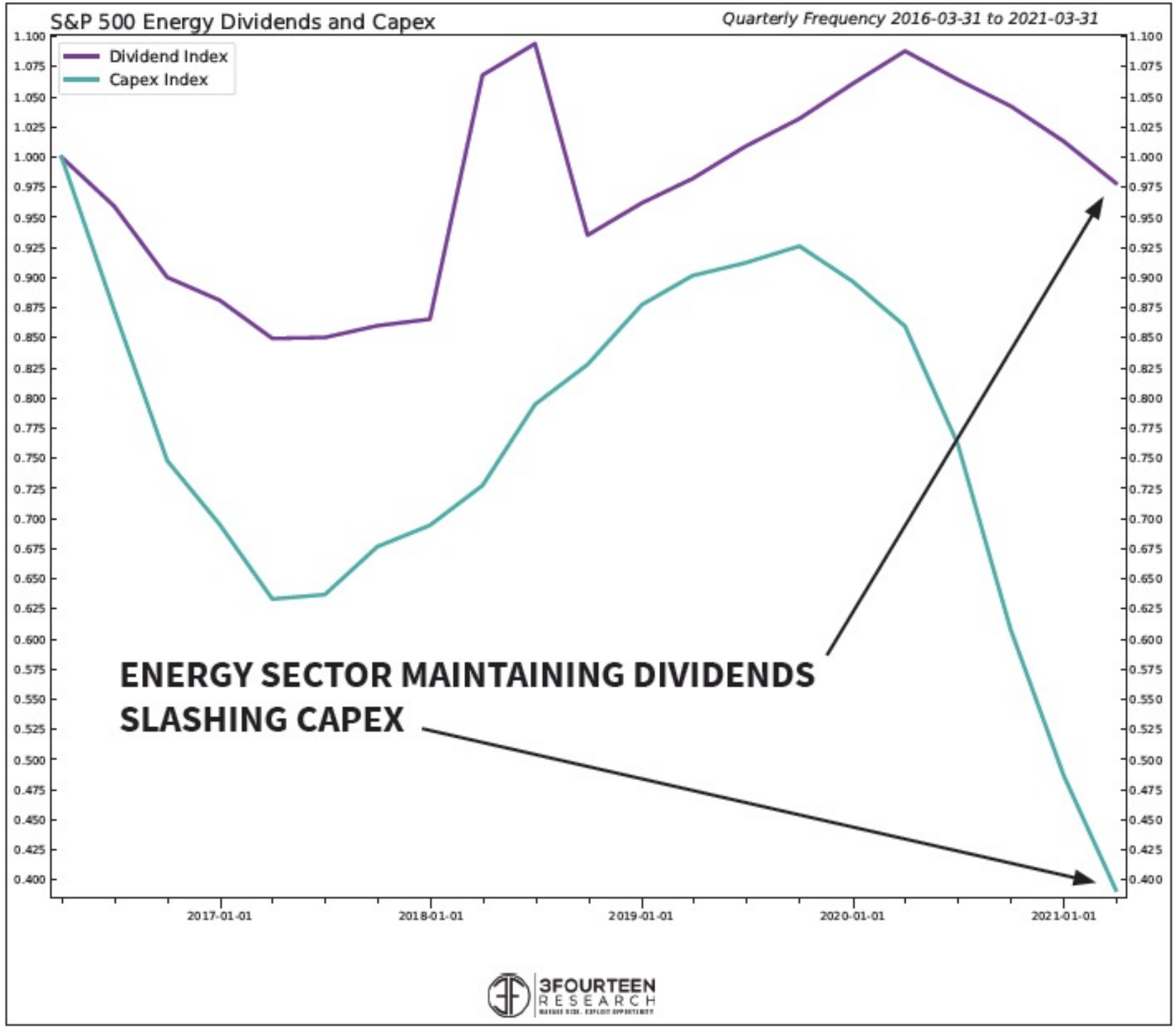

Crude Oil: Curve Shape
Daily Frequency 2020-01-31 to 2021-05-19
12-month strip/spot (21-day SMA)
CURVE INDICATOR:
FROM SUPER-CONTANGO
TO BACKWARDATION
ABOVE 100 = CONTANGO
BELOW 100 = BACKWARDATION
Source: Bloomberg Finance L.P.
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2021
Feb
Mar
Apr
May
3FOURTEEN
RESEARCH

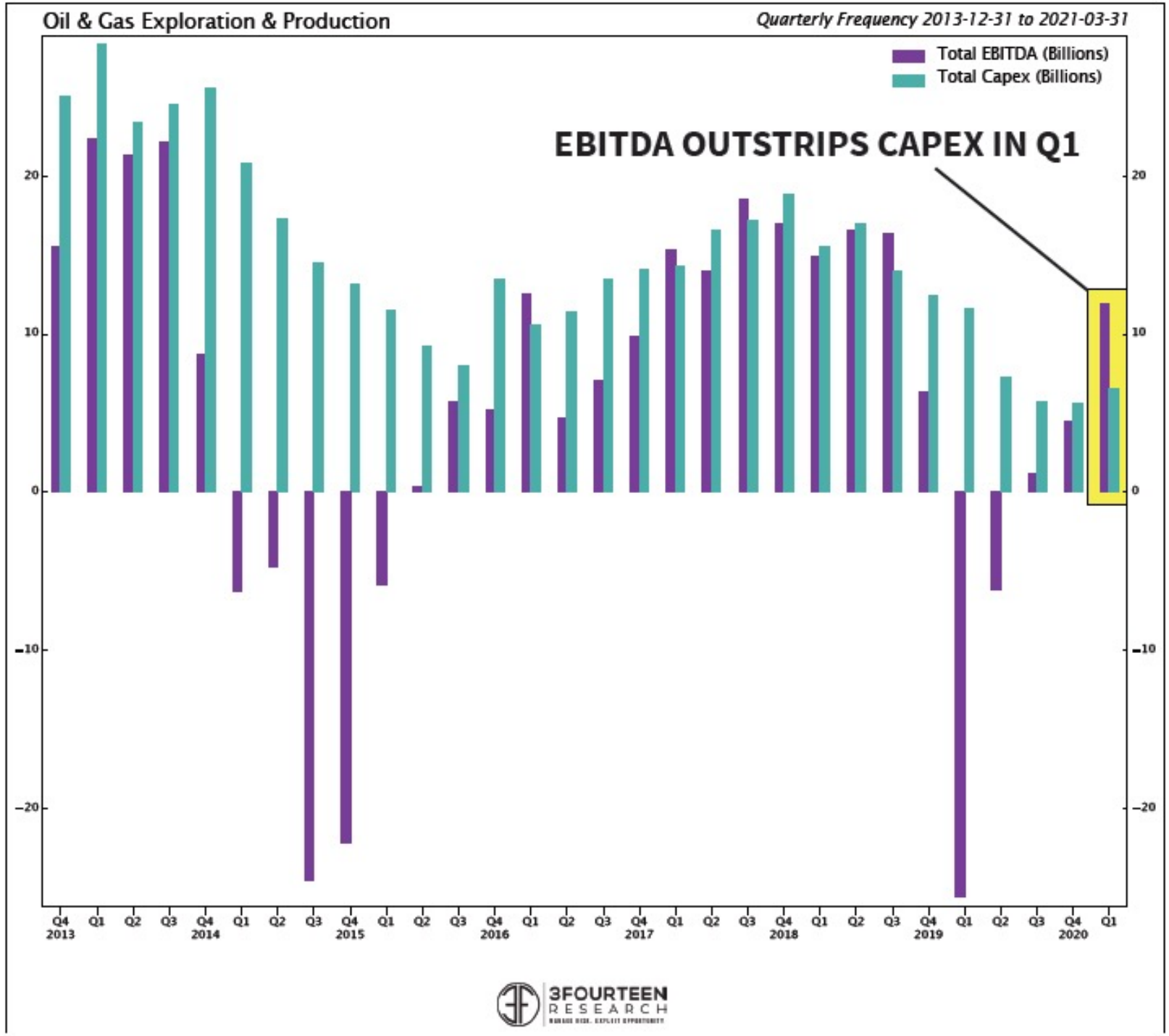

Crude Oil - Drawdowns During Backwardation vs Contango
Daily Frequency 2008-01-02 to 2021-05-19
Crude Oil
Backwardation
BACKWARDATION
-17%
-11%
-9%
-35%
-17%
-28%
-14%
PEAK BACKWARDATION
DRAWDOWN = 18.7% (AVG)
CONTANGO = 48.7% (AVG)
-43%
-52%
-30%
-66%
-30%
-71%
CONTANGO
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
3FOURTEEN
RESEARCH

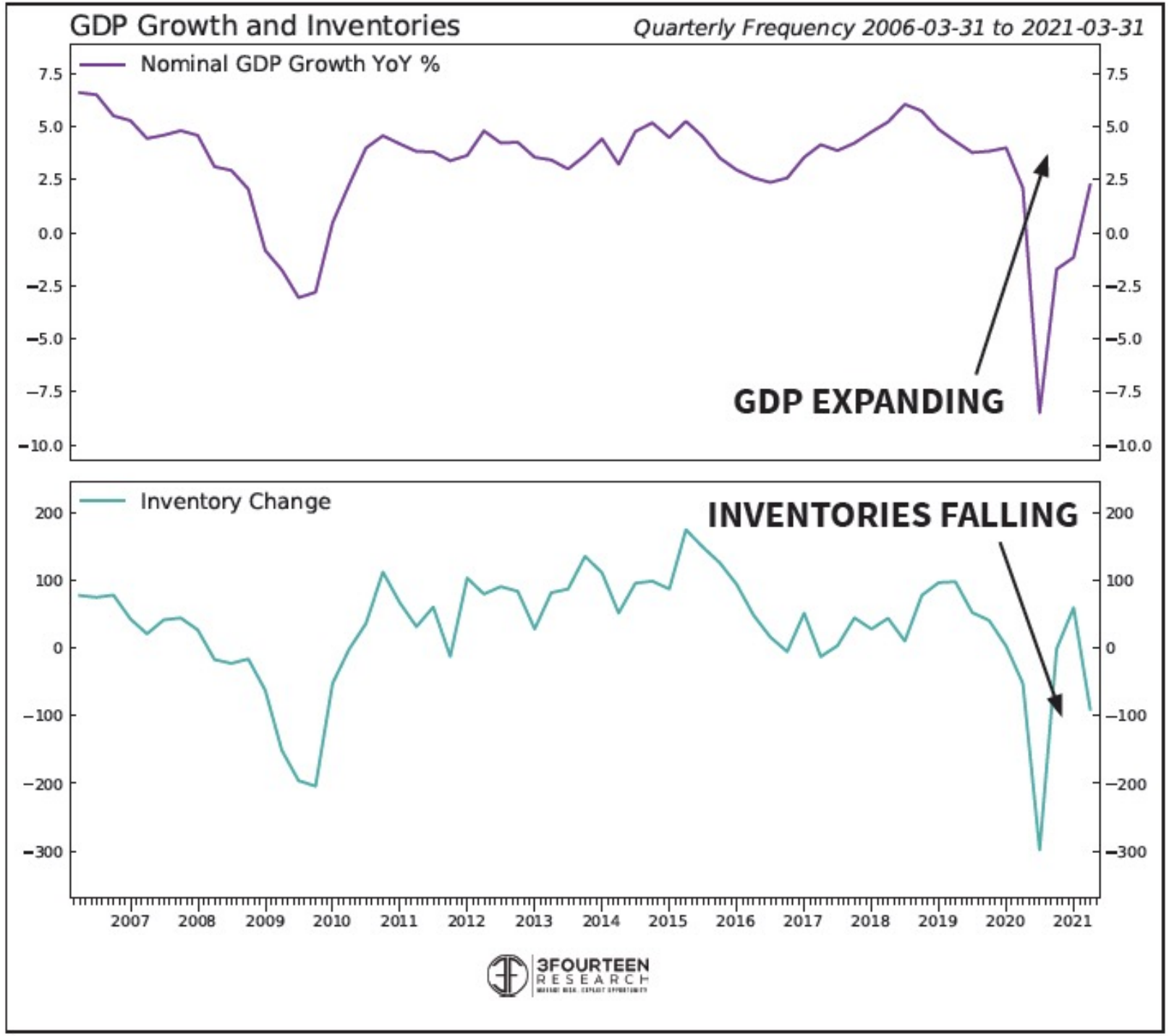

Crude Oil – Managed Money Short During Backwardation
Daily Frequency 2007-01-02 to 2021-05-19
SHADED PERIODS = BACKWARDATION
MM SHORT POSITIONS 14%
0.50
0.48
0.46
0.44
0.42
0.40
0.38
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
2008
2010
2012
2014
2016
2018
2020
3FOURTEEN RESEARCH

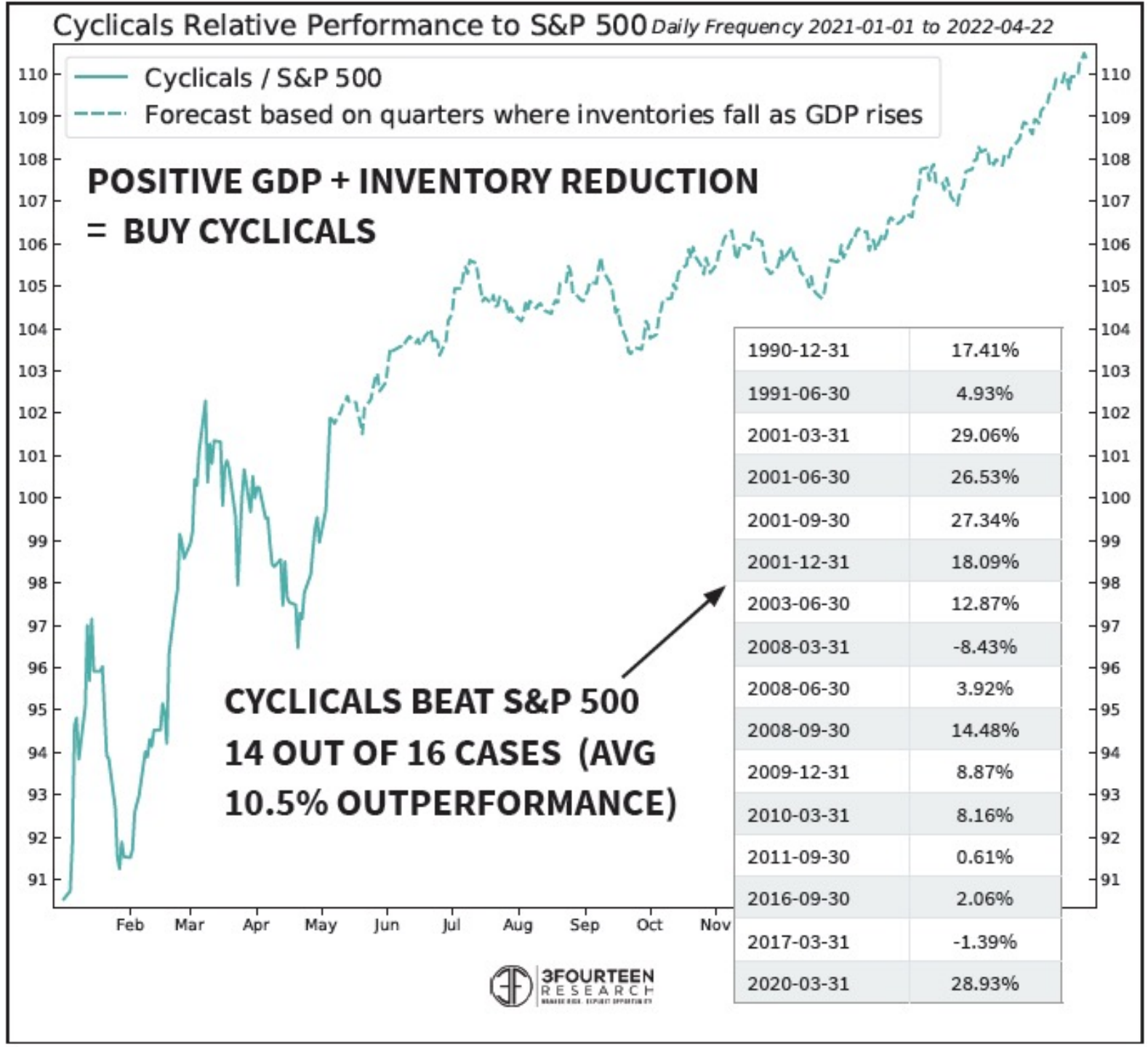

Crude Oil – Managed Money Short (%) – Trading Strategy
Daily Frequency 2007-01-01 to 2021-05-19
Annualized Return
Max Drawdown
Trades per Year
Profitable Trade %
Strategy Performance
28.91%
27.92%
2.42
77.78%
Benchmark Performance
0.67%
88.11%
1
100.00%
MARCH SELL SIGNAL EXPIRES TODAY
Long for 2 months when falls below 28%, Short for 2 months when rises above 12%
Managed Money Percent Short
3FOURTEEN
RESEARCH


Crude Oil Rig Count - 2020 vs 2016
Daily Frequency 2020-01-01 to 2021-05-19
2020
2016
Crude
Crude With Bottom Aligned from 2016
Rig Count
Rig Count with Crude Bottom Aligned from 2016
2016
2020
+250 RIGS
+150 RIGS
Jan 2020
Apr
Jul
Oct
Jan 2021
Apr
3FOURTEEN RESEARCH


S&P 500 Energy Dividends and Capex
Quarterly Frequency 2016-03-31 to 2021-03-31
Dividend Index
Capex Index
ENERGY SECTOR MAINTAINING DIVIDENDS
SLASHING CAPEX
2017-01-01
2018-01-01
2019-01-01
2020-01-01
2021-01-01
3FOURTEEN
RESEARCH


Oil & Gas Exploration & Production
Quarterly Frequency 2013-12-31 to 2021-03-31
Total EBITDA (Billions)
Total Capex (Billions)
EBITDA OUTSTRIPS CAPEX IN Q1
20
10
0
−10
−20
Q4 2013
Q1
Q2
Q3
Q4 2014
Q1
Q2
Q3
Q4 2015
Q1
Q2
Q3
Q4 2016
Q1
Q2
Q3
Q4 2017
Q1
Q2
Q3
Q4 2018
Q1
Q2
Q3
Q4 2019
Q1
Q2
Q3
Q4 2020
Q1
3FOURTEEN RESEARCH


GDP Growth and Inventories
Quarterly Frequency 2006-03-31 to 2021-03-31
Nominal GDP Growth YoY %
GDP EXPANDING
Inventory Change
INVENTORIES FALLING
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
3FOURTEEN RESEARCH



1990-12-31	17.41%
1991-06-30	4.93%
2001-03-31	29.06%
2001-06-30	26.53%
2001-09-30	27.34%
2001-12-31	18.09%
2003-06-30	12.87%
2008-03-31	-8.43%
2008-06-30	3.92%
2008-09-30	14.48%
2009-12-31	8.87%
2010-03-31	8.16%
2011-09-30	0.61%
2016-09-30	2.06%
2017-03-31	-1.39%
2020-03-31	28.93%