



COVID-19, the Economy, and the Capital Markets

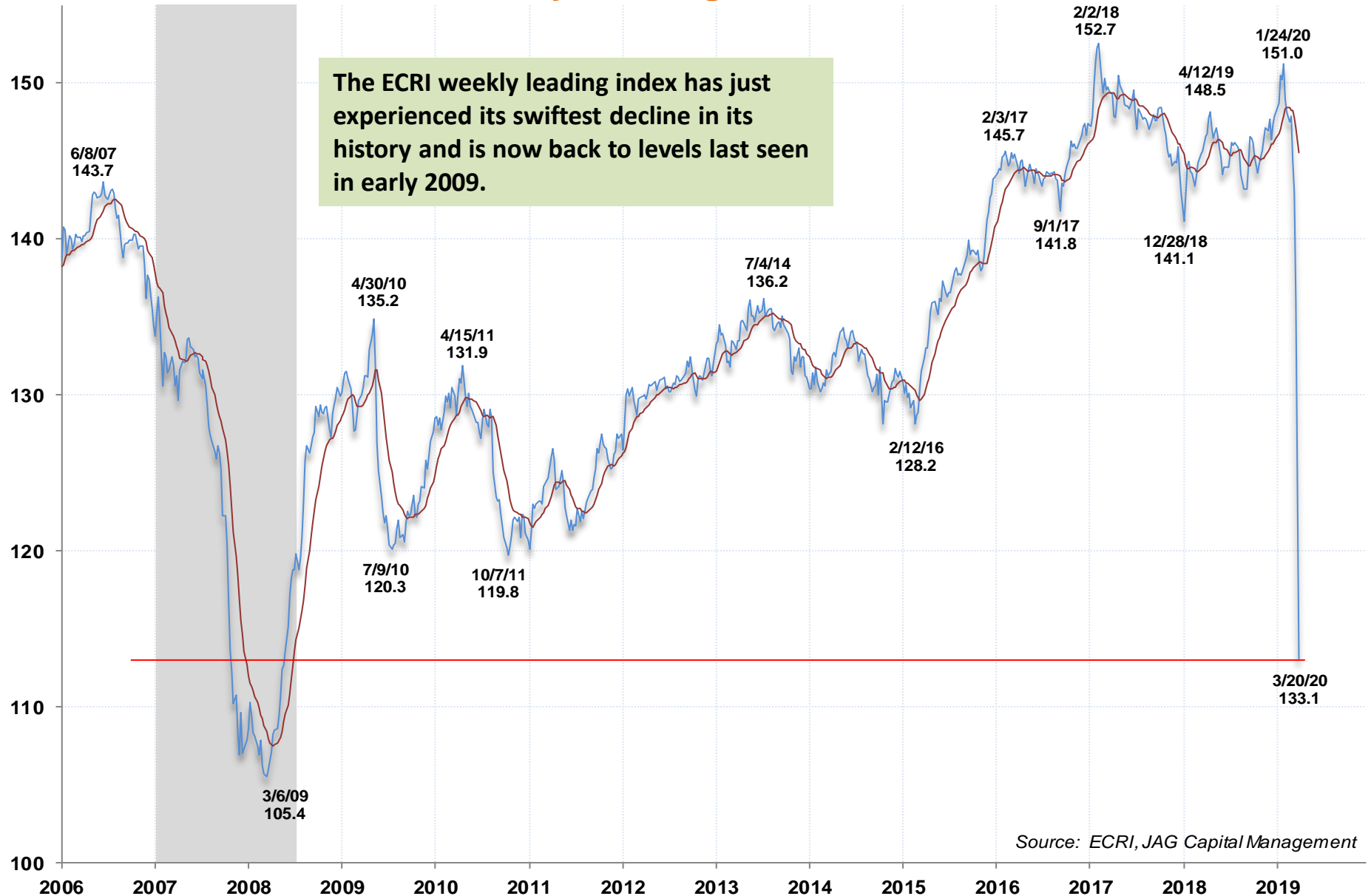
Observations & Insights

April 2020

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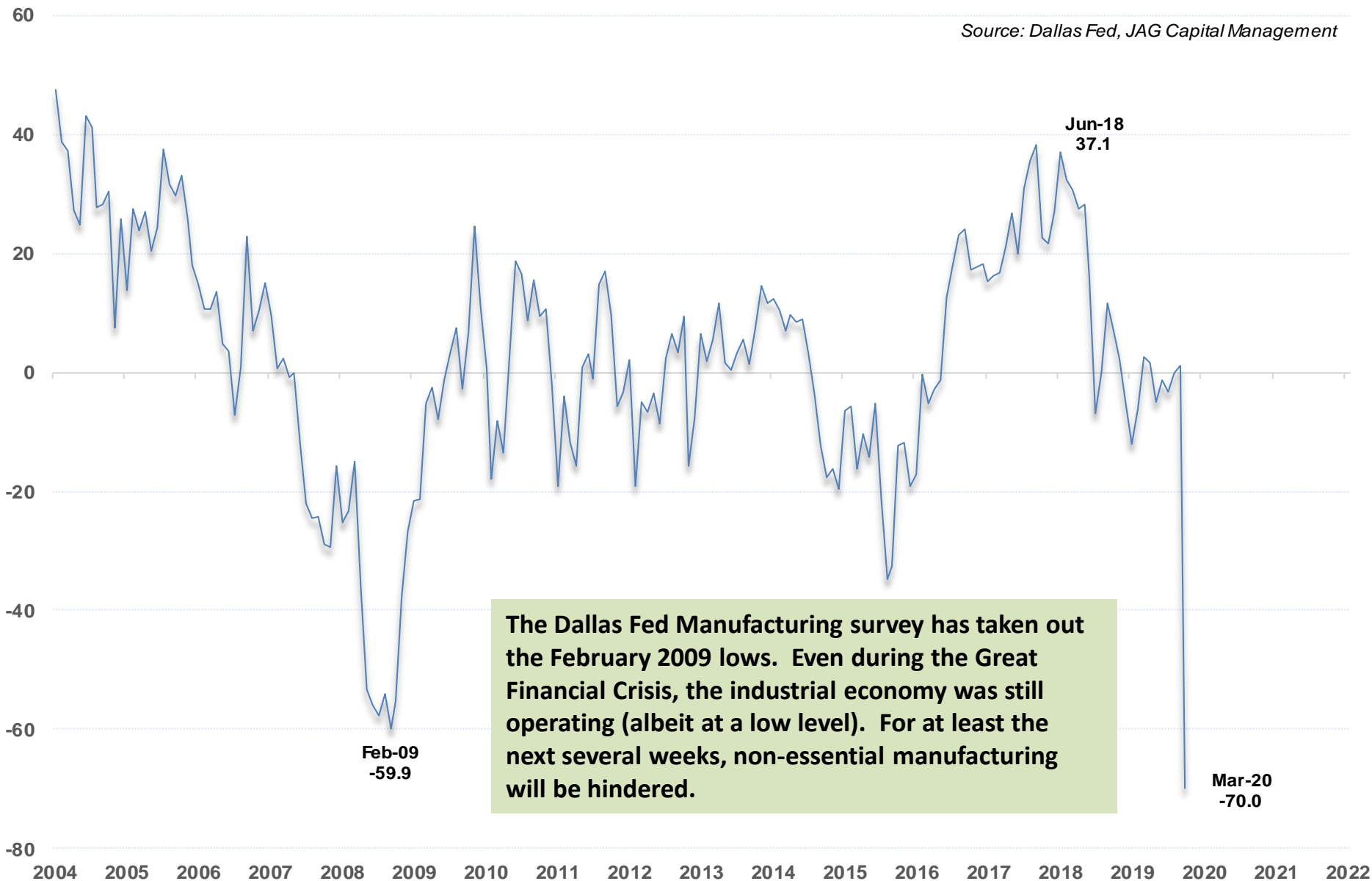
Macro: A biological menace has caused a global economic lockdown

ECRI Weekly Leading Index: Since 2006



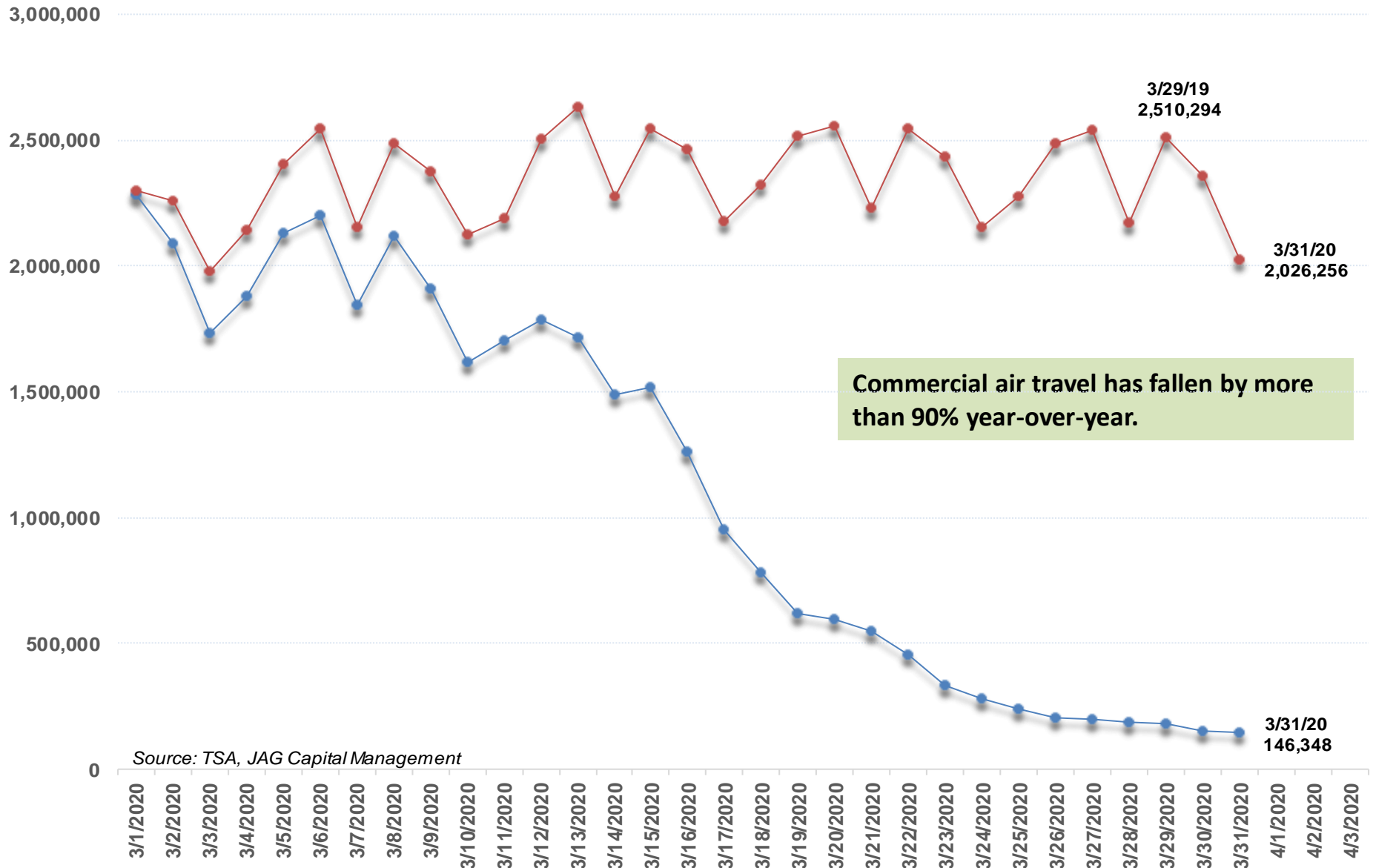
Dallas Fed Manufacturing Survey

Source: Dallas Fed, JAG Capital Management



TSA Airline Passenger Throughput Mar-2019 (red line) vs. Mar-2020 (blue line)

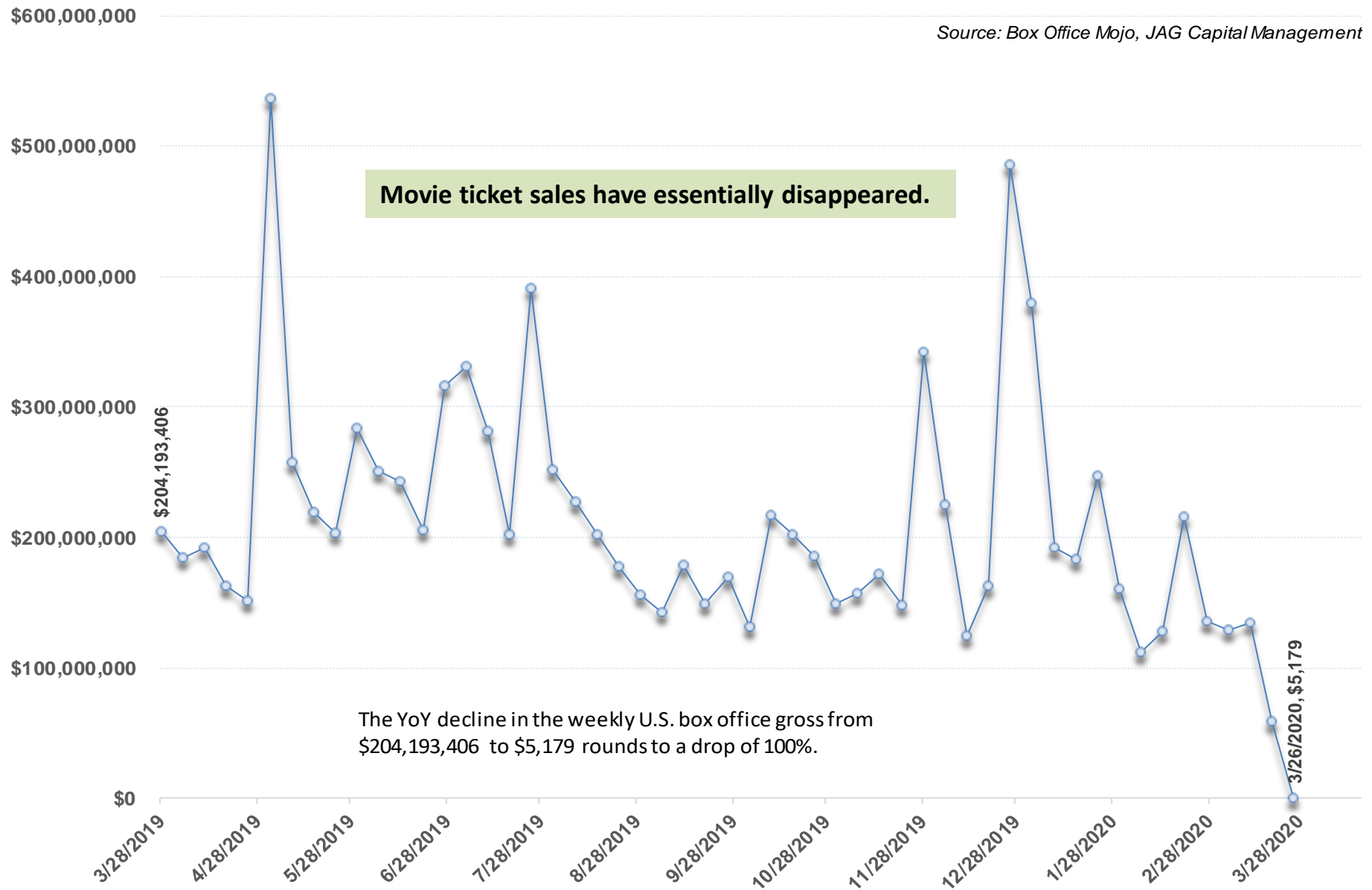
(blue line)



Commercial air travel has fallen by more than 90% year-over-year.

Weekly U.S. Box Office Gross

Source: Box Office Mojo, JAG Capital Management



Weekly Claims for Unemployment Insurance

Source: Dept. of Labor, JAG Capital Management, h/t Robin Wigglesworth for annotations

Label key:

Top Line(s) - Event

Line 2 - Date

Line 3 - Initial claims

Line 4 - Covered employment

Line 5 - Initial claims / Covered employment

CoVid-19
3/27/20
145,230,691
6,648,000
4.58%

Initial jobless claims jumped for the second week in a row to unprecedented levels. Employers have been forced to lay off or furlough employees to conserve cash flow during the current "lock down" in the economy.

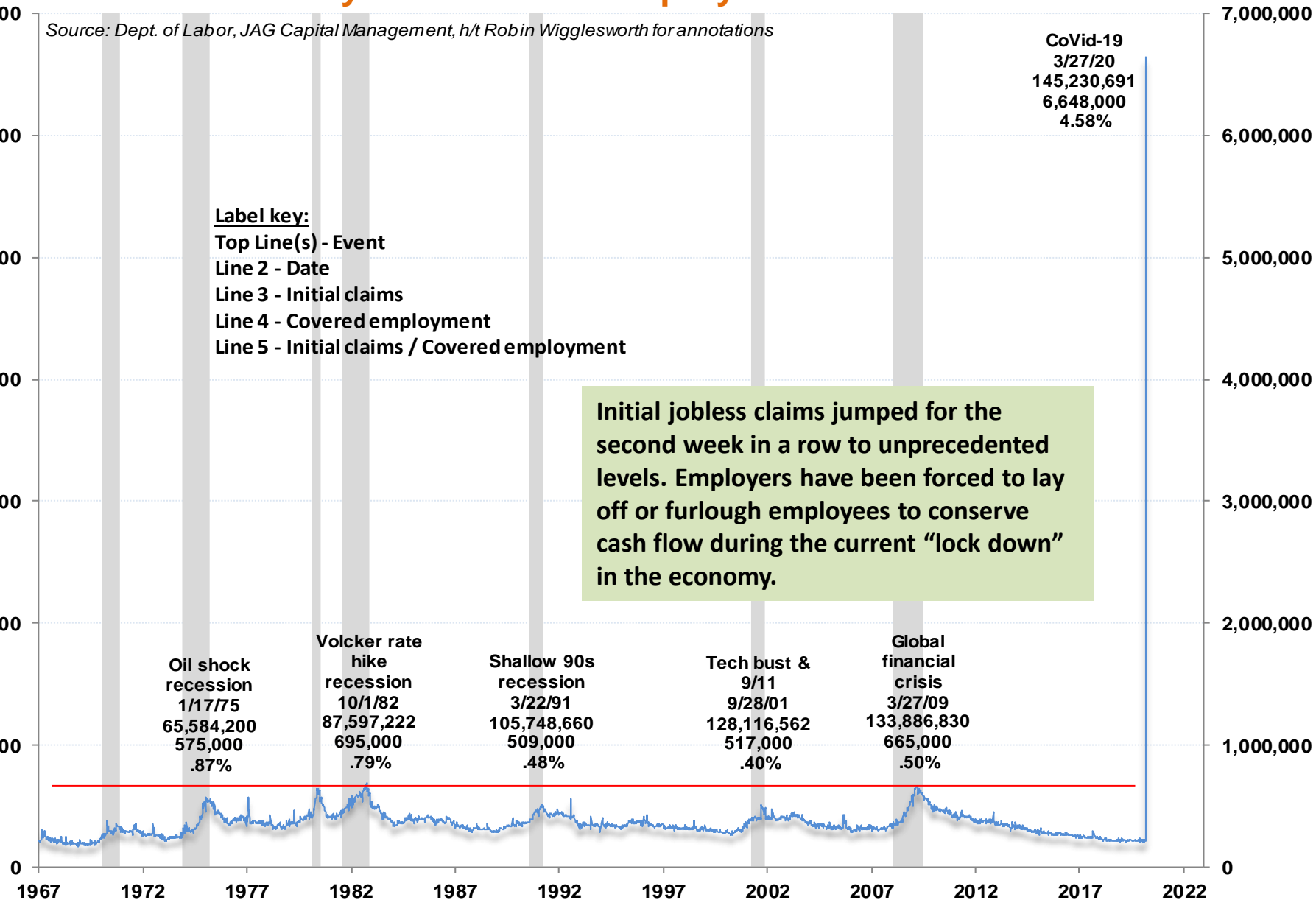
**Oil shock
recession**
1/17/75
65,584,200
575,000
.87%

**Volcker rate
hike
recession**
10/1/82
87,597,222
695,000
.79%

**Shallow 90s
recession**
3/22/91
105,748,660
509,000
.48%

**Tech bust &
9/11**
9/28/01
128,116,562
517,000
.40%

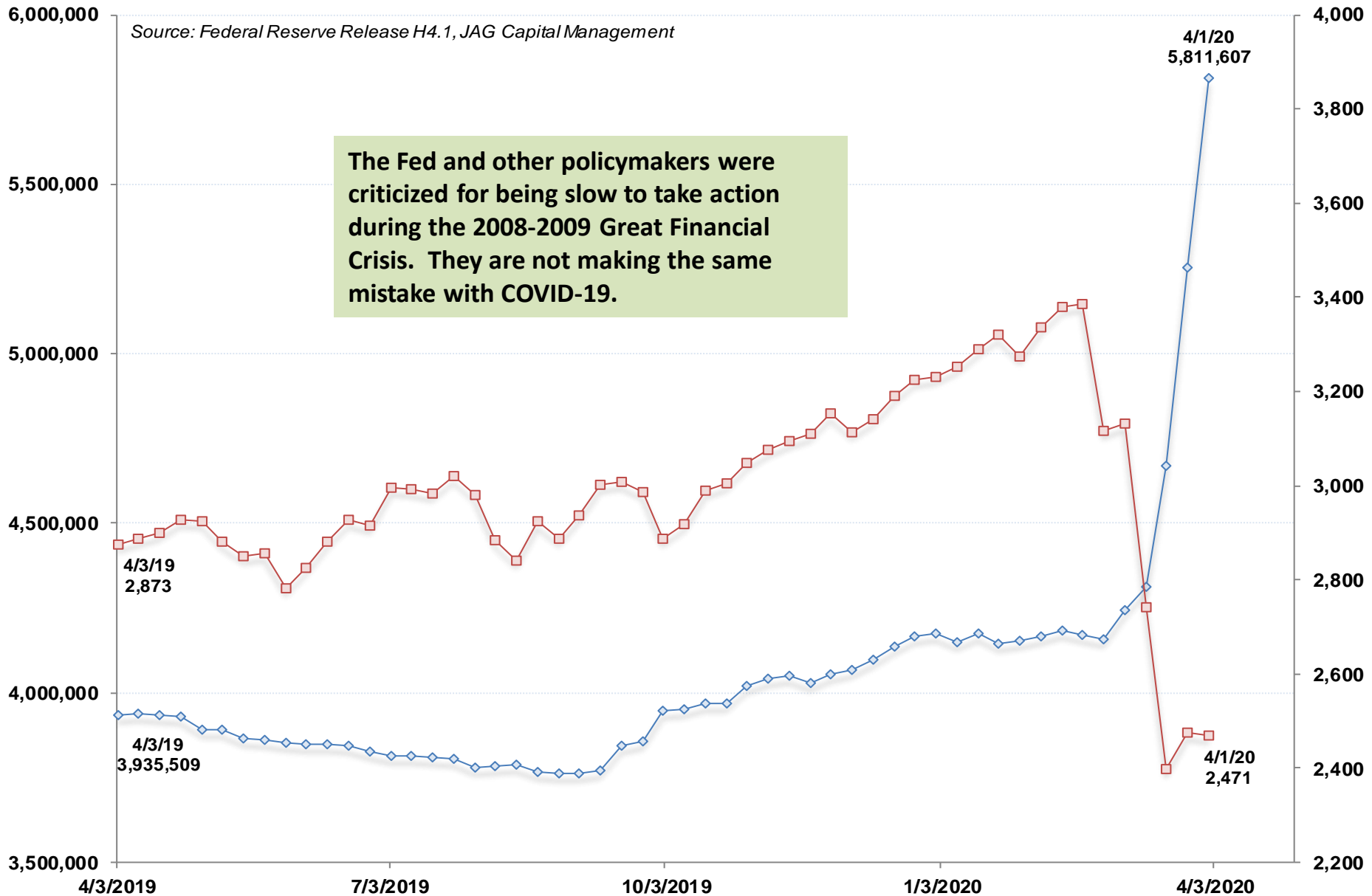
**Global
financial
crisis**
3/27/09
133,886,830
665,000
.50%



Total Fed Assets (blue line, ls) vs. S&P 500 (red line, rs)

Source: Federal Reserve Release H4.1, JAG Capital Management

The Fed and other policymakers were criticized for being slow to take action during the 2008-2009 Great Financial Crisis. They are not making the same mistake with COVID-19.

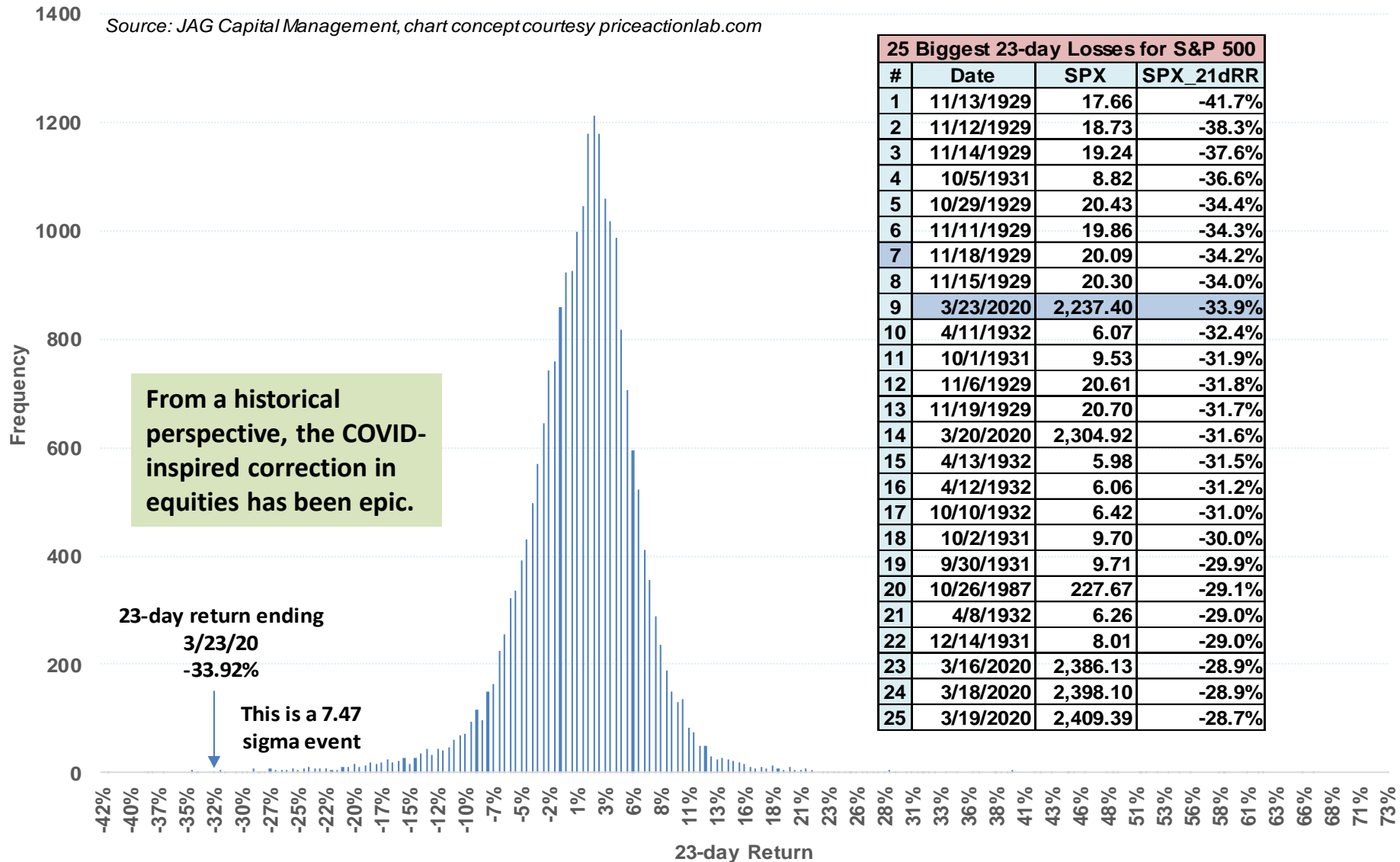


Capital Markets: Historic amounts of volatility

Frequency Distribution of 23-day Rolling Returns for the S&P 500 1/2/1928 - 4/1/2020

1400

Source: JAG Capital Management, chart concept courtesy priceactionlab.com



| # | Date | SPX | SPX_21dRR |
|----|------------|----------|-----------|
| 1 | 11/13/1929 | 17.66 | -41.7% |
| 2 | 11/12/1929 | 18.73 | -38.3% |
| 3 | 11/14/1929 | 19.24 | -37.6% |
| 4 | 10/5/1931 | 8.82 | -36.6% |
| 5 | 10/29/1929 | 20.43 | -34.4% |
| 6 | 11/11/1929 | 19.86 | -34.3% |
| 7 | 11/18/1929 | 20.09 | -34.2% |
| 8 | 11/15/1929 | 20.30 | -34.0% |
| 9 | 3/23/2020 | 2,237.40 | -33.9% |
| 10 | 4/11/1932 | 6.07 | -32.4% |
| 11 | 10/1/1931 | 9.53 | -31.9% |
| 12 | 11/6/1929 | 20.61 | -31.8% |
| 13 | 11/19/1929 | 20.70 | -31.7% |
| 14 | 3/20/2020 | 2,304.92 | -31.6% |
| 15 | 4/13/1932 | 5.98 | -31.5% |
| 16 | 4/12/1932 | 6.06 | -31.2% |
| 17 | 10/10/1932 | 6.42 | -31.0% |
| 18 | 10/2/1931 | 9.70 | -30.0% |
| 19 | 9/30/1931 | 9.71 | -29.9% |
| 20 | 10/26/1987 | 227.67 | -29.1% |
| 21 | 4/8/1932 | 6.26 | -29.0% |
| 22 | 12/14/1931 | 8.01 | -29.0% |
| 23 | 3/16/2020 | 2,386.13 | -28.9% |
| 24 | 3/18/2020 | 2,398.10 | -28.9% |
| 25 | 3/19/2020 | 2,409.39 | -28.7% |

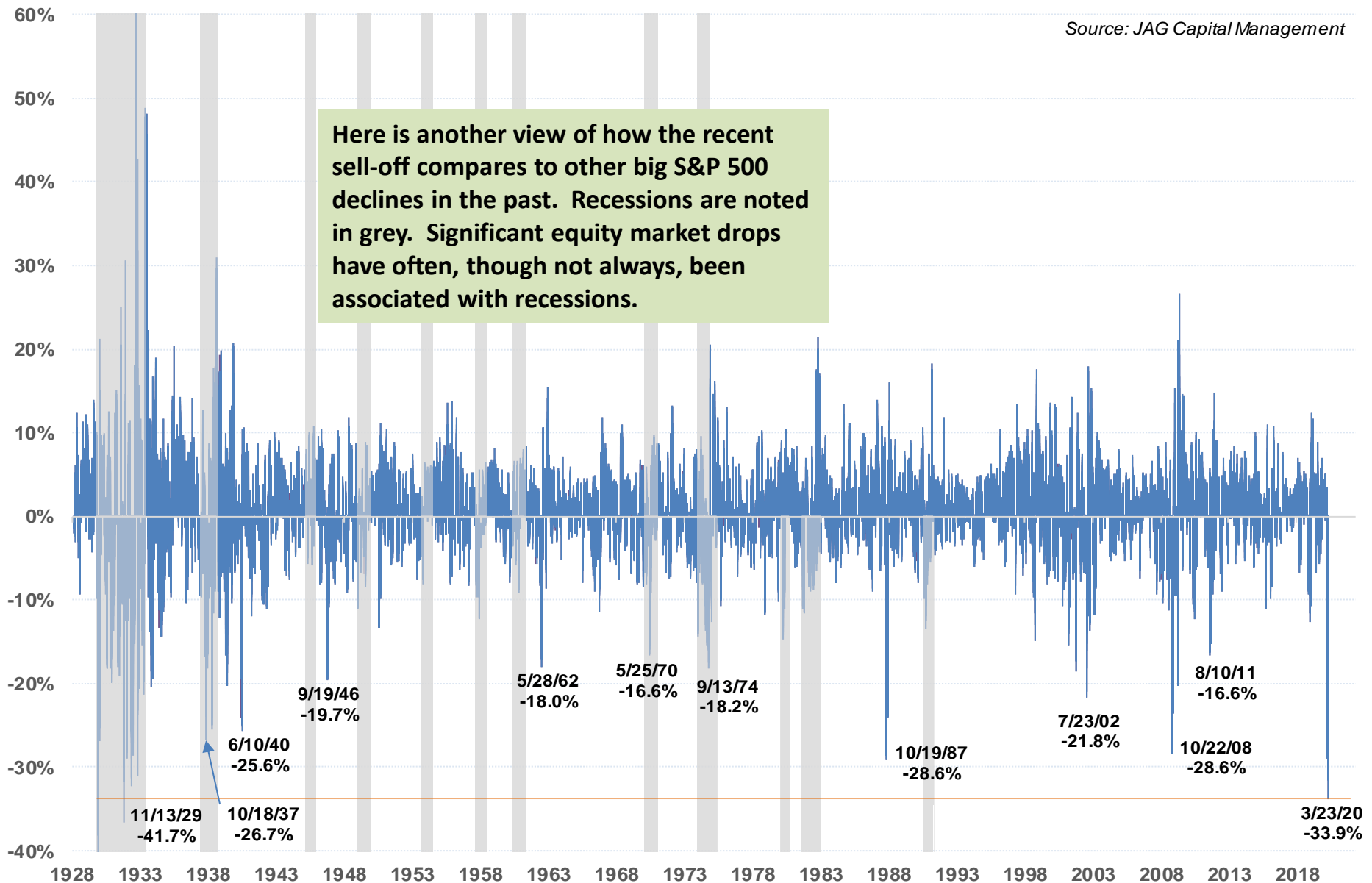
10 Year Trsy Constant Maturity Yield, Weekly Avg of Daily Yield



S&P 500 Rolling 23-day Returns

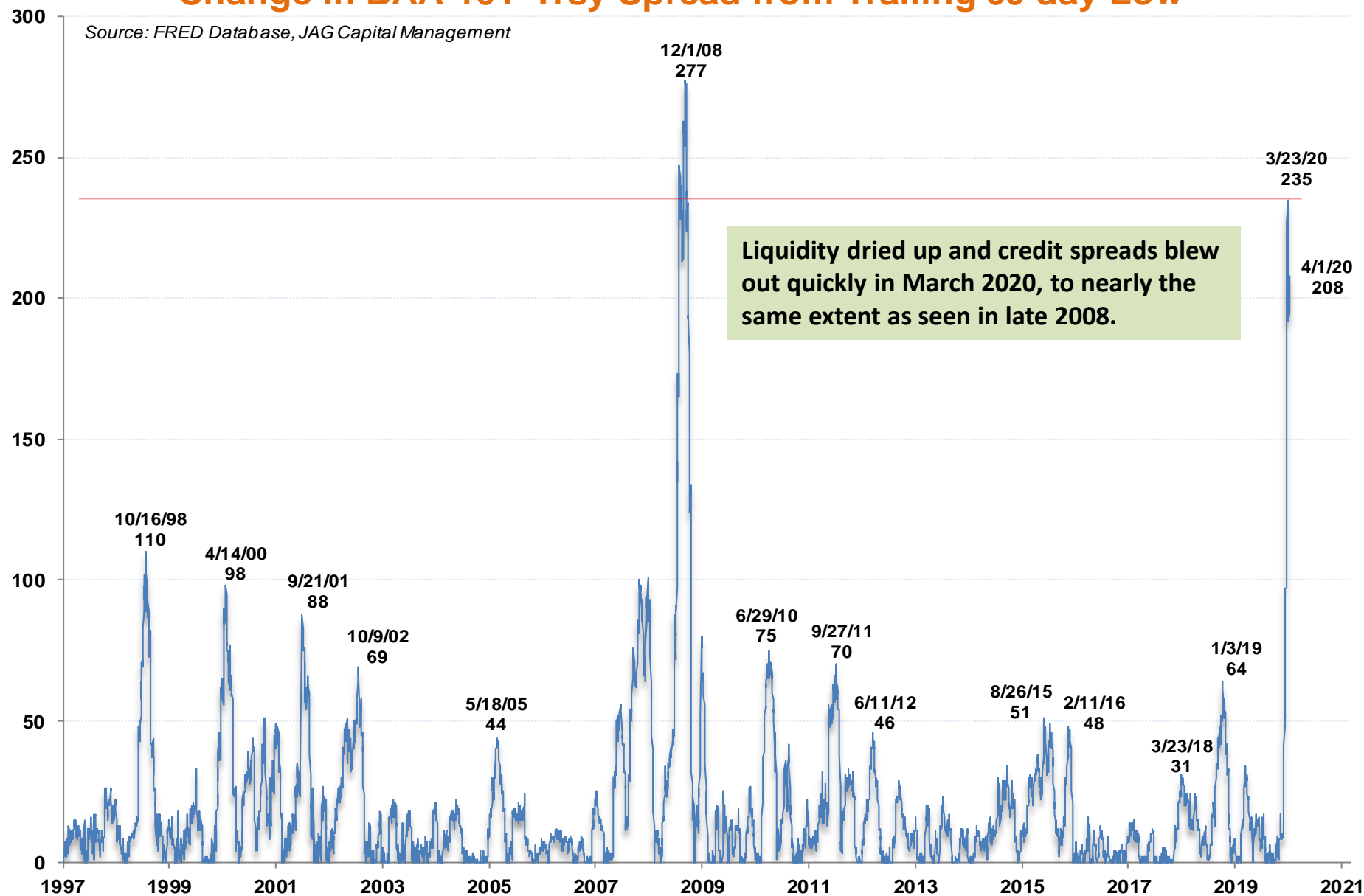
Source: JAG Capital Management

Here is another view of how the recent sell-off compares to other big S&P 500 declines in the past. Recessions are noted in grey. Significant equity market drops have often, though not always, been associated with recessions.



Change in BAA-10Y Trsy Spread from Trailing 60 day Low

Source: FRED Database, JAG Capital Management



BAA Rated Corporate Bond Yields vs. 10 Year Treasury Yields

Source: Federal Reserve H-15 Release, JAG Capital Management



BAA Rated Corporate Bond Yields / 10 Yr Treasury Yields

Source: Federal Reserve H-15 Release, JAG Capital Management

Here we have expressed the ratio of BAA bond yields to 10 Year Treasury yields. This ratio is now >7x, meaning that BAA-rated bonds offer more than seven times the yield of Treasuries. On a relative basis, BAA yields have never been this high compared to Treasury yields.

BAA Yield = 4.69
10y Trsy = .62
Ratio = 7.56

4/1/20
7.56



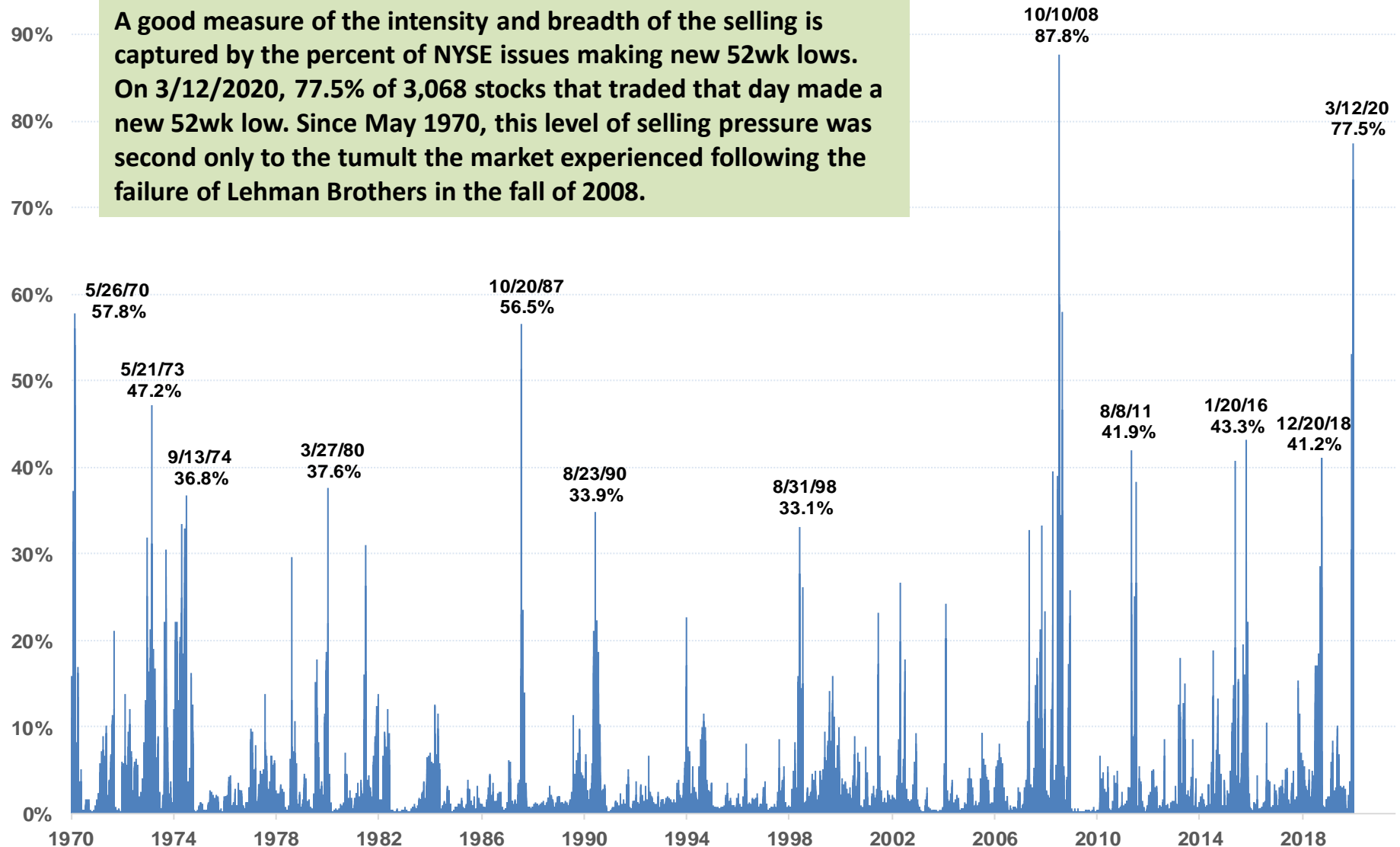
Capital Markets: A (tentative and humble) look ahead

Pct of NYSE Issues Making New 52wk Low

100%

Source: Barron's, WSJ, JAG Capital Management

A good measure of the intensity and breadth of the selling is captured by the percent of NYSE issues making new 52wk lows. On 3/12/2020, 77.5% of 3,068 stocks that traded that day made a new 52wk low. Since May 1970, this level of selling pressure was second only to the tumult the market experienced following the failure of Lehman Brothers in the fall of 2008.



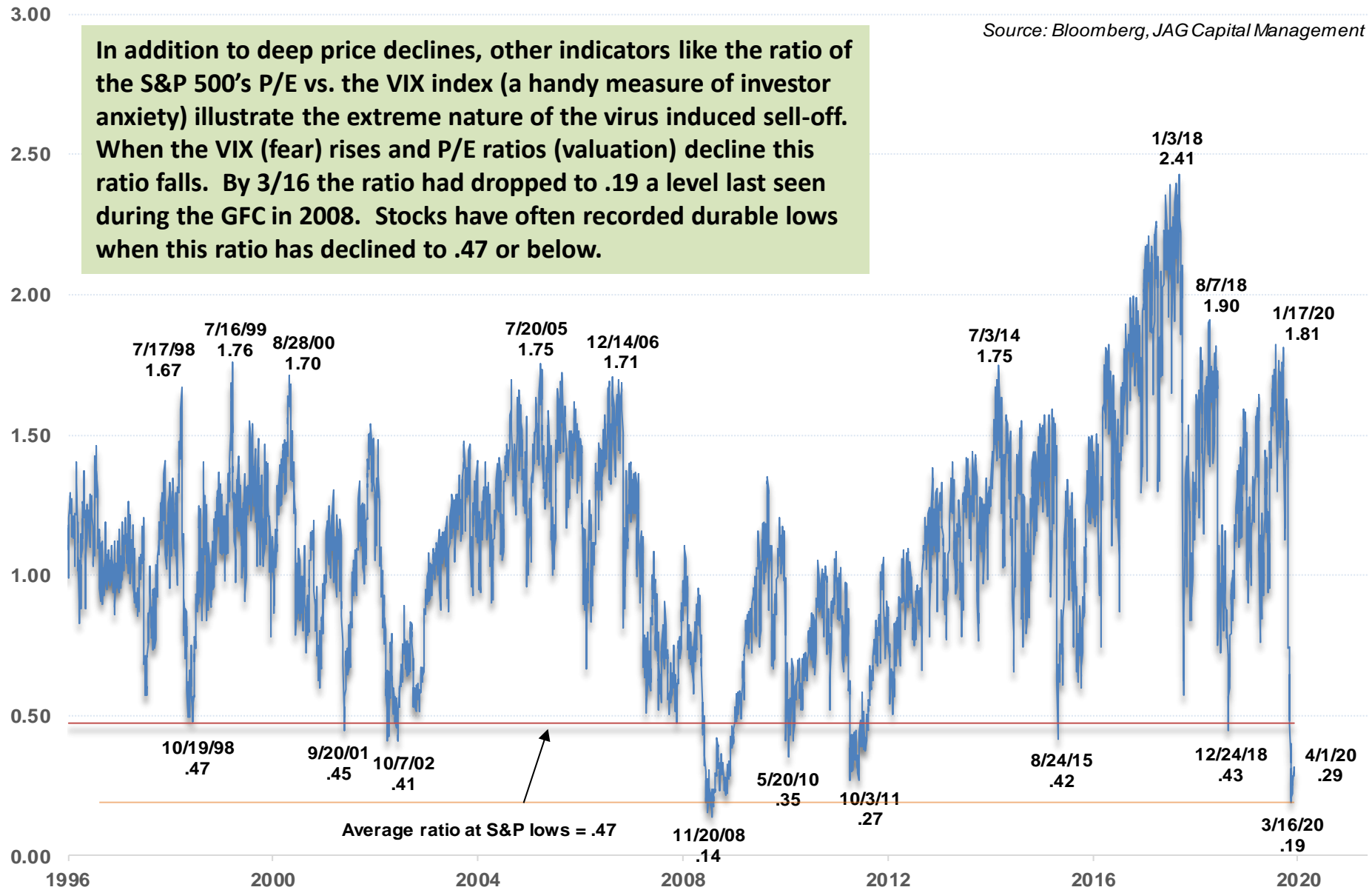
Big spikes in the number of new 52wk lows have often represented peaks in selling pressure that have been followed by recoveries in stock prices.

| S&P 500 Performance Following Spike in NYSE New Lows | | | | | |
|---|--------------------|----------------|-----------------|-----------------|------------------|
| New Low Spike | S&P 500 | 1-month | 3-months | 6-months | 12-months |
| 5/26/1970 | 69.29 | 7.9% | 11.1% | 20.8% | 44.5% |
| 5/21/1973 | 102.73 | 1.2% | 0.3% | 1.1% | -14.5% |
| 9/13/1974 | 65.20 | 9.1% | 0.6% | 30.0% | 27.8% |
| 3/27/1980 | 98.22 | 7.1% | 16.6% | 31.1% | 37.1% |
| 10/20/1987 | 236.83 | 2.6% | 6.4% | 8.1% | 18.0% |
| 8/23/1990 | 307.06 | 1.4% | 3.3% | 19.1% | 27.4% |
| 8/31/1998 | 957.28 | 9.6% | 23.6% | 28.2% | 37.9% |
| 10/10/2008 | 899.22 | 3.5% | 0.8% | -6.4% | 19.7% |
| 8/8/2011 | 1,119.46 | 4.1% | 8.8% | 20.3% | 25.2% |
| 1/20/2016 | 1,859.33 | 3.1% | 11.9% | 16.9% | 21.7% |
| 12/20/2018 | 2,467.42 | 6.7% | 14.5% | 19.4% | 30.6% |
| 3/12/2020 | 2,480.64 | | | | |
| | Avg | 5.1% | 8.9% | 17.1% | 25.0% |
| | Max | 9.6% | 23.6% | 31.1% | 44.5% |
| | Min | 1.2% | 0.3% | -6.4% | -14.5% |
| | % > 0 | 100.0% | 100.0% | 90.9% | 90.9% |
| <i>Source: Barron's, WSJ, JAG Capital Management</i> | | | | | |

S&P 500 P/E Ratio / VIX

Source: Bloomberg, JAG Capital Management

In addition to deep price declines, other indicators like the ratio of the S&P 500's P/E vs. the VIX index (a handy measure of investor anxiety) illustrate the extreme nature of the virus induced sell-off. When the VIX (fear) rises and P/E ratios (valuation) decline this ratio falls. By 3/16 the ratio had dropped to .19 a level last seen during the GFC in 2008. Stocks have often recorded durable lows when this ratio has declined to .47 or below.



Here is a table showing how the S&P 500 has performed after previous depressed readings in the P/E/VIX ratio.

| S&P 500 P/E/VIX Ratio | | | | | |
|---|--------|--------|--------|--------|--------|
| S&P 500 Performance # of days after S&P/VIX Ratio < .48 | | | | | |
| Date | 5 | 20 | 63 | 126 | 252 |
| 10/19/1998 | 0.9% | 6.9% | 18.3% | 25.8% | 18.7% |
| 9/20/2001 | 3.5% | 8.5% | 16.8% | 16.7% | -14.1% |
| 10/7/2002 | 7.2% | 15.7% | 17.5% | 11.8% | 32.3% |
| 11/20/2008 | 19.1% | 18.0% | 2.8% | 21.0% | 45.0% |
| 5/20/2010 | 2.9% | 4.3% | 0.4% | 10.0% | 25.4% |
| 10/3/2011 | 8.7% | 14.0% | 16.2% | 28.6% | 31.5% |
| 8/24/2015 | 4.2% | 2.6% | 10.4% | 1.9% | 15.5% |
| 12/24/2018 | 6.8% | 12.4% | 19.3% | 23.9% | 37.1% |
| Average | 6.6% | 10.0% | 11.7% | 16.5% | 22.1% |
| Median | 4.2% | 8.5% | 16.2% | 16.7% | 25.4% |
| Max | 19.1% | 18.0% | 18.3% | 28.6% | 45.0% |
| Min | 0.9% | 2.6% | 0.4% | 1.9% | -14.1% |
| % > 0 | 100.0% | 100.0% | 100.0% | 100.0% | 85.7% |
| Source: Bloomberg, JAG Capital Management | | | | | |

S&P 500

4,096

Source: WSJ, JAG Capital Management

A number of technical indicators suggest the S&P 500 close at 2,237.40 on 3/23 could be a durable low. One indicator we'll be watching closely for confirmation is the ratio of the 10-day sum of advancing issues / 10-day sum of declining issues on the NYSE. Historically when this ratio reaches 2.00 or more stocks do well over the subsequent year. This does not happen often. The red lines in this chart mark previous times when the ratio has reached 2.00+. A similar reading in the weeks ahead would be a strong indication that stocks have room to run.

2,048

1,024

512

256

128

64

32

16

8

1949 1954 1959 1964 1969 1974 1979 1984 1989 1994 1999 2004 2009 2014 2019

1/26/54

26.09

1/24/58

41.71

7/11/62

57.73

1/16/67

84.31

12/4/70

89.46

1/10/75

72.61

8/23/82

116.09

1/14/87

262.64

2/5/91

351.26

3/23/09

1,068.76

7/12/16

2152.14

1/9/19

2,584.96

Here is a table showing how the S&P 500 has performed after previous breadth thrust signals.

| S&P 500 Performance Following Breadth Thrust Signal* | | | | | |
|---|----------|------------|-------------|-------------|---------|
| Date | SPX | 10DADRatio | MaxGain+1yr | MaxLoss+1yr | Ret+1yr |
| 7/13/1949 | 14.78 | 2.06 | 31.3% | -0.1% | 15.4% |
| 1/26/1954 | 26.09 | 2.01 | 40.9% | -1.1% | 36.1% |
| 1/24/1958 | 41.71 | 2.00 | 34.4% | -2.6% | 33.7% |
| 7/11/1962 | 57.73 | 2.05 | 22.6% | -7.3% | 20.8% |
| 11/9/1962 | 58.78 | 2.05 | 26.7% | 1.2% | 25.1% |
| 1/16/1967 | 84.31 | 2.05 | 15.8% | 1.1% | 13.7% |
| 12/4/1970 | 89.46 | 2.12 | 17.1% | 0.0% | 8.5% |
| 1/10/1975 | 72.61 | 2.25 | 31.7% | -2.6% | 30.8% |
| 1/6/1976 | 93.53 | 2.05 | 15.3% | 0.4% | 13.0% |
| 8/23/1982 | 116.09 | 2.02 | 47.3% | -0.6% | 41.3% |
| 10/13/1982 | 136.68 | 2.03 | 26.3% | -2.7% | 24.6% |
| 1/14/1987 | 262.64 | 2.19 | 28.2% | -14.8% | -6.4% |
| 2/5/1991 | 351.26 | 2.10 | 19.8% | 1.5% | 17.8% |
| 3/23/2009 | 822.92 | 2.21 | 42.7% | -4.3% | 42.7% |
| 7/23/2009 | 976.29 | 2.17 | 24.7% | -0.1% | 12.9% |
| 9/16/2009 | 1,068.76 | 2.32 | 13.9% | -4.3% | 5.2% |
| 7/12/2016 | 2,152.14 | 2.18 | 14.0% | -3.1% | 13.5% |
| 1/9/2019 | 2,584.96 | 2.37 | 26.7% | -0.1% | 26.7% |
| | | Avg | 26.6% | -2.2% | 20.9% |
| | | Max | 47.3% | 1.5% | 42.7% |
| | | Min | 13.9% | -14.8% | -6.4% |
| | | % > 0 | 100.0% | 27.8% | 94.4% |
| *breadth thrust = 10-day sum of NYSE advancing issues/10-day sum of NYSE declining issues > 2.0 | | | | | |
| Source: WSJ, JAG Capital Management | | | | | |

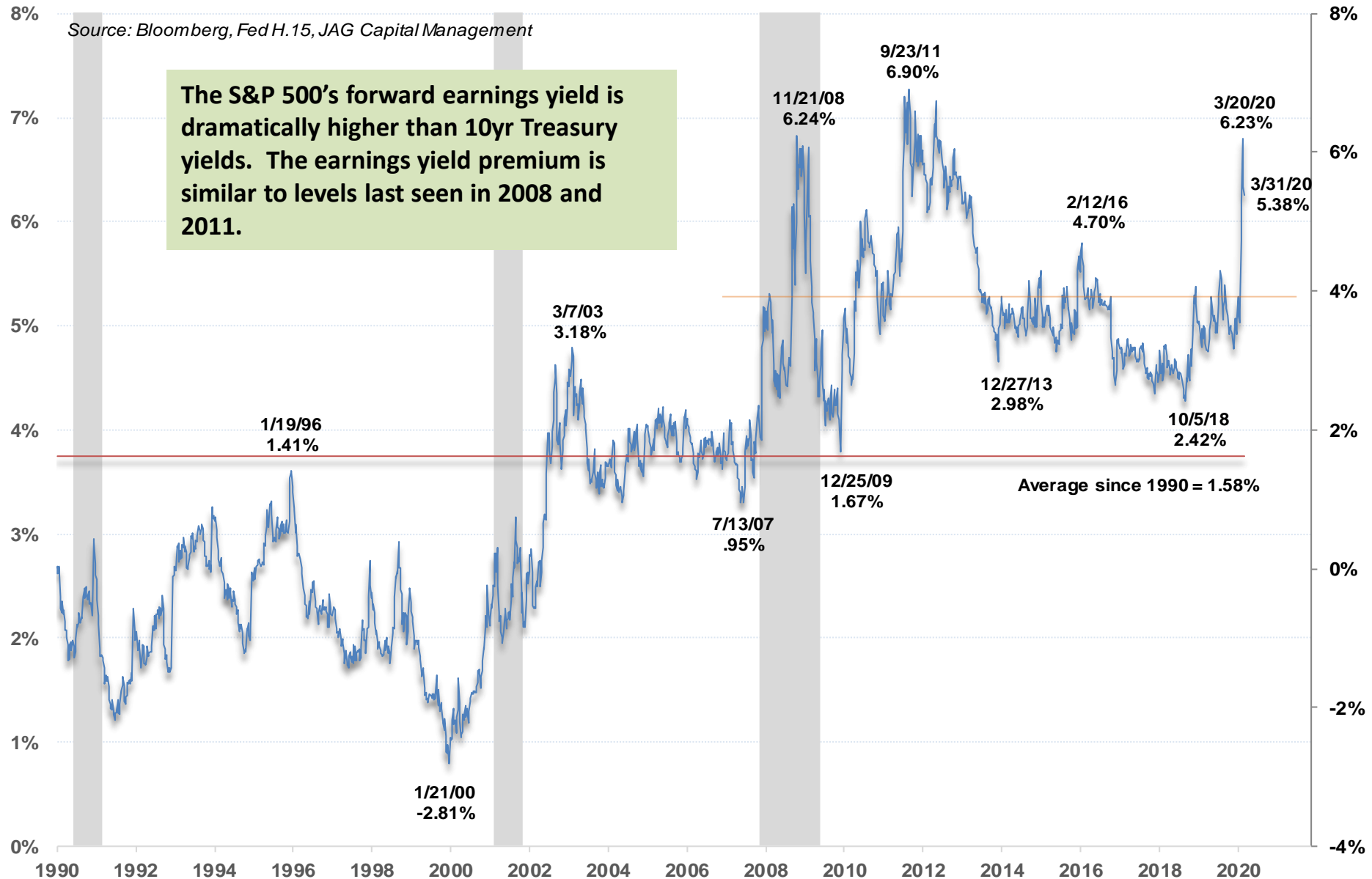
Fwd Earnings Yield for S&P 500 (blue line), Baa Yield (red line), 10yr Trsy Yield (grn line)



S&P 500 Fwd Earnings Yield - 10yr Trsy Yield

Source: Bloomberg, Fed H.15, JAG Capital Management

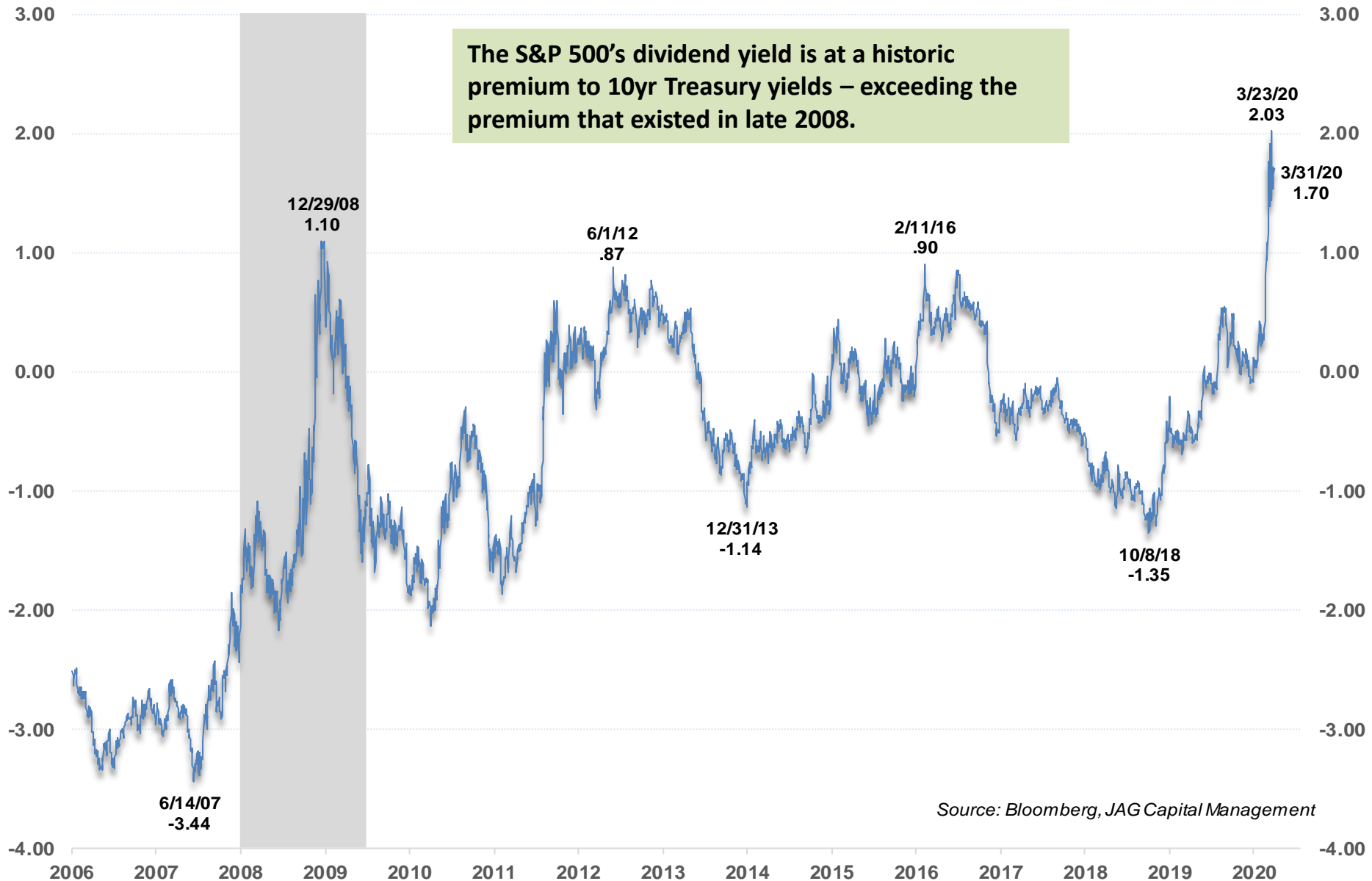
The S&P 500's forward earnings yield is dramatically higher than 10yr Treasury yields. The earnings yield premium is similar to levels last seen in 2008 and 2011.



S&P 500 Fwd Earnings Yield - Baa Yield



S&P 500 Dividend Yield - 10yr Trsy Yield



CCC Yield / AAA Yield Ratio Zscore



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