

Student of the Market

April 2020

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Worst days, weeks, and months for the S&P 500 since 1950

15 worst historic periods, principal return only

Worst Days

Calendar Days	S&P 500 Decline	Return 1 year later
10/19/1987	-20.5%	23.1%
3/16/2020	-12.0%	?
3/12/2020	-9.5%	?
10/15/2008	-9.0%	20.8%
12/01/2008	-8.9%	35.9%
09/29/2008	-8.8%	-4.1%
10/26/1987	-8.3%	23.5%
10/09/2008	-7.6%	17.8%
3/9/2020	-7.6%	?
10/27/1997	-6.9%	21.5%
08/31/1998	-6.8%	38.0%
01/08/1988	-6.8%	15.3%
11/20/2008	-6.7%	45.1%
05/28/1962	-6.7%	26.7%
08/08/2011	-6.7%	25.2%
Average	-8.9%	24.1%

Worst Weeks

Calendar Week	S&P 500 Decline	Return 1 year later
10/5/2008	-18.2%	19.2%
3/15/2020	-15.0%	?
10/18/1987	-12.2%	13.7%
9/16/2001	-11.6%	-12.5%
2/23/2020	-11.5%	??
4/9/2000	-10.5%	-12.8%
9/28/2008	-9.4%	-6.7%
10/11/1987	-9.1%	-2.2%
3/8/2020	-8.8%	?
9/8/1974	-8.7%	27.8%
11/16/2008	-8.4%	36.4%
7/14/2002	-8.0%	17.2%
9/7/1986	-7.9%	39.6%
6/25/1950	-7.6%	18.5%
9/22/1974	-7.4%	32.7%
Average	-9.2%	14.2%

Worst Months

Calendar Months	S&P 500 Decline	Return 1 year later
Oct-87	-21.8%	10.8%
Oct-08	-16.9%	7.0%
Aug-98	-14.6%	37.9%
Sep-74	-11.9%	32.0%
Nov-73	-11.4%	-27.1%
Sep-02	-11.0%	22.2%
Feb-09	-11.0%	50.3%
Mar-80	-10.2%	33.2%
Aug-90	-9.4%	22.6%
Feb-01	-9.2%	-10.7%
Dec-18	-9.2%	28.9%
Oct-78	-9.2%	9.3%
Sep-08	-9.1%	-9.4%
Apr-70	-9.1%	27.5%
Aug-74	-9.0%	20.4%
Average	-12.4%	16.7%

Sources: BlackRock; Morningstar as of 3/22/20. U.S. stocks are represented by the S&P 500 Index, an unmanaged index that is generally considered representative of the U.S. stock market. Index performance is for illustrative purposes only. It is not possible to invest directly in an index. Performance does not guarantee or indicate future results. *Indicates principal return, dividends not included.

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Anatomy of Bear Markets

Since 1950, bear periods include periods down 19% or more

A breakdown of bear markets since 1950

	8/2/56 +195.7%	12/11/61 +85%	2/9/66 +79.8%	11/27/68 +48.1%	1/11/73 +71%	9/21/76 +70%	11/28/80 +60.7%	8/25/87 +228%	7/16/90 +64.8%	7/17/98 +295%	3/23/00 +59.6%	10/9/07 +101.5%	9/19/18 +164.5%
Bull market peak													
Bear market low	10/22/57 -21.6%	6/26/62 -28.0%	10/7/66 -22.2%	5/26/70 -36.1%	10/3/74 -48.2%	3/6/78 -19.4%	8/12/82 -27.1%	12/4/87 -33.5%	10/11/92 -19.9%	8/31/98 -19.3%	10/9/02 -49.1%	3/9/09 -56.8%	12/24/18 -19.2%
# of days of bear market	306	135	167	369	436	366	430	71	62	31	637	355	65
-5%	8/30/56	1/10/62	3/2/66	1/6/69	2/5/73	10/11/76	12/8/80	9/4/87	8/3/90	7/29/98	4/13/00	11/8/07	10/11/18
-10%	11/21/56	4/30/62	5/16/66	6/19/69	4/27/73	5/2/77	8/24/81	10/15/87	8/17/90	8/14/98	4/14/00	1/8/08	12/14/18
-15%	10/8/57	5/23/62	8/19/66	7/25/69	7/3/73	10/24/77	9/8/81	10/16/87	8/23/90	8/31/98	12/20/00	1/22/08	12/20/18
-20%	10/21/57	5/28/62	8/29/66	1/29/70	11/27/73	-	2/22/82	10/19/87	-	-	3/12/01	7/11/08	-
-25%	-	6/14/62	-	4/28/70	4/25/74	-	8/5/82	10/19/87	-	-	3/20/01	9/29/08	-
-30%	-	-	-	5/14/70	7/5/74	-	-	10/19/87	-	-	9/17/01	10/6/08	-
-35%	-	-	-	5/25/70	8/14/74	-	-	-	-	-	9/20/01	10/7/08	-
-40%	-	-	-	-	8/23/74	-	-	-	-	-	7/16/02	10/9/08	-
-45%	-	-	-	-	9/13/74	-	-	-	-	-	7/22/02	10/27/08	-
-50%	-	-	-	-	-	-	-	-	-	-	-	11/20/08	-
-55%	-	-	-	-	-	-	-	-	-	-	-	3/5/09	-

Date of various loss levels

Morningstar as of 12/31/19. Stock market represented by S&P 500 stocks PR Index. Principal return only, dividends not included. Past performance does not guarantee or indicate future results. Index performance is for illustrative purposes only. You cannot invest directly in the index.

2.1 Anatomy of bull market rebounds

Since 1950, bear periods include periods down 19% or more

Average performance following a bear market

Since 1950, 13 bear markets

35.6%



Average return 1 year after

14.1%



Average return 3 years after

11.2%



Average return 5 years after

Rebounds from bear markets since 1950

Bear Market Low	10/22/57 -21.5%	6/26/62 -28.0%	10/7/66 -22.2%	5/26/70 -36.1%	10/3/74 -48.2%	3/6/78 -19.4%	8/12/82 -27.1%	12/4/87 -33.5%	10/11/92 -19.9%	8/31/98 -19.3%	10-9-02 -49.14%	3/9/09 -56.8%	12/24/18 -19.8%
Return needed from low to break-even	27.3%	38.8%	28.5%	56.4%	93.1%	24.1%	37.2%	50.4%	24.9%	24.0%	96.6%	129.5%	24.7%
Days from low to break-even	233	299	143	451	1,462	366	58	414	148	61	1,166	1008	81
1-year return	31.0%	32.4%	32.9%	43.7%	38.0%	12.6%	58.3%	22.5%	14.5%	37.9%	33.7%	68.6%	37.1%
3-year return	15.2%	16.7%	8.3%	15.9%	15.8%	14.3%	22.4%	16.4%	12.9%	5.8%	15.5%	10.4%	?
5-year return	9.9%	11.9%	6.4%	5.5%	12.0%	2.1%	26.6%	17.4%	19.2%	1.0%	15.0%	7.9%	?
10-year return	8.3%	7.5%	3.5%	4.8%	10.1%	11.9%	15.1%	18.9%	7.6%	3.0%	6.4%	15.0%	?

From the low

Morningstar as of 12/31/19. Stock market represented by S&P 500. Stocks PR Index. Principal return only, dividends not included. Past performance does not guarantee or indicate future results. Index performance is for illustrative purposes only. You cannot invest directly in the index.

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Missing the bear market bottom

U.S. stock returns

1-year returns, 1/1/1950 – 12/31/19 (13 bear markets)

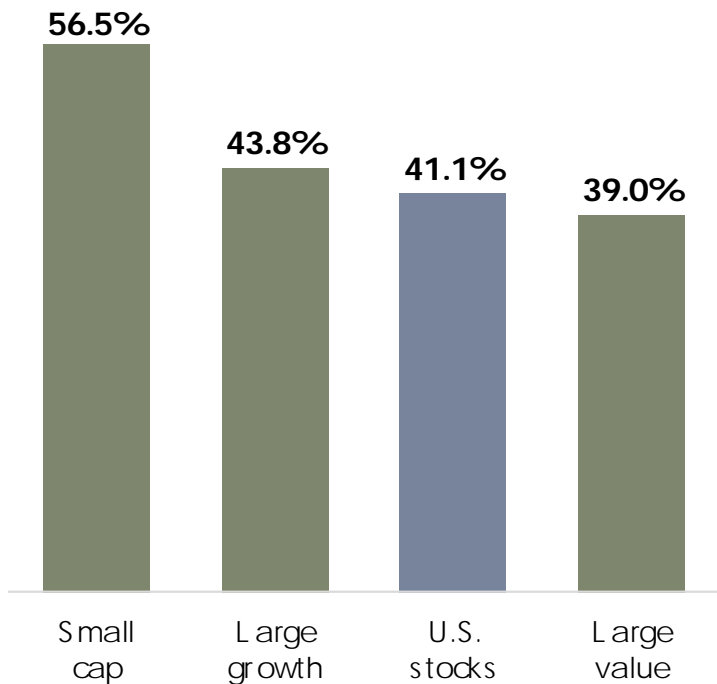


Morningstar as of 12/31/19. Stock market represented by S&P 500. Stocks PR Index. Principal return only, dividends not included. Past performance does not guarantee or indicate future results. Index performance is for illustrative purposes only. You cannot invest directly in the index.

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Asset class performance following bear market bottoms

One year performance following bear markets
 Since 1982, average annual return percentage (7 bear market bottoms)



	12/25/18 to 12/24/19	3/10/09 to 3/9/10	10/10/02 to 10/9/03	9/1/98 to 8/31/99	10/12/92 to 10/11/93	12/5/87 to 12/4/88	8/13/82 to 8/12/83	Avg. return
Tech stock funds	46.0%	84.4%	86.2%	114.1%	39.2%	20.0%	90.0%	68.6%
EM stocks	19.5%	107.7%	59.7%	-	-	-	-	62.3%
U.S. small cap stocks	34.4%	97.9%	61.6%	28.4%	37.7%	36.7%	99.1%	56.5%
U.S. mid cap stocks	38.5%	96.5%	51.9%	31.8%	24.7%	27.0%	73.2%	49.1%
Financial stock funds	34.5%	110.9%	44.7%	18.4%	41.8%	29.8%	57.2%	48.2%
U.S. large growth	40.8%	68.1%	34.0%	47.8%	20.5%	22.8%	72.8%	43.8%
U.S. stocks	39.9%	72.3%	36.2%	39.8%	17.8%	22.5%	59.3%	41.1%
U.S. large value	31.7%	74.3%	36.9%	27.6%	21.5%	24.6%	56.3%	39.0%
Energy stock funds	14.6%	75.9%	35.8%	54.1%	39.3%	21.4%	29.2%	38.6%
International stocks	22.8%	75.7%	39.4%	25.7%	26.4%	31.3%	32.0%	36.2%
U.S. quality stocks	47.8%	60.5%	23.1%	45.4%	3.3%	19.4%	49.4%	35.6%
High dividend stocks	28.6%	76.9%	28.8%	20.5%	11.0%	22.1%	53.1%	34.4%
Health stock funds	37.1%	51.0%	31.2%	35.7%	10.0%	23.2%	51.5%	34.3%
High yield bonds	12.9%	52.8%	28.4%	4.9%	16.8%	13.5%	34.8%	23.4%
Municipal Bonds	7.6%	10.9%	2.8%	0.5%	12.7%	10.6%	25.8%	10.1%
U.S. Bonds	8.9%	9.3%	4.2%	0.8%	11.5%	9.2%	21.9%	9.4%







Source: Morningstar and BlackRock as of 12/31/19. U.S. stocks represented by the Ibbotson S&P 500 Index and the S&P 500 Index, U.S. bonds by the Bloomberg Barclays U.S. Aggregate Bond Index, Municipals by Bloomberg Barclays Municipal Bond Index, High yield by the Bloomberg Barclays U.S. Corporate High Yield Index, Dividend growth by the Russell 1000 Dividend Growth Index, High dividend by the MSCI USA High Dividend Payers Index, U.S. minimum volatility by the MSCI USA Minimum Volatility Index, U.S. quality by the MSCI USA Quality Index, International by the MSCI EAFE Index, Mid cap by the Russell Mid Cap Index, Momentum by the MSCI USA Momentum Index, Emerging market stocks by the MSCI EM Index, Large growth by the Russell 1000 Growth Index and the Fama French Large Value Index, Large value by the Russell 1000 Value Index and the Fama French Large Value Index, Small cap by the Fama French Small Cap Stock Index, Technology by the Morningstar Technology Fund category, Financials by the Morningstar Financial Fund category, Energy by the Morningstar Utilities Fund category. Index performance is for illustrative purposes only. Past performance does not guarantee or indicate future results. It is not possible to invest in an index.

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A diversified portfolio wins even though it never feels good

40% U.S. stocks, 15% international stocks, 5% small cap stocks, 30% U.S. bonds, 10% high yield bonds



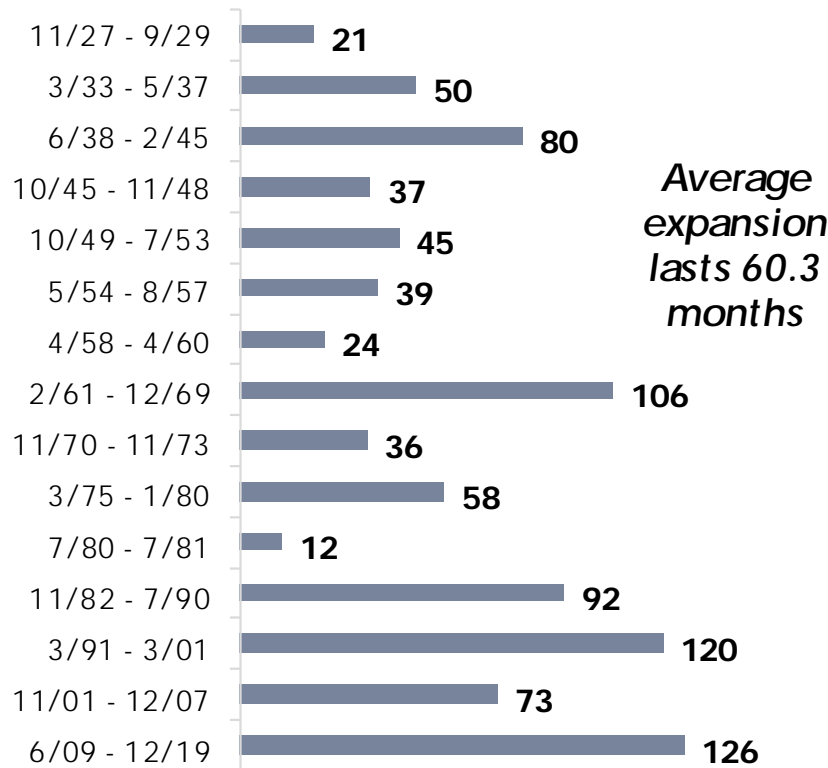
Years	S&P 500	Diversified Portfolio	
2000*-2002	(40.1%)	(18.6%)	 "I lost money"
2003-2007	+82.9%	+73.8%	 "I didn't make as much"
2008	(37.0%)	(24.0%)	 "I lost money"
2009-2019	+351.0%	+191.7%	 "I didn't make as much"
2020**	(28.3%)	(19.8%)	 "I lost money"
Total Return	+122.9%	+151.5%	 "Diversification wins even when it feels like its losing"
Gr \$100K	\$222,883	\$251,467	

Source: Morningstar as of 3/22/20. *Performance is from 8/1/2000 to 12/31/2000 to more accurately reflect the time period encompassing the previous two bull and bear markets **Performance is YTD as of 3/22/20. Diversified Portfolio is represented by 40% S&P 500 Index, 15% MSCI EAFE Index, 5% Russell 2000 Index, 30% Bloomberg Barclays US Aggregate Bond Index, and 10% Bloomberg Barclays US Corporate High Yield Index. Past performance does not guarantee or indicate future results. Index performance is for illustrative purposes only. You cannot invest directly in the index.

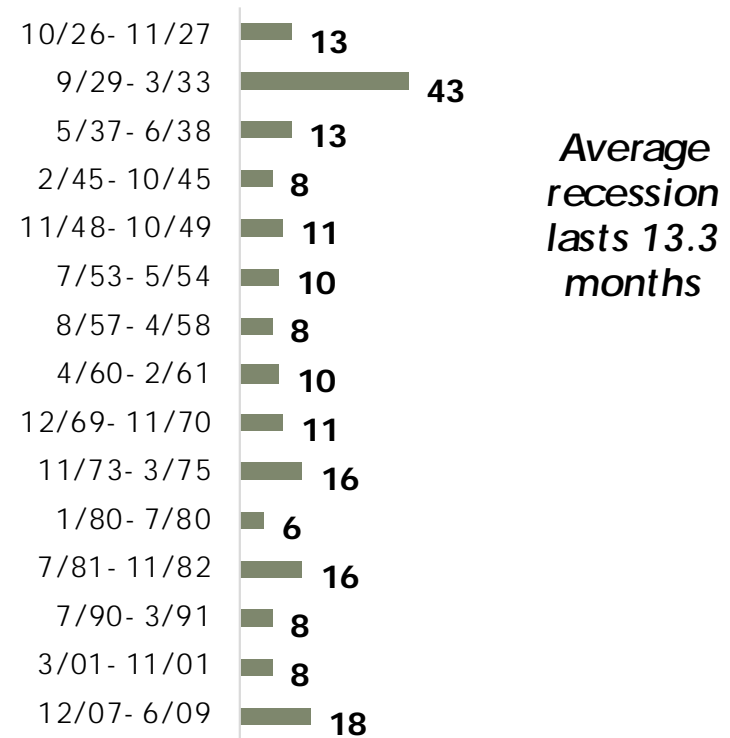
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Recessions and expansions

Length of U.S. economic expansion (months)



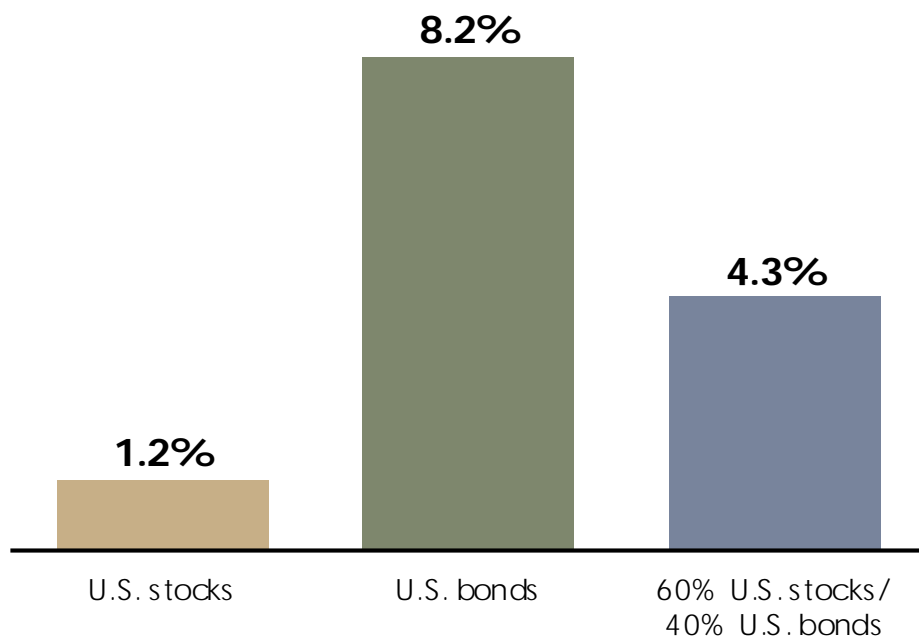
Length of U.S. economic recessions (months)



Source: National Economic Bureau of Research and Morningstar as of 12/31/19. For illustrative purposes only.

7 Performance during recessions

Average performance during a recession
Last 90 years (since 1929)



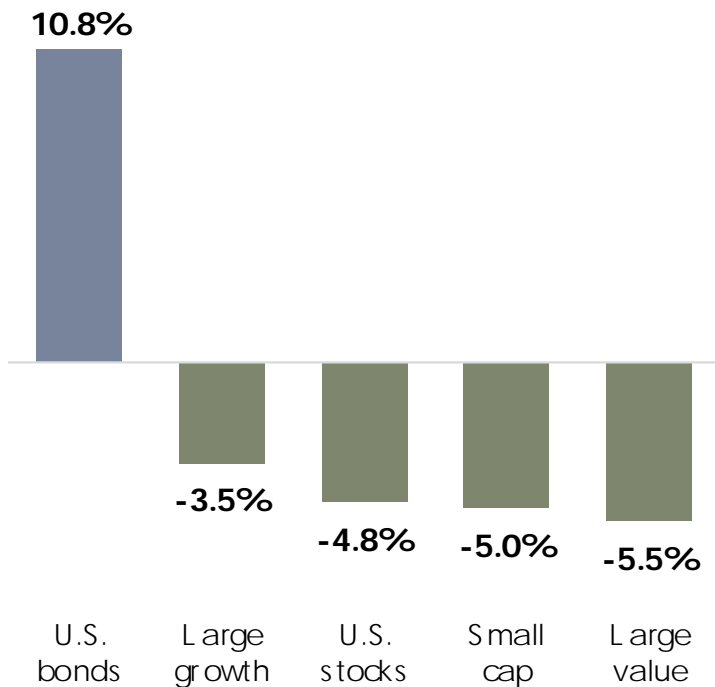
Recessions	U.S. stocks	U.S. bonds	60/40 portfolio
9/1/29 to 3/31/33	-33.6%	4.9%	-19.1%
6/1/37 to 6/30/38	-22.4%	6.4%	-9.9%
3/1/45 to 10/31/45	19.5%	1.0%	12.4%
12/1/48 to 10/31/49	15.2%	2.5%	10.1%
8/1/53 to 5/31/54	24.2%	5.1%	16.6%
9/1/57 to 4/30/58	-1.5%	9.7%	3.3%
5/1/60 to 2/28/61	20.3%	7.2%	14.9%
1/1/70 to 11/30/70	-2.0%	16.2%	5.3%
12/1/73 to 3/31/75	-5.9%	5.7%	0.0%
2/1/80 to 7/31/80	9.6%	9.5%	9.5%
8/1/81 to 11/30/82	10.5%	29.1%	17.9%
8/1/90 to 3/31/91	8.0%	7.5%	8.1%
4/1/01 to 11/30/01	-0.9%	5.9%	1.9%
1/1/08 to 6/30/09	-25.0%	4.8%	-11.5%
Average	1.2%	8.2%	4.3%

Morningstar as of 12/31/19. Stock market represented by S&P 500. Stocks represented by the IAUS Large Cap TR Index and US Bonds by the IAUS IT Gov Bond Tr Index. Past performance does not guarantee or indicate future results. Index performance is for illustrative purposes only. You cannot invest directly in the index.

7.1 Performance during recessions- asset classes

Performance during recessions

Since 1972, cumulative return percentage



Performance during recessions

Since 1972, cumulative return percentage

	Jan '08 to Jun '09	Mar '01 to Nov '01	Jul '90 to Mar '91	Aug '81 to Aug '82	Feb '80 to July '80	Dec '73 to Mar '75	Average
U.S. bonds	7.2%	5.9%	7.5%	27.1%	9.5%	7.6%	10.8%
Municipal bonds	3.8%	3.8%	5.2%	18.9%	-0.4%	-	6.3%
High yield bonds	-3.7%	-0.6%	3.7%	-	-	-	-0.2%
U.S. quality stocks	-24.8%	4.1%	10.8%	-5.1%	8.1%	-	-1.4%
Large growth stocks	-31.3%	0.8%	12.0%	-8.0%	9.4%	-	-3.5%
Mid cap stocks	-35.6%	1.4%	10.2%	-5.9%	10.7%	-	-3.9%
U.S. stocks	-35.0%	-0.9%	8.0%	-2.8%	9.6%	-7.8%	-4.8%
Small cap stocks	-32.0%	3.2%	7.7%	-11.4%	7.5%	-	-5.0%
Technology stocks	-30.7%	-6.6%	11.5%	-0.7%	7.4%	-11.4%	-5.0%
Large value stocks	-38.7%	-2.0%	6.2%	-1.3%	8.5%	-	-5.5%
Dividend growth stocks	-29.5%	8.8%	-	-	-	-	-10.4%
International stocks	-38.9%	-9.5%	-7.7%	-13.2%	7.1%	-3.1%	-10.9%
Momentum stocks	-42.2%	-0.4%	6.1%	-	-	-	-12.2%
Emerging market stocks	-36.5%	-4.5%	-	-	-	-	-20.5%

Source: Morningstar and BlackRock as of 12/31/19. U.S. stocks represented by the Ibbotson S&P U.S. Large Cap TR Index and the S&P 500 Index, U.S. bonds by the Ibbotson S&P U.S. IT Bond Index and the BofA Merrill Lynch U.S. Agg Bond Index, Municipals by BofA Merrill Lynch Municipal Bond Index, High yield by the BofA Merrill Lynch U.S. Corporate High Yield Index, Dividend growth by the Russell 1000 Dividend Growth Index, High dividend by the MSCI USA High Dividend Payers Index, U.S. minimum volatility by the MSCI USA Minimum Volatility Index, U.S. quality by the MSCI USA Quality Index, International by the MSCI EAFE Index, Mid cap by the Russell Mid Cap Index, Momentum by the MSCI USA Momentum Index, Emerging market stocks by the MSCI EM Index, Large growth by the Russell 1000 Growth Index and the Fama French Large Value Index, Large value by the Russell 1000 Value Index and the Fama French Large Value Index, Small cap by the Fama French Small Cap Stock Index, Technology by the Morningstar Technology Fund category. Index performance is for illustrative purposes only. Past performance does not guarantee or indicate future results. It is not possible to invest in an index.

Student of the Market: April 2020 early edition

Returns as of 12/31/2019	Total Ret 1 Year	Total Ret 5 Years	Total Ret 10 Years
S&P 500 TR USD	31.49	11.70	13.56
BBgBarc Municipal TR USD	7.54	3.53	4.34
BBgBarc US Agg Bond TR USD	8.72	3.05	3.75
BBgBarc US Corporate High Yield TR USD	14.32	6.13	7.57
IA SBBI US IT Govt TR USD	8.26	2.92	3.10
IA SBBI US LT Govt TR USD	12.16	3.67	6.55
MSCI EAFE NR USD	22.01	5.67	5.50
MSCI EM NR USD	18.42	5.61	3.68
Russell 1000 Growth TR USD	36.39	14.63	15.22
Russell 1000 Value TR USD	26.54	8.29	11.80
Russell 2000 TR USD	25.52	8.23	11.83
Russell Mid Cap TR USD	30.54	9.33	13.19
S&P 500 PR	28.88	9.43	11.22
US Fund Health	26.23	8.75	14.90
US Fund Technology	37.49	16.46	15.10
US Fund Utilities	22.87	8.66	10.76

Source: Morningstar. Performance data quoted represents past performance and is no guarantee of future results. Current performance may be lower or higher than that shown.

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