

Dow Jones Industrial Average Report Card – 2018 Year in Review

Contributor

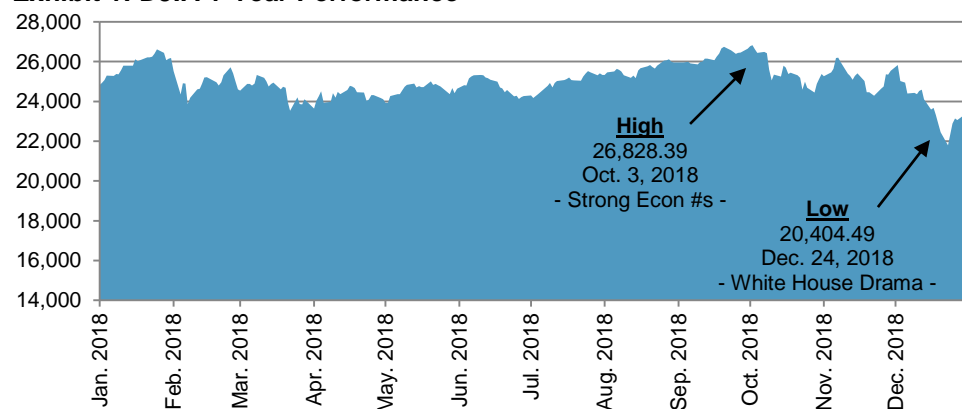
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AT A GLANCE

The Dow Jones Industrial Average ended an ugly year on a positive note; the last session added over 260 points to finish at 23,327.46 for a daily gain of 1.15% and the best final trading session since 2012. But for the year, the Average closed down 5.63%, the worst annual performance since 2008 and only the second negative yearly return of the last decade.

- **Prominent Themes** – The return of volatility, the last legs(?) of a decade-long bull market, tariffs and trade wars, interest rate increases, and unpredictable U.S. and global political climates.
- **New Highs** – The DJIA logged 15 new highs in 2018, behind the pace of the last few years yet ahead of the average since inception.
- **Milestones** – Two new 1,000 point milestones were logged in January (25k and 26k), but the party ended shortly thereafter.
- **Best Day** – December 26 (up 1,086.24 or 4.98%), when investors, heartened by positive retail numbers, drove the DJIA to its first ever 1,000+ point daily gain.
- **Large Moves** – Welcome back, volatility. This year, there were 69 trading sessions when the DJIA posted a move of 1% or greater.
- **Stock Contributions** – UnitedHealth Group (UNH) was the biggest contributor to the DJIA's advance.
- **Sector Contributions** – The Healthcare sector was the largest contributor in 2018, followed by Telecommunication Services and Consumer Discretionary.

Exhibit 1: DJIA 1-Year Performance



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

PERFORMANCE STATISTICS

Exhibit 2: DJIA Long-Term Performance (%)

Q4 2018	1-YEAR	3-YEAR	5-YEAR	7-YEAR	10-YEAR
-11.83	-5.63	33.87	40.72	90.93	165.80

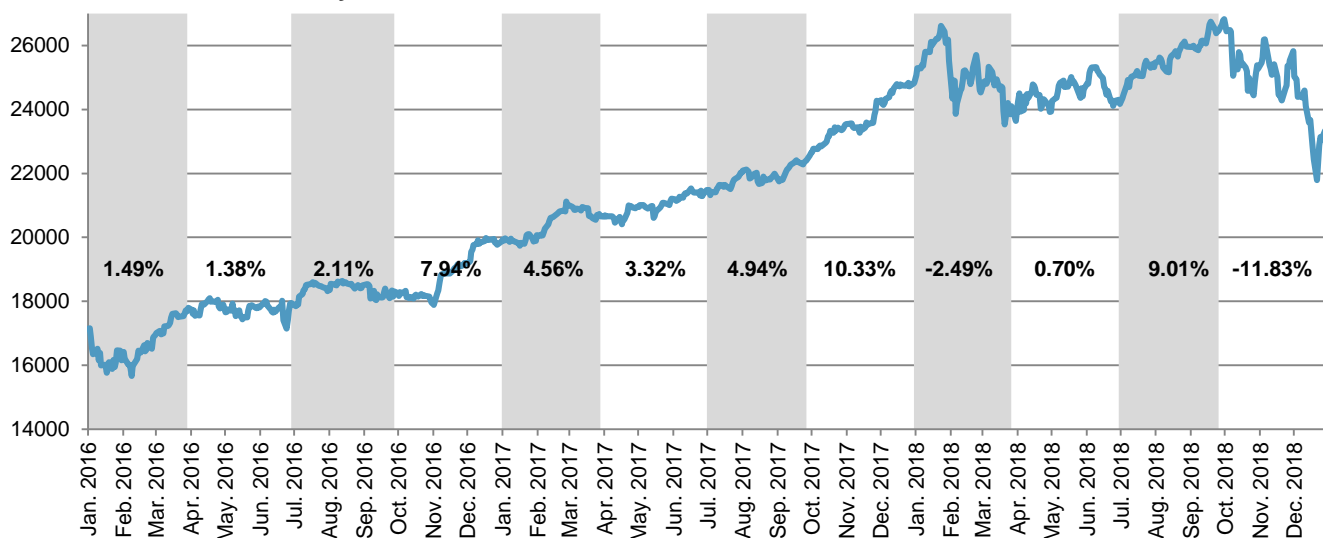
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Exhibit 3: DJIA Historical Annual Performance (%)

2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
-5.63	25.08	13.42	-2.23	7.52	26.50	7.26	5.53	11.02	18.82	-33.84	6.43

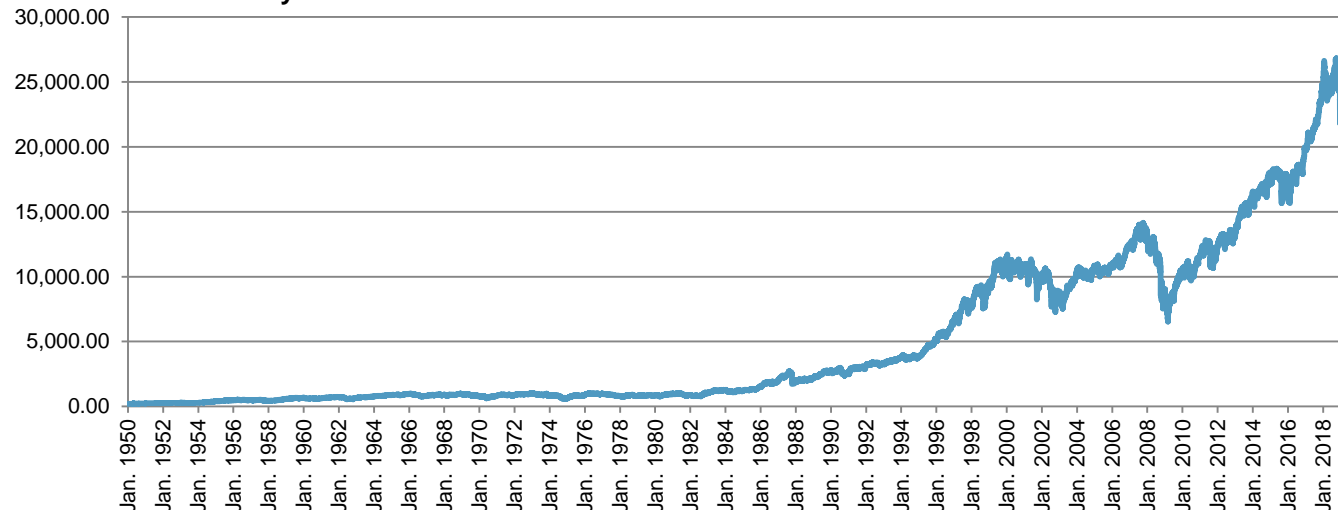
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Exhibit 4: Recent Quarter-by-Quarter Performance



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Exhibit 5: DJIA History Since 1950

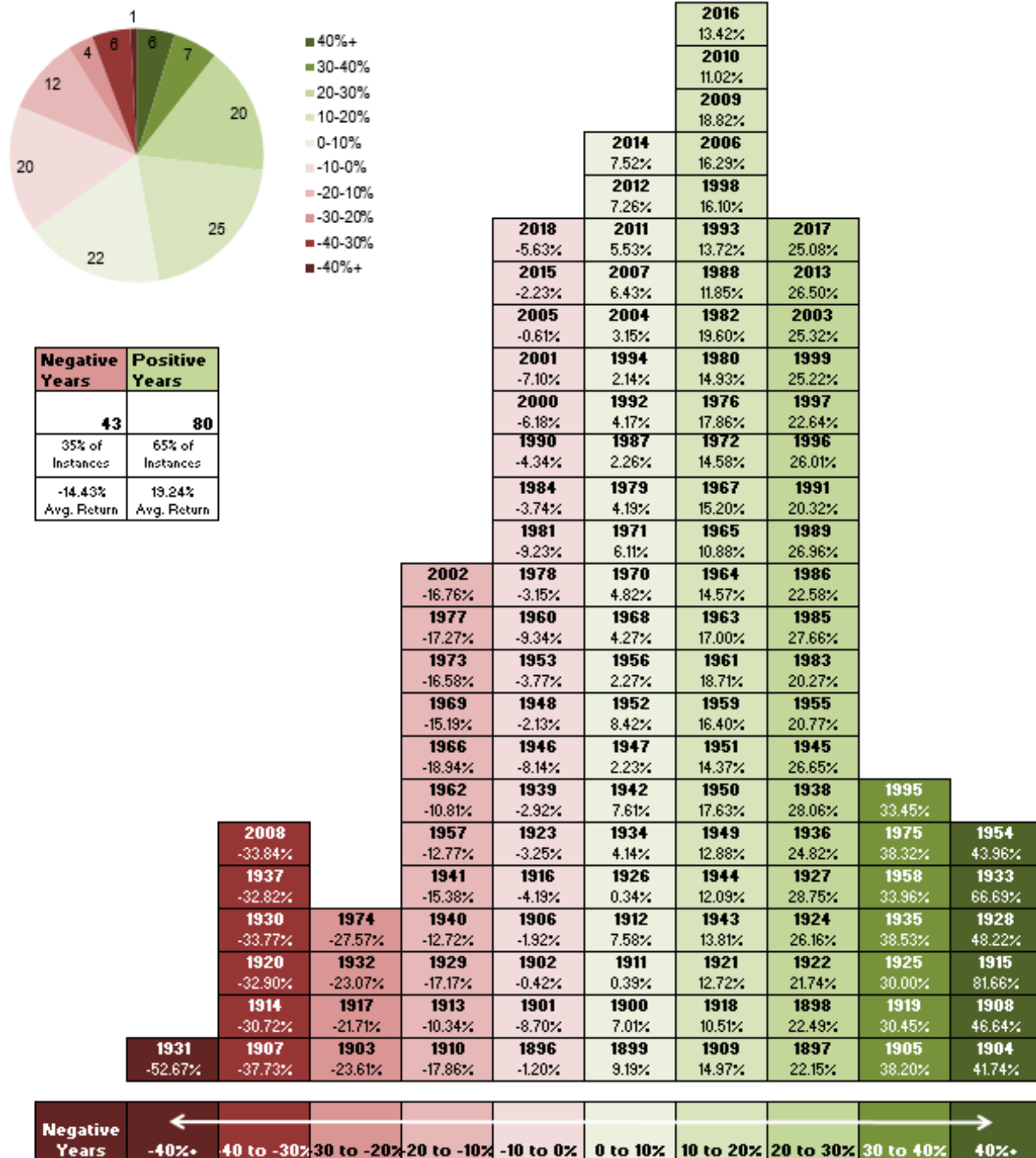


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ANNUAL RETURNS DISTRIBUTION

With an annual return of -5.63%, this year fell within a performance range (i.e., down 0-10%) that is tied for the third most common; the range of up 10%-20% has a similar number of observations since the DJIA's inception. Each of these ranges have experienced 20 observations out of 123 years. In 66% of total observations (1896-2018), the DJIA has posted a positive calendar year return.

Exhibit 6: Annual Returns Distribution (1896-2018)



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1% MOVES

Muted volatility was a major theme in 2017. But in 2018? Yeah...no.

This year, there were 69 trading sessions when the DJIA posted a move of 1% or greater. That performance is more volatile than historical averages: since 1940, the annual average is ~49 one percent moves or an experience that typically occurs in about 1 of every 5 trading sessions. In 2018, the statistic was greater than 1 in every 4 sessions. This was the highest total since 2015 when Chinese economic worries, an oil crash, and other factors led to elevated volatility.

By comparison, in 2017 a 1% move occurred in only 1 of every 25 sessions. There were only 10 trading sessions when the DJIA posted a move of 1% or greater (4 to the downside, 6 to the upside). This was the lowest total since 1964, when only three such moves were recorded for the entire year.

Since inception, 1% moves to the upside (~11.8% of all trading days) are slightly more common than those to the downside (~11.4% of all trading days).

Exhibit 7: Moves of 1% or Greater

YEAR	Q1	Q2	Q3	Q4	ANNUAL
2018	24	14	3	28	69
2017	2	3	3	2	10
2016	26	14	6	5	51
2015	20	10	23	19	72
2014	11	4	4	17	36
2013	4	10	4	6	24
2012	5	17	6	11	39
2011	11	12	34	32	89
2010	14	28	18	9	69
2009	42	30	17	19	108
2008	29	18	37	50	134
2007	4	9	24	19	56
2006	4	11	7	2	24
2005	5	13	3	6	27
2004	15	9	10	11	45
2003	29	19	13	10	71
2002	21	29	42	36	128
2001	24	21	28	24	97
2000	28	32	14	27	101
1999	24	22	18	19	83
1998	16	16	30	23	85

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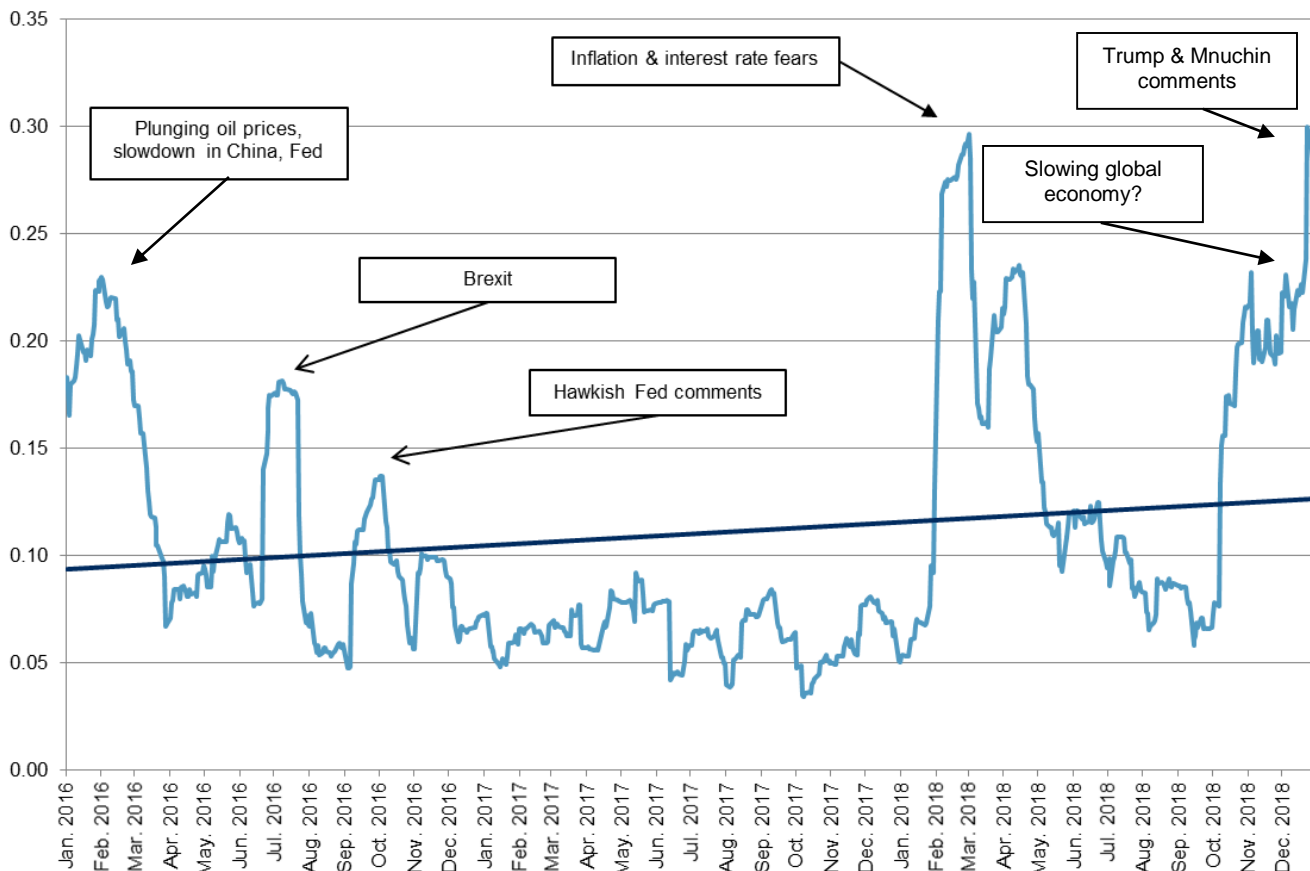
VOLATILITY

As noted above, elevated volatility, after a period of calm the prior year, was the topic of much discussion in 2018. The DJIA’s trailing 21-day realized volatility ended the year at 28.51, which was:

- Over four times higher than where it began the year (6.58)
- Nearly two times the average of 14.95 for the entire 12-month period
- Over four times the average for 2017 (6.39)
- Two times the historical average (14.90)

Realized volatility began the year at depressed levels but soon reared its head (see Exhibit 8)—driven by themes such as concerns about Fed rate increases, a trade spat with China, and political catalysts in the U.S. Things settled below trend in the summer and fall but popped again as the same concerns—Fed moves, a potentially slowing global economy, continued uncertainty about U.S./China trade, and unsuccessful attempts to calm markets—brought back the chop.

Exhibit 8: DJIA Trailing 21-Day Realized Volatility



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BEST AND WORST DAYS IN 2018

What's old is new again. The catalysts for large daily moves repeated themselves throughout the year: the return of volatility, the last legs (?) of a decade long bull market, tariffs and trade wars, interest rate increases, and unpredictable U.S. and global political climates.

Exhibit 9: The 10 Best Days (Points)

DATE	CLOSE	POINTS	RETURN (%)	CONTEXT
Dec. 26, 2018	22,878.45	1,086.24	4.98	The largest point gain in history, driven by positive retail numbers, recovered ground lost on the worst Christmas Eve ever.
March 26, 2018	24,202.60	669.40	2.84	The DJIA bounced back following a few weak days and after reports of U.S. & China attempts to avert the trade war.
Nov. 28, 2018	25,366.43	617.71	2.50	Markets posted strong gains after comments from the Fed's Powell led investors to believe rate hikes would soon end.
Feb. 6, 2018	24,912.77	567.02	2.33	Strange symmetry: the DJIA cratered 567 shortly after the open yet finished the volatile day up by the same amount.
Oct. 16, 2018	25,798.42	547.87	2.17	Strong earnings from blue chips—including DJIA members GS, JNJ, and UNH—kept the good economic news rolling.
Nov. 7, 2018	26,180.30	545.29	2.13	Investors cheered news that Democrats, as predicted, retook the U.S. House of Reps for the first time since 2010.
March 9, 2018	25,335.74	440.53	1.77	The DJIA climbed back over 25k as a strong jobs report factored more heavily than anxieties about steel tariffs.
Oct. 30, 2018	24,874.64	431.72	1.77	Stocks rallied in the waning days of an otherwise rough October; Trump implied a China trade deal would be reached.
April 10, 2018	24,408.00	428.89	1.79	Geopolitics again: markets reacted to a speech by Xi Jinping in which he said China would lower auto tariffs.
Feb. 12, 2018	24,601.27	410.37	1.70	Markets recovered on this Monday, following a brutal prior week when the DJIA lost 5.2% over interest rates & other fears.

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Exhibit 11: The 10 Worst Days (Points)

DATE	CLOSE	POINTS	RETURN (%)	CONTEXT
Feb. 5, 2018	24,345.75	-1,175.21	-4.60	Inflation concerns & potential Fed responses led the DJIA to post the first ever single session 1,000+ point decline.
Feb. 8, 2018	23,860.46	-1,032.89	-4.15	Three short days later, the DJIA posted yet another 1,000 point decline. Short story: volatility had returned.
Oct.10, 2018	25,598.74	-831.84	-3.15	Trade tensions and rising bond yields hit stocks hard, with tech stocks taking a special beating.
Dec. 4, 2018	25,027.07	-799.36	-3.10	Uh, never mind: stocks were hammered by trade war concerns mere days after feeling quite the opposite.
March 22, 2018	23,957.89	-724.41	-2.93	Take your pick: trade fears, Facebook backlash, interest rate increase anxieties, and Trump legal woes were all factors.
Feb. 2, 2018	25,250.96	-665.75	-2.54	Strong job #s led to bond yield increases, which led investors, already anxious about rates, to aggressively sell stocks.
Dec. 24, 2018	21,792.00	-653.17	-2.91	So much for holiday cheer: Trump's criticism of Powell + Mnuchin's attempts to calm markets had the reverse effect.
Oct. 24, 2018	24,583.42	-608.01	-2.41	Concerns about a slowing global economy & corporate earnings erased what remained of the DJIA's gains for the year.
Nov. 12, 2018	25,387.18	-602.11	-2.32	Stocks were again pressured by global growth concerns; tempering Saudi oil production + lower tech sales factored too.
April 6, 2018	23,932.76	-572.46	-2.34	A brewing trade war with China plus disappointing employment stats sent stocks markedly lower.

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Exhibit 12: The 10 Worst Days (Percent)

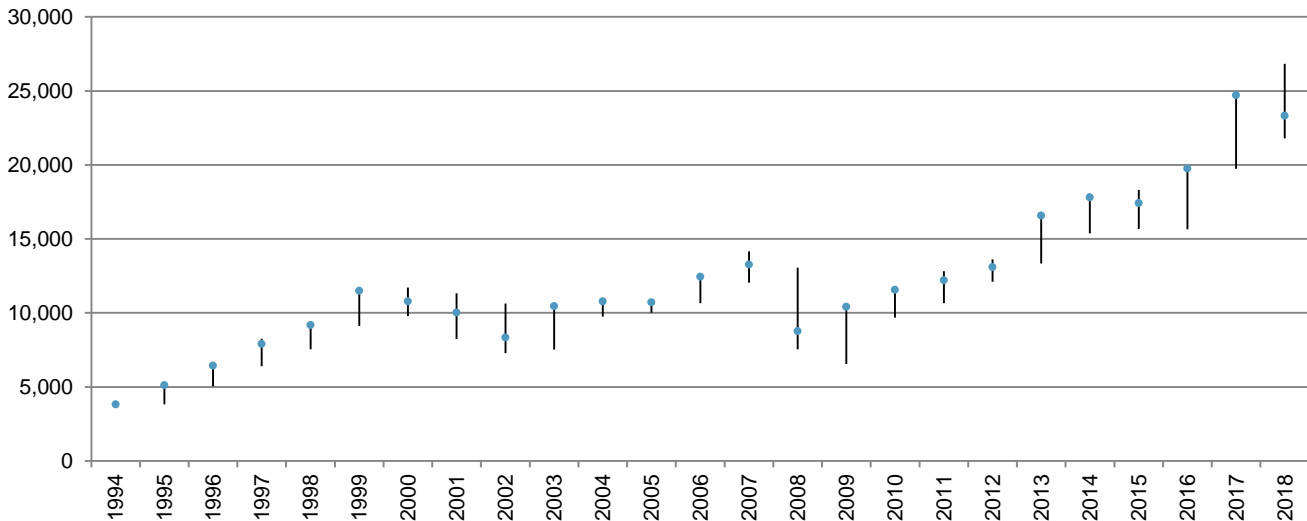
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HIGH, LOW, CLOSE

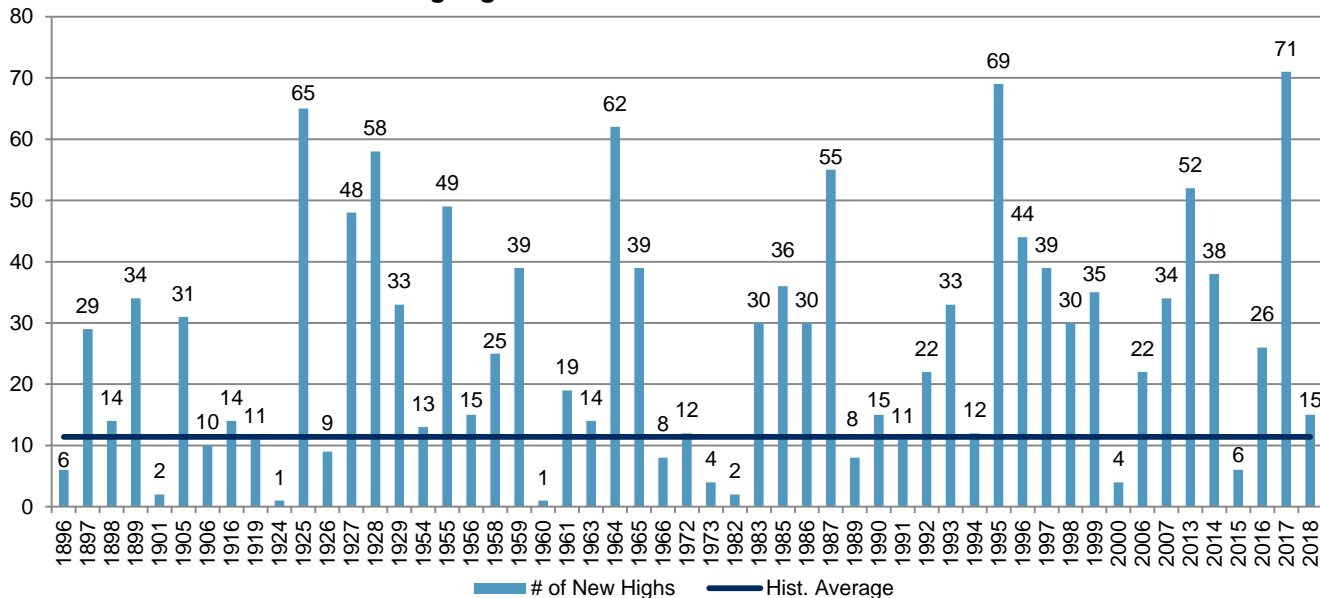
- The DJIA closed 2018 well off the high for the year (which was also the all-time high). At a level of 23,327.46, the Average was over 13% lower than the high of 26,828.39 reached on October 3. Things turned south for the markets shortly after that high was reached: on October 10, the Average fell over 3% on trade tensions and rising bond yields.
- The DJIA's 2018 close versus high was the worst since 2008 (i.e., the Great Financial Crisis), when the market was a full one-third lower at the end of the year.
- There were 15 new highs for the DJIA in 2018, far less than the standout 2017 total (71, an all-time high) but more than the annual average of ~11 since inception.

Exhibit 13: DJIA – High, Low, and Close



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 14: Number of New Closing Highs



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QUARTERLY PERFORMANCE

- The DJIA posted a pretty brutal return of -11.83% in Q4, the worst period since Q3 of 2011 when the European debt crisis weighed on investor sentiment and pushed the DJIA down 12.09%. That was also the worst Q4 since 2008, a period when the Average lost over 19% during the financial crisis.
- That performance stands in contrast to historical patterns. Since 1985, Q4 is the best-performing stretch of the year with an average return of nearly 5%. In fact, since 1985 there have been only 7 fourth quarters with a negative return (i.e., 7 / 44 years = 16% of observations).
- Every quarter of 2018 bucked the historical trend, but only Q3 did so favorably (and did so substantially). Q3 tends to have a negative return, but this year the period returned the best performance since the same period in 2010. Quarters 1, 2, and 4 lagged their historical average returns.

Exhibit 15: Quarterly Returns From 1985-2018

YEAR	Q1 (%)	Q2 (%)	Q3 (%)	Q4 (%)	ANNUAL (%)
2018	-2.49	0.70	9.01	-11.83	-5.63
2017	4.56	3.32	4.94	10.33	25.08
2016	1.49	1.38	2.11	7.94	13.42
2015	-0.26	-0.88	-7.58	7.00	-2.23
2014	-0.72	2.24	1.29	4.58	7.52
2013	11.25	2.27	1.48	9.56	26.50
2012	8.14	-2.51	4.32	-2.48	7.26
2011	6.41	0.77	-12.09	11.95	5.53
2010	4.11	-9.97	10.37	7.32	11.02
2009	-13.30	11.01	14.98	7.37	18.82
2008	-7.55	-7.44	-4.40	-19.12	-33.84
2007	-0.87	8.53	3.63	-4.54	6.43
2006	3.66	0.37	4.74	6.71	16.29
2005	-2.59	-2.18	2.86	1.41	-0.61
2004	-0.92	0.75	-3.40	6.97	3.15
2003	-4.19	12.43	3.22	12.71	25.32
2002	3.82	-11.16	-17.87	9.87	-16.76
2001	-8.42	6.31	-15.76	13.27	-7.10
2000	-5.00	-4.34	1.94	1.28	-6.18
1999	6.59	12.11	-5.78	11.22	25.22
1998	11.27	1.73	-12.39	17.07	16.10
1997	2.10	16.55	3.55	-0.47	22.64

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Exhibit 15: Quarterly Returns From 1985-2018 (cont.)					
YEAR	Q1 (%)	Q2 (%)	Q3 (%)	Q4 (%)	ANNUAL (%)
1996	9.19	1.21	4.02	9.62	26.01
1995	8.43	9.58	5.11	6.85	33.45
1994	-3.15	-0.30	6.02	-0.23	2.14
1993	4.06	2.36	1.11	5.60	13.72
1992	2.10	2.57	-1.41	0.90	4.17
1991	10.64	-0.24	3.78	5.04	20.32
1990	-1.67	6.41	-14.86	7.39	-4.34
1989	5.77	6.38	10.36	2.24	26.96
1988	2.54	7.73	-1.34	2.63	11.85
1987	21.56	4.94	7.35	-25.32	2.26
1986	17.58	4.08	-6.61	7.26	22.58
1985	4.56	5.42	-0.51	16.41	27.66
Average	3.07	2.77	-0.21	4.80	10.62

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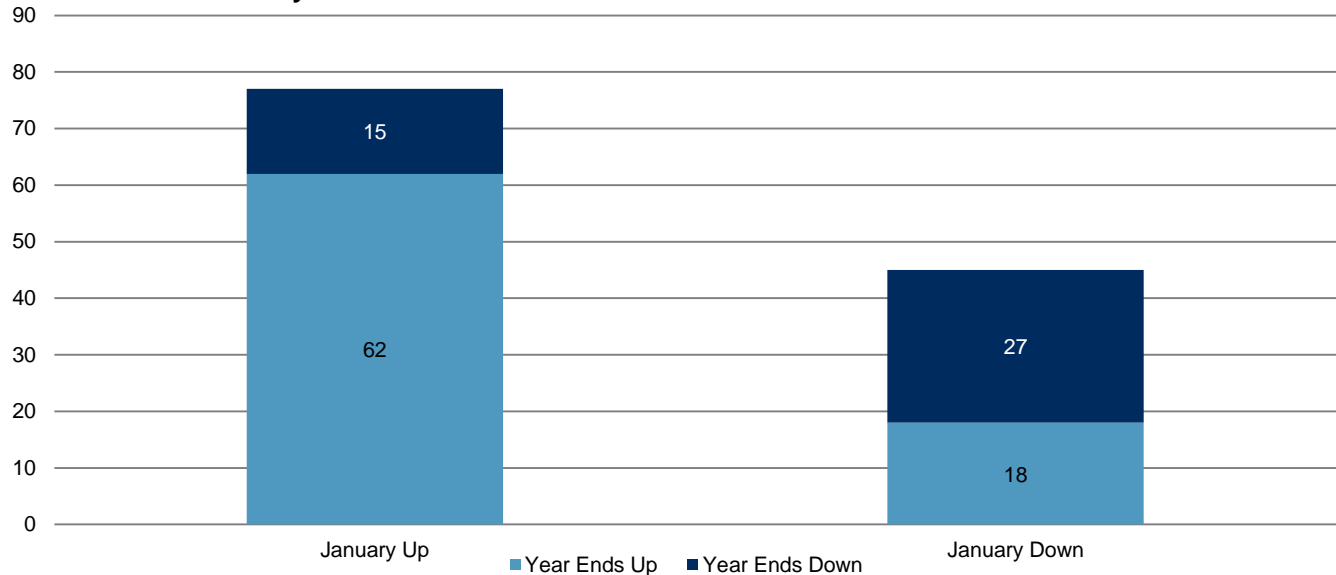
SO GOES JANUARY(?)

There is an equity market phenomenon—commonly known as the January Barometer—that says returns in January can provide an indication of how the markets will perform for the full year. At least partially predicated on the momentum factor, the notion is that if stocks are up during the opening month, then the trend will persist and result in an up year.

Whatever the drivers, there is support for the idea: when the DJIA was up in January, a positive full year occurred with over 80% frequency (62 of 77 instances). Alas, last year was one of the exceptions—despite a healthy return of 5.79% in January 2018, the DJIA ended the year down almost the same amount.

The reverse, however, is a less reliable indicator. When the DJIA was *down* in January, the year ended in negative territory only 60% of the time (27 of 45 instances).

Exhibit 16: The January Barometer



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

1H VERSUS 2H COMPARISONS

- The DJIA fell 3.89% in 2H 2018, the worst second half since 2008 when the Average dropped nearly 23% from July to December.
- The fall accelerated from 1H when the Average tumbled 1.81%—this was the worst first half since 2010.
- From 1897—the first full year following the DJIA's inception in May 1896—through 2018, the average first half return was 3.18%; the average second half return was 4.14%.
- Since inception, negative performance in both 1H and 2H has occurred in only 20 of 122 full years.

Exhibit 17: 1H Versus 2H Performance Comparisons

YEAR	1H (%)	2H (%)	FULL YEAR (%)	YEAR	1H (%)	2H (%)	FULL YEAR (%)
1896	-	-	-	1957	0.76	-13.43	-12.77
1897	9.02	12.04	22.15	1958	9.75	22.06	33.96
1898	6.50	15.01	22.49	1959	10.27	5.56	16.40
1899	16.29	-6.11	9.19	1960	-5.70	-3.86	-9.34
1900	-16.87	28.73	7.01	1961	11.05	6.90	18.71
1901	10.22	-17.17	-8.70	1962	-23.23	16.18	-10.81
1902	-0.39	-0.03	-0.42	1963	8.40	7.93	17.00
1903	-8.10	-16.88	-23.61	1964	8.98	5.13	14.57
1904	0.29	41.34	41.74	1965	-0.70	11.66	10.88
1905	10.43	25.15	38.20	1966	-10.23	-9.70	-18.94
1906	-9.55	8.44	-1.92	1967	9.49	5.21	15.20
1907	-14.83	-26.89	-37.73	1968	-0.81	5.12	4.27
1908	23.56	18.68	46.64	1969	-7.48	-8.34	-15.19
1909	7.12	7.34	14.97	1970	-14.60	22.73	4.82
1910	-18.04	0.22	-17.86	1971	6.22	-0.11	6.11
1911	5.68	-5.00	0.39	1972	4.36	9.79	14.58
1912	11.31	-3.35	7.58	1973	-12.58	-4.58	-16.58
1913	-14.77	5.19	-10.34	1974	-5.69	-23.20	-27.57
1914	2.39	-32.33	-30.72	1975	42.64	-3.02	38.32
1915	28.36	40.17	79.92	1976	17.64	0.19	17.86
1916	-8.78	6.05	-3.26	1977	-8.79	-9.29	-17.27
1917	0.92	-22.42	-21.71	1978	-1.47	-1.70	-3.15
1918	11.16	-0.58	10.51	1979	4.59	-0.38	4.19
1919	30.15	0.23	30.45	1980	3.48	11.07	14.93
1920	-15.36	-20.72	-32.90	1981	1.34	-10.43	-9.23
1921	-4.86	18.48	12.72	1982	-7.21	28.90	19.60
1922	14.59	6.24	21.74	1983	16.76	3.00	20.27

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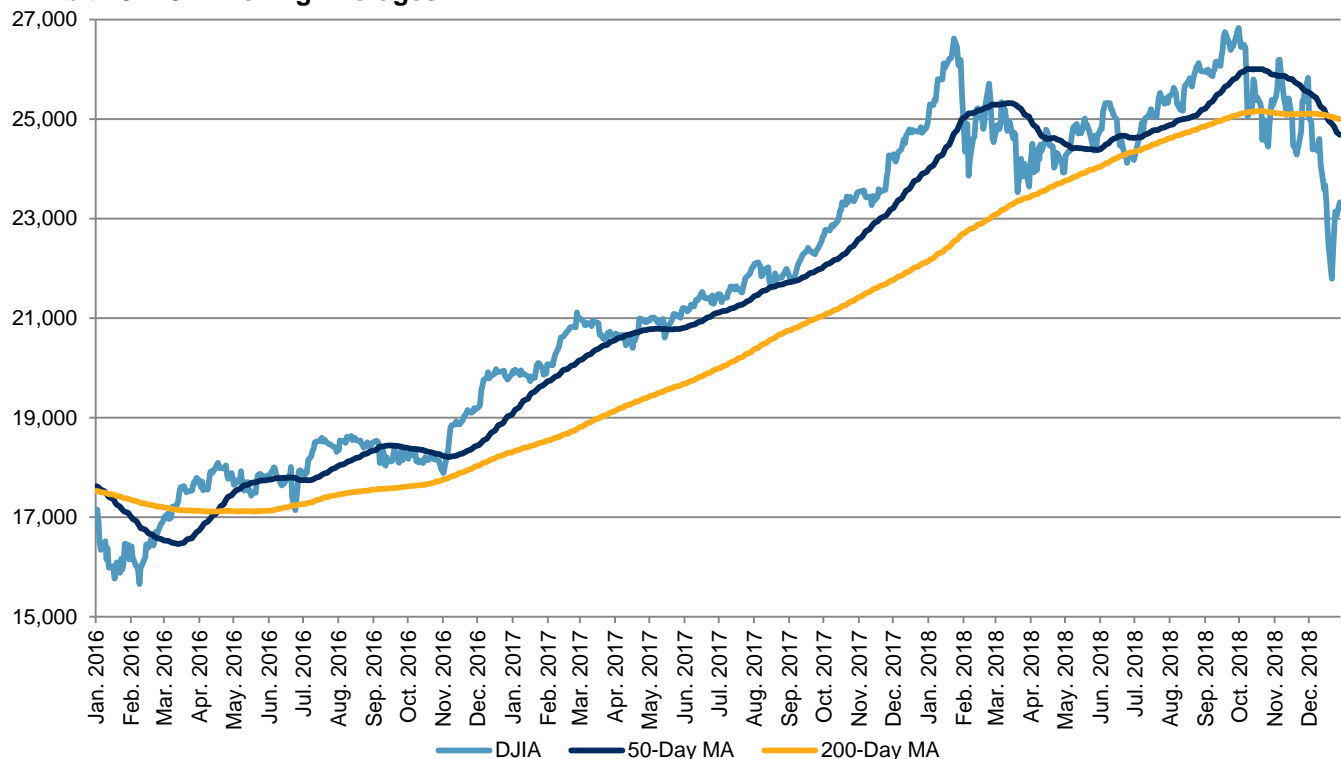
Exhibit 17: Performance Comparison (cont.)							
YEAR	1H (%)	2H (%)	FULL YEAR (%)	YEAR	1H (%)	2H (%)	FULL YEAR (%)
1923	-11.02	8.73	-3.25	1984	-10.03	6.99	-3.74
1924	0.89	25.05	26.16	1985	10.23	15.82	27.66
1925	8.71	19.58	30.00	1986	22.37	0.17	22.58
1926	-2.31	2.72	0.34	1987	27.56	-19.83	2.26
1927	5.74	21.76	28.75	1988	10.46	1.25	11.85
1928	4.03	42.48	48.22	1989	12.52	12.83	26.96
1929	11.26	-25.56	-17.17	1990	4.63	-8.58	-4.34
1930	-8.91	-27.29	-33.77	1991	10.37	9.02	20.32
1931	-8.75	-48.13	-52.67	1992	4.72	-0.52	4.17
1932	-45.01	39.89	-23.07	1993	6.51	6.77	13.72
1933	63.76	1.79	66.69	1994	-3.44	5.78	2.14
1934	-4.18	8.69	4.14	1995	18.82	12.31	33.45
1935	13.62	21.93	38.53	1996	10.50	14.04	26.01
1936	9.41	14.08	24.82	1997	18.99	3.07	22.64
1937	-5.88	-28.63	-32.82	1998	13.20	2.56	16.10
1938	10.78	15.60	28.06	1999	19.49	4.80	25.22
1939	-15.59	15.01	-2.92	2000	-9.13	3.24	-6.18
1940	-18.88	7.60	-12.72	2001	-2.64	-4.58	-7.10
1941	-6.09	-9.89	-15.38	2002	-7.77	-9.75	-16.76
1942	-6.87	15.54	7.61	2003	7.72	16.34	25.32
1943	20.08	-5.22	13.81	2004	-0.18	3.33	3.15
1944	9.19	2.66	12.09	2005	-4.71	4.31	-0.61
1945	8.51	16.71	26.65	2006	4.04	11.77	16.29
1946	6.59	-13.82	-8.14	2007	7.59	-1.07	6.43
1947	0.06	2.18	2.23	2008	-14.44	-22.68	-33.84
1948	4.58	-6.42	-2.13	2009	-3.75	23.45	18.82
1949	-5.57	19.54	12.88	2010	-6.27	18.45	11.02
1950	4.49	12.58	17.63	2011	7.23	-1.59	5.53
1951	3.07	10.96	14.37	2012	5.42	1.74	7.26
1952	1.87	6.43	8.42	2013	13.78	11.18	26.50
1953	-8.10	4.71	-3.77	2014	1.51	5.92	7.52
1954	18.74	21.25	43.96	2015	-1.14	-1.10	-2.23
1955	11.62	8.20	20.77	2016	2.90	10.22	13.42
1956	0.90	1.36	2.27	2017	7.68	15.78	25.08
				2018	-1.81	-3.89	-5.63

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

MOVING AVERAGES

- The DJIA ended 2018 well below both the 50-day and 200-day simple moving averages (SMAs).
- Versus the 50-day SMA:
 - The first dip below the 50-day occurred after the first 1,000 point drop in history (February 5). Those effects were generally felt until early May with yet another dip in June.
 - After that, an upward trend kept the DJIA around the 50-day until October 10 when trade tensions, bond yields, and a tech stock slump hit the average hard. From there, the DJIA traded below the 50-day for most of the remainder of the year.
- Versus the 200-day SMA:
 - The DJIA first fell below the 200-day in late June—White House threats of a trade war, ostensibly directed against EU trading partners—were to blame. Markets recovered fairly quickly, however.
 - The barrier was breached briefly a few more times in the succeeding months—typically followed quickly by recovery—but then fell below the level in earnest on December 4 and remained there for the rest of the trading year.
- A “death cross”—when the short-term average falls below the long-term average, an event considered a sell signal in technical analysis circles—occurred on December 20 when the DJIA fell 460+ points (-1.99%) due to a Fed rate hike. The last cross—in that case, a “golden cross,” when the 50-day SMA trades above the 200-day SMA and considered by techies to be a buy signal—occurred in the spring of 2016.

Exhibit 18: DJIA Moving Averages



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

1,000 POINT MILESTONES

- Two new 1,000 point milestones were passed in 2018, both in January.
- With five new 1,000 point milestones (20k, 21k, 22k, 23k, and 24k), 2017 was the most active such period on record. Similarly, the speed with which the DJIA crossed these thresholds was notable: it took only 257 trading days to run through those five marks.
- Related: 2014, 2013, 2007, 1999, 1997, and 1995 each posted two 1,000 point milestones.
- The climb from inception to the first 1,000 points—clocking in at 21,653 trading days—took nearly twice as long to reach as all of the subsequent milestones.
- Caveats: first, round numbers are an interesting curiosity but are otherwise arbitrary accomplishments; and second, it's important to note that as the DJIA gains in value each successive 1,000 point milestone represents a smaller percentage gain.

Exhibit 19: DJIA 1,000 Point Milestones

MILESTONE	DATE	DJIA LEVEL	TRADING DAYS FROM PRIOR MILESTONE
Inception	May 26, 1896	40.04	NA
1,000	Nov. 14, 1972	1,003.16	21,653
2,000	Jan. 8, 1987	2,002.25	3,573
3,000	April 17, 1991	3,004.46	1,077
4,000	Feb. 23, 1995	4,003.33	971
5,000	Nov. 21, 1995	5,023.55	187
6,000	Oct. 14, 1996	6,010.00	226
7,000	Feb. 13, 1997	7,022.43	84
8,000	July 16, 1997	8,038.99	105
9,000	April 6, 1998	9,033.22	182
10,000	March 29, 1999	10,006.78	245
11,000	May 3, 1999	11,014.69	24
12,000	Oct. 19, 2006	12,011.73	1,879
13,000	April 25, 2007	13,089.89	127
14,000	July 19, 2007	14,000.41	59
15,000	May 7, 2013	15,056.20	1,460
16,000	Nov. 21, 2013	16,009.99	139
17,000	July 3, 2014	17,068.26	153
18,000	Dec. 23, 2014	18,024.17	120
19,000	Nov. 22, 2016	19,023.87	483
20,000	Jan. 25, 2017	20,068.51	42
21,000	March 1, 2017	21,115.55	24
22,000	Aug. 2, 2017	22,016.24	107
23,000	Oct. 18, 2017	23,157.60	54
24,000	Nov. 30, 2017	24,272.35	30
25,000	Jan. 4, 2018	25,075.13	23
26,000	Jan. 17, 2018	26,115.65	8
27,000	???	???	???

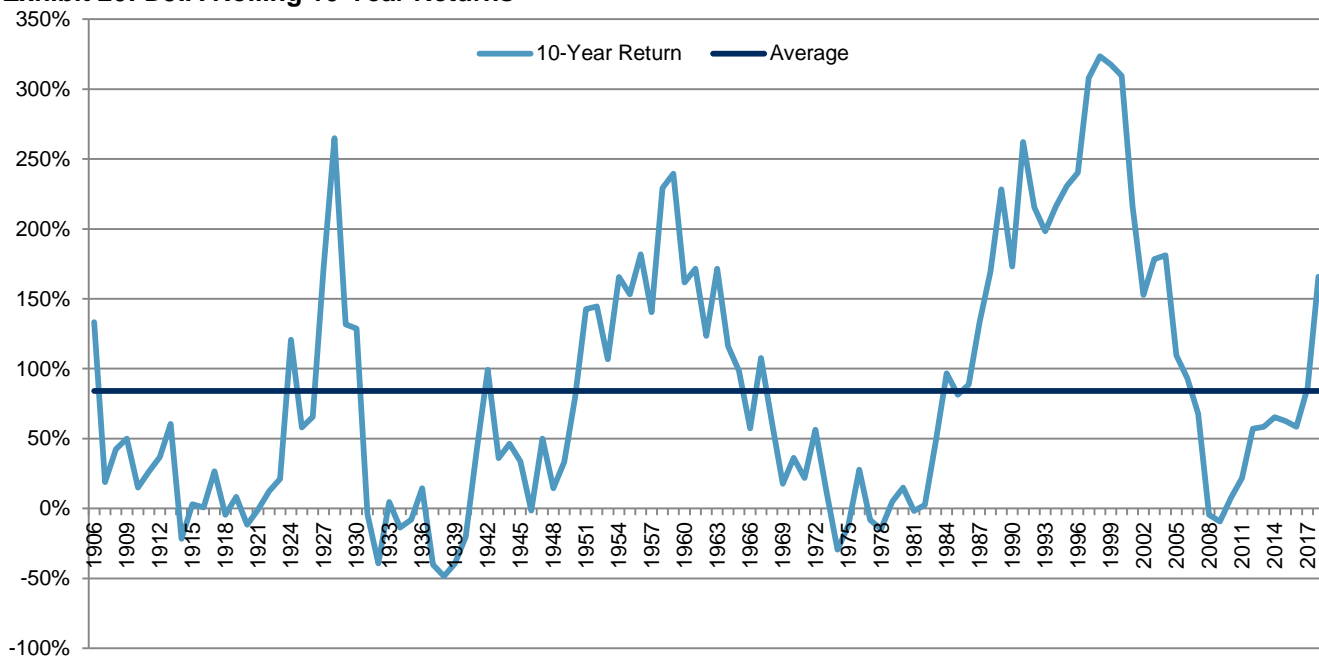
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

ROLLING 10-YEAR RETURNS

With the close on Monday, Dec. 31, 2018, the DJIA logged a 10-year (price) return of a whopping 165.80%. How does this compare with past performance? Referencing Exhibit 19, which shows the rolling 10-year returns in the Average, we can divine the following:

- Since inception, the DJIA has an average 10-year return of 84.14%.
- As noted, however, despite this year’s negative performance (down 5.63%) the 10-year return is a whopping 165%. How is that possible? Well, there is a “bigly” caveat: this most recent 10-year period began after the DJIA got smoked during the financial crisis. Since then, the DJIA has risen from ~8,800 to over 23,000. Accordingly, this is an outlier period and not terribly indicative of historical trends; a full two-thirds of these observations fall below the historical 10-year average.
- Thus far, there have been 113 total decade-long observations. Of these, 92 have shown positive returns, while 21 have experienced declines. In other words, the DJIA has experienced a positive 10-year return in over 81% of observed instances. The average UP period is 105.82%; the average DOWN period is -16.66%
- The best-performing 10-year period was from 1989-1998 when the DJIA returned 323.39%, with the final years of the tech boom driving the markets higher.
- The worst-performing period was from 1929-1938, as the U.S. suffered the effects of the 1929 market crash and The Great Depression. During this time, the DJIA fell 48.41%.

Exhibit 20: DJIA Rolling 10-Year Returns



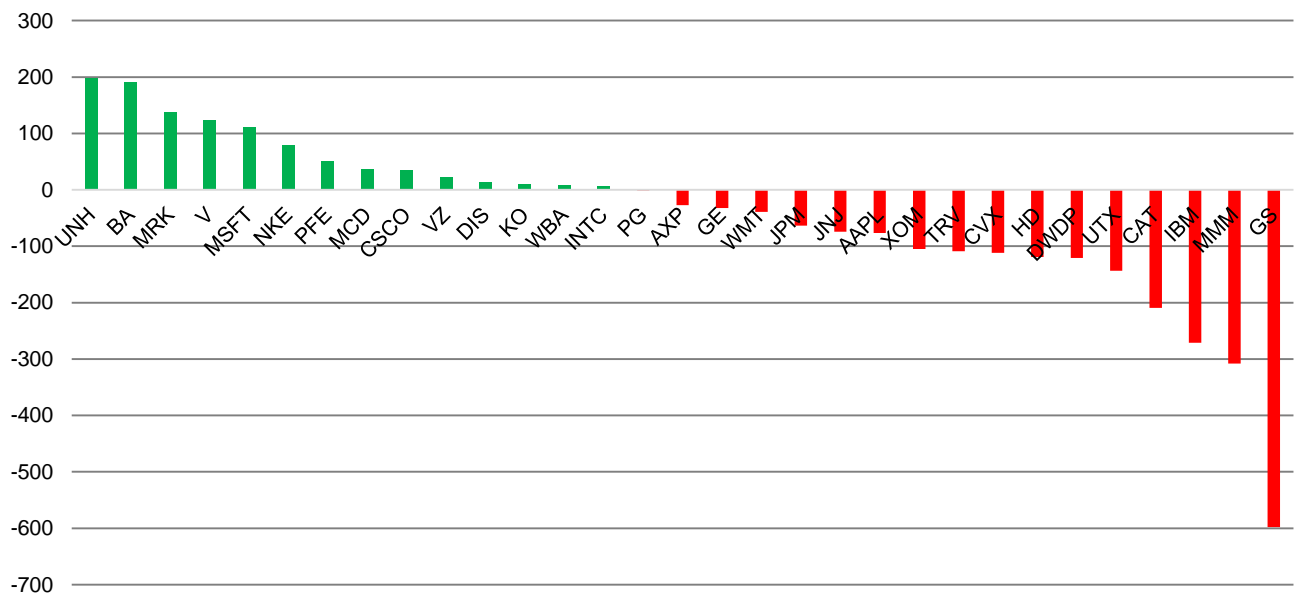
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

POINT CONTRIBUTION

By Stock

- In 2018, 14 stocks made positive contributions while 17 drew points away. Yes, 14+17=31, more than the DJIA’s requisite 30 blue-chip names. But remember that General Electric (GE) was replaced by Walgreen Boots Alliance (WBA) as of the opening on June 26—we need to include GE’s performance (a detraction, by the way) to fully account for the movement of the Average.
- UnitedHealth Group (UNH) was the biggest contributor to the DJIA’s advance, adding over 197 points. Boeing (BA) and Merck (MRK) were in the #2 and #3 spots, respectively.
- Goldman Sachs (GS) was the worst performer in 2018, responsible for bleeding nearly 600 points from the DJIA, almost two times more than the next worst name; 3M (MMM) and IBM (IBM, duh) were the second and third worst performers.
- Lastly, let’s dwell on GE for a moment. As many will recall, until its June deletion, General Electric was the last remaining original DJIA component. GE was not, however, a component for the full life of the Average. It was dropped late in the 19th century but reintroduced a few years later. As for the most recent deletion, David Blitzer, Chairman of the S&P DJI Index Committee, put it this way: "General Electric was an original member of the DJIA in 1896 and a member continuously since 1907. Since then the U.S. economy has changed: consumer, finance, health care and technology companies are more prominent today and the relative importance of industrial companies is less. Walgreens is a national retail drug store chain offering prescription and non-prescription drugs, related health services, and general goods. With its addition, the DJIA will be more representative of the consumer and health care sectors of the U.S. economy. Today’s change to the DJIA will make the index a better measure of the economy and the stock market."

Exhibit 21: DJIA Points by Company (2018)



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 22: Points by Company by Month

SYMBOL	NAME	SECTOR	2017 CLOSE (\$)	2018 CLOSE (\$)	CHANGE (%)	Q1	Q2	Q3	Q4	TOTAL
UNH	Unitedhealth Group Inc	Health Care	220.46	249.12	13.00	-44.48	216.35	140.36	-114.73	197.50
BA	Boeing Co	Industrials	294.91	322.50	9.36	227.01	52.08	246.74	-334.96	190.88
MRK	Merck & Co Inc	Health Care	56.27	76.41	35.79	-12.39	42.94	69.43	37.09	137.06
V	Visa Inc	Information Technology	114.02	131.94	15.72	38.56	88.18	119.61	-123.07	123.28
MSFT	Microsoft Corp	Information Technology	85.54	101.57	18.74	39.45	50.52	106.86	-86.79	110.04
NKE	NIKE Inc B	Consumer Discretionary	62.55	74.14	18.53	26.78	90.39	34.17	-71.74	79.61
PFE	Pfizer Inc	Health Care	36.22	43.65	20.51	-5.03	5.45	52.82	-2.85	50.40
MCD	McDonald's Corp	Consumer Discretionary	172.12	177.57	3.17	-108.38	2.46	71.87	69.70	35.66
CSCO	Cisco Systems Inc	Information Technology	38.30	43.33	13.13	31.60	0.89	38.11	-36.07	34.52
VZ	Verizon Communications Inc	Telecommunication Services	52.93	56.22	6.22	-35.18	17.07	20.88	19.19	21.96
DIS	Walt Disney Co	Consumer Discretionary	107.51	109.65	1.99	-48.68	30.05	82.25	-49.43	14.19
KO	Coca-Cola Co	Consumer Staples	45.88	47.35	3.20	-16.87	2.93	15.80	7.87	9.73
WBA	Walgreen Boots Alliance *	Consumer Staples	67.24	68.33	1.62	NA	-48.99	87.37	-30.99	7.39
INTC	Intel Corp	Information Technology	46.16	46.93	1.67	40.76	-16.21	-16.41	-2.44	5.70
PG	Procter & Gamble	Consumer Staples	91.88	91.92	0.04	-86.76	-8.43	35.06	58.92	-1.21
AXP	American Express Co	Financials	99.31	95.32	-4.02	-41.52	32.56	57.57	-75.74	-27.14
GE	General Electric Co *	Industrials	17.45	12.75	-26.93	-27.34	-5.03	NA	NA	-32.36
WMT	Wal-Mart Stores	Consumer Staples	98.75	93.15	-5.67	-67.34	-22.77	56.01	-5.15	-39.26
JPM	JP Morgan Chase & Co	Financials	106.94	97.62	-8.72	20.86	-39.67	58.58	-103.20	-63.42
JNJ	Johnson & Johnson	Health Care	139.72	129.05	-7.64	-79.66	-46.76	114.12	-61.84	-74.15
AAPL	Apple Inc.	Information Technology	169.23	157.74	-6.79	-9.98	119.02	275.49	-461.08	-76.55
XOM	Exxon Mobil Corp	Energy	83.64	68.19	-18.47	-62.18	55.60	15.53	-114.12	-105.17
TRV	Travelers Cos Inc	Financials	135.64	119.75	-11.71	22.17	-113.60	49.97	-67.53	-108.99
CVX	Chevron Corp	Energy	125.19	108.79	-13.10	-76.77	84.91	-28.14	-91.47	-111.47
HD	Home Depot Inc	Consumer Discretionary	189.53	171.82	-9.34	-77.74	116.22	81.71	-239.56	-119.36
DWDP	DowDupont Inc.	Materials	71.22	53.48	-24.91	-51.71	15.22	-10.92	-73.43	-120.84
UTX	United Technologies Corp	Industrials	127.57	106.48	-16.53	-12.05	-5.48	100.22	-226.00	-143.31
CAT	Caterpillar Inc	Industrials	157.58	127.07	-19.36	-70.23	-80.53	114.05	-172.36	-209.08
IBM	Intl Business Machines Corp	Information Technology	153.42	113.67	-25.91	0.07	-94.63	78.04	-254.54	-271.06
MMM	3M Co	Industrials	235.37	190.54	-19.05	-109.13	-157.08	94.86	-136.76	-308.12
GS	Goldman Sachs Group Inc	Financials	254.76	167.05	-34.43	-19.97	-215.34	24.88	-387.78	-598.21
TOTAL						-616.11	168.30	2186.90	-3130.85	-1391.76

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes. * The "Close '18" value for GE reflects the price as of June 25, 2018 when GE was removed from the DJIA; similarly, the "Close '17" value for WBA reflects the price as of June 25, 2018 after which WBA was added to the DJIA.

By Sector

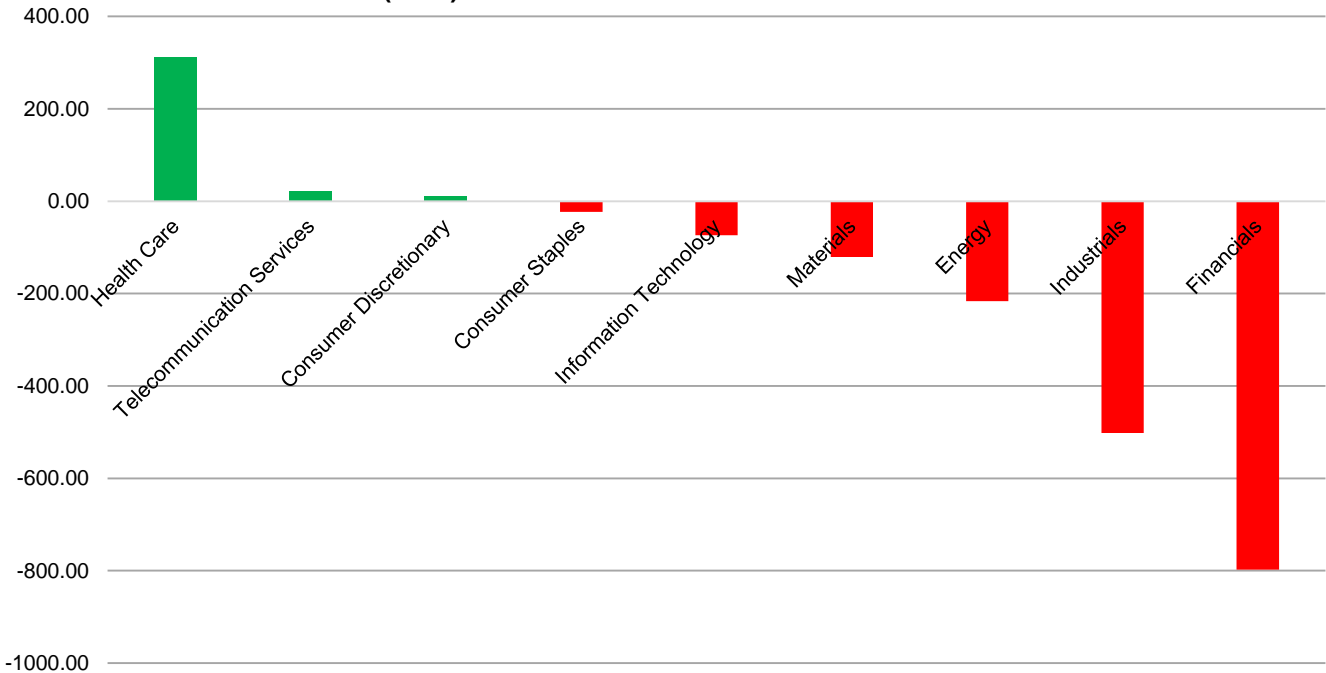
- The Healthcare sector was the largest contributor in 2018, followed by Telecommunication Services and Consumer Discretionary. In fact, those were the only three sectors to make positive contributions; and to be fair, Healthcare really carried what positive performance there was as Telecom and Discretionary together only added a little over 30 points.
- To the downside, Financials was the worst performer, followed by Industrials and Energy.
- Information Technology had a good run from Q1 through Q3 and, in fact, was the only sector to post gains every quarter. But it suffered as the growth engine sputtered in Q4. Tech was the worst-performing sector that period (points wise) though the pain was fairly widespread.

Exhibit 23: DJIA Sector Points by Quarter (2018)

SECTOR	Q1	Q2	Q3	Q4	TOTAL
Health Care	-141.56	217.98	376.73	-142.32	310.82
Telecommunication Services	-35.18	17.07	20.88	19.19	21.96
Consumer Discretionary	-208.01	239.13	270.00	-291.02	10.10
Consumer Staples	-170.97	-77.26	194.23	30.65	-23.35
Information Technology	140.46	147.75	601.71	-963.99	-74.07
Materials	-51.71	15.22	-10.92	-73.43	-120.84
Energy	-138.95	140.51	-12.61	-205.59	-216.64
Industrials	8.26	-196.04	555.87	-870.08	-501.99
Financials	-18.45	-336.06	191.01	-634.25	-797.76
Total	-616.11	168.30	2186.90	-3130.85	-1391.76

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 24: DJIA Sector Points (2017)



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 25: By Sector, by Year Points Contribution									
2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Information Technology 637.36	Industrials 483.61	Consumer Discretionary 231.14	Financials 303.63	Industrials 1072.69	Financials 499.69	Consumer Discretionary 615.06	Financials 640.80	Industrials 1817.26	Health Care 310.82
Industrials 484.01	Consumer Discretionary 194.55	Energy 202.76	Industrials 183.42	Financials 704.10	Consumer Discretionary 350.64	Health Care 73.74	Industrials 532.80	Consumer Discretionary 830.21	Telecomm Services 21.96
Financials 273.30	Energy 145.47	Information Technology 150.53	Consumer Discretionary 153.16	Consumer Discretionary 467.77	Health Care 295.60	Telecomm Services -4.55	Health Care 418.71	Information Technology 811.55	Consumer Discretionary 10.10
Consumer Discretionary 100.65	Consumer Staples 130.91	Consumer Staples 138.20	Consumer Staples 147.96	Health Care 426.34	Consumer Staples 114.19	Materials -28.00	Information Technology 348.89	Health Care 590.31	Consumer Staples -23.35
Materials 100.55	Materials 117.21	Health Care 72.05	Health Care 69.84	Energy 225.53	Industrials 107.38	Financials -70.12	Energy 274.28	Financials 512.36	Information Technology -74.07
Health Care 79.99	Financials 55.19	Telecomm Services 39.36	Telecomm Services 49.64	Consumer Staples 214.47	Materials 57.60	Consumer Staples -234.14	Consumer Staples 75.26	Consumer Staples 287.37	Materials -120.84
Consumer Staples 58.48	Telecomm Services 44.34	Industrials -42.00	Energy 26.40	Information Technology 164.55	Information Technology -15.51	Energy -243.17	Telecomm Services 49.03	Materials 103.58	Energy -216.64
Telecomm Services -12.87	Information Technology 6.36	Financials -69.93	Materials -6.56	Materials 143.62	Telecomm Services -25.24	Industrials -244.55	Materials 46.57	Energy 6.88	Industrials -501.99
Energy -69.81	Health Care -28.18	Materials -82.04	Information Technology -40.90	Telecomm Services 53.45	Energy -137.94	Information Technology -262.31	Consumer Discretionary -48.76	Telecomm Services -2.90	Financials -797.76

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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