2019 CRESTMONT RESEARCH STOCK MARKET MATRIX

S&P 500 INDEX ONLY

NOMINAL RETURNS

Nominal Returns (not inflation adjusted), without dividends, transaction costs, or taxes

COMPONENTS	
Index	Included
Dividends	Not Included
Transaction Costs	Not Included
Taxes	Not Included (Deferred)
Inflation	Nominal (Not Inflation Adjusted)

LEGEND			
Red		<	0.0%
Pink	0.0%	-	3.0%
Blue	3.0%	-	7.0%
Light Green	7.0%	-	10.0%
Dark Green		>	10.0%

White Numbers: Decreasing P/E Ratio

2019 MATRIX: AVERAGE ANNUAL DATA

NOTES:

1) Numbers reflect the percentage annual rate of return from the starting period to the ending period
2) Returns include index returns & exclude dividends, transaction costs/fees (bid/ask spread, commissions, fees, etc.), and taxes; nominal returns include inflation (see assumptions)
3) Red: <0%; Pink: 0% - 3%; Blue: 3% - 7%; Light Green: 7% - 10%; Dark Green: >10%
4) Black type reflects P/E ratio increasing over the period; White type reflects P/E ratio decreasing over the period
5) The black diagonal line reflects the boundary of 20-year periods
6) S&P 500 & P/E reflect the methodology popularized by Robert Shiller with average daily index annually and other related data (P/E10)
7) Other data and information developed from various sources and believed to be reliable

CRESTMONT RESEARCH

Copyright 2002-2020, Crestmont Research
(www.CrestmontResearch.com)

TO	19	23	22	18	16	19	19	13	13	15	14	14	14	12	11	11	12	9	6	7	5	5	8	8	8	10	10	12	16	22	28	21	15	8	11	12	13	19	18	14	16	15	12	9	11	11	13	14	11	11	10	11	12	12	12	14	18	18	16	16	15	18	17	20	19	20	23
FROM	6	8	8	7	7	9	10	8	8	10	9	9	10	9	8	8	9	8	8	9	8	7	8	9	9	9	11	13	15	20	26	21	14	7	9	10	11	15	15	11	12	11	10	9	12	12	15	17	15	16	15	18	22	24	25	30	40	47	44	46	57	56	66	62	70	81
P/E S&P500 Yr: 19	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
18.6 6 1900	28	17	5	3	8	8	4	3	5	4	4	4	3	2	2	3	2	1	2	1	1	1	1	2	2	3	3	4	5	4	3	0	1	1	2	3	3	2	2	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4
22.7 8 1901		7	-4	-3	3	4	0	0	3	2	2	2	1	0	0	1	1	0	1	0	-1	0	0	1	1	2	3	4	4	3	2	0	0	1	1	2	2	1	1	1	1	0	1	1	2	2	1	1	1	2	2	2	2	3	3	3	3	3	3	3	4	3	4	3	4	4
22.0 8 1902			-14	-8	2	3	-1	-1	2	1	1	1	0	0	0	1	0	-1	0	0	-1	0	0	0	1	2	2	3	4	3	2	-1	0	0	1	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	4	3	4	4
17.6 7 1903				-2	12	10	2	2	5	4	3	3	2	1	1	2	1	0	1	1	0	1	1	1	2	2	3	4	5	4	2	0	1	1	1	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	2	3	3	4	3	3	3	4	4	4	4	4	4
16.3 7 1904					27	17	4	2	7	5	4	4	2	1	2	2	1	0	1	1	1	0	1	1	1	2	3	3	4	5	4	2	0	1	1	1	2	2	1	2	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	4	4	4
19.3 9 1905						7	-7	-5	2	1	0	1	-1	-1	-1	0	0	-1	0	-1	-2	0	0	0	1	2	2	4	5	3	2	-1	0	0	1	2	2	1	1	1	0	0	1	1	1	2	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	4	3	4	3
18.7 10 1906							-19	-10	0	-1	-1	0	-2	-2	-2	0	-1	-2	-1	-1	-2	-1	-2	-1	0	1	2	3	4	3	1	-1	0	0	0	2	2	1	1	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	4	3	4	4
13.4 8 1907								-1	11	6	4	4	1	0	1	2	1	0	1	0	-1	0	1	1	2	3	3	5	6	4	2	0	1	1	1	2	2	1	1	1	1	0	1	1	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4
13.1 8 1908									25	10	6	5	2	0	1	2	1	0	1	0	-1	1	1	1	2	3	4	5	6	5	2	0	1	1	1	2	2	1	1	1	1	0	1	1	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	4	4	4
14.9 10 1909										-4	-2	-1	-3	-4	-3	0	-2	-3	-1	-1	-2	-3	-1	-1	0	1	2	3	4	5	4	2	-1	0	0	0	2	2	1	1	0	0	0	0	1	1	2	1	1	1	2	2	2	2	2	3	3	3	3	3	3	3	4	3	4	4
13.5 9 1910											-1	1	-3	-4	-2	0	-1	-3	-1	-1	-2	-3	-1	-1	0	1	2	3	4	6	4	2	-1	0	0	1	2	2	1	1	1	0	0	1	1	1	2	1	1	1	2	2	2	2	3	3	4	3	3	3	4	4	4	4	4	4
14.2 9 1911												3	-4	-5	-3	0	-1	-3	-1	-1	-2	-3	-1	-1	0	1	2	3	5	6	4	2	-1	0	0	1	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	2	2	2	2	3	3	4	3	3	4	4	4	4	4	4
13.7 10 1912													-11	-9	-4	0	-2	-4	-1	-1	-2	-4	-1	-1	0	1	2	3	5	6	4	2	-2	0	0	0	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	2	2	2	2	3	3	4	3	3	4	4	4	4	4	4
11.9 9 1913														-7	-1	4	0	-2	1	-1	-3	0	0	1	2	3	4	6	7	5	3	-1	0	1	1	3	3	1	1	1	1	0	1	1	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5
11.1 8 1914															5	9	2	-1	2	0	-2	1	1	1	3	4	5	7	8	6	3	-1	1	1	1	3	3	2	2	1	1	0	1	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	4	5	4	5	5
11.5 8 1915																14	1	-3	1	-1	-3	0	0	1	3	4	5	7	8	6	3	-1	0	1	1	3	3	1	2	1	1	0	1	1	2	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	5	4	5	5
12.0 9 1916																	-10	-11	-2	-4	-6	-2	-1	-1	2	3	4	6	8	6	2	-2	0	0	1	2	2	1	1	1	0	0	1	1	2	2	2	2	1	2	2	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5
8.8 8 1917																		-11	2	-2	-5	0	0	1	3	4	6	8	10	7	3	-1	0	1	1	3	3	1	2	1	1	0	1	1	2	2	2	2	2	2	3	3	3	3	4	4	4	4	5	4	5	5	5	5	5
6.4 8 1918																			16	3	-3	3	3	3	6	7	8	10	12	9	5	-1	1	2	2	4	4	2	2	2	1	1	2	2	3	3	2	2	2	3	3	4	3	4	5	5	5	5	5	5	5	5	5	5	5	5
6.5 9 1919																				-9	-12	-1	-1	1	4	5	7	10	11	8	4	-2	0	1	1	3	3	1	2	1	1	0	1	1	2	2	2	2	2	2	3	3	3	3	4	4	5	4	4	5	5	5	5	5	5
5.3 8 1920																					-14	3	2	3	7	8	10	12	14	10	5	-1	1	2	2	4	4	2	2	2	1	0	2	2	3	3	2	2	2	3	3	3	4	3	4	5	5	5	5	5	5	5	5	5	5	5
5.4 7 1921																						23	12	10	13	13	14	16	18	13	7	0	2	3	3	6	5	3	3	3	2	1	2	3	3	4	3	3	3	3	4	4	4	5	5	6	5	5	6	6	6	6	6	6	5
7.5 8 1922																							2	4	10	11	13	15	18	12	6	-2	1	1	2	4	4	2	2	2	1	0	2	2	3	3	2	2	2	3	3	4	4	4	5	5	5	5	5	5	5	5	5	5	5	6
7.9 9 1923																								6	14	14	16	18	20	14	6	-2	0	1	2	5	4	2	2	1	1	0	1	2	3	3	2	2	2	3	3	4	4	4	5	5	5	5	5	5	6	5	5	6	6
8.4 9 1924																									23	18	19	22	24	15	6	-3	0	1	1	5	4	2	2	1	0	0	0	1	2	2	3	2	2	2	3	3	4	4	4	5	5	5	5	5	5	5	6	5	5	6
10.1 11 1925																										13	17	21	24	14	3	-7	-3	-1	-1	3	3	0	1	0	-1	-1	0	1	2	2	1	1	1	2	3	3	3	3	4	5	4	4	5	5	5	5	5	5	5
11.7 13 1926																											22	26	27	14	2	-9	-5	-3	-2	2	2	-1	0	-1	-2	-2	-1	0	1	2	1	1	1	2	2	3	3	4	4	4	4	5	4	5	5	5	5	5
15.9 15 1927																												30	30	11	-3	-15	-9	-6	-5	0	0	-3	-2	-3	-3	-4	-2	-1	0	1	0	0	0	1	2	2	2	2	4	4	4	4	4	4	4	4	4	5	5
21.8 20 1928																													30	3	-12	-23	-15	-11	-9	-3	-3	-5	-4	-5	-5	-6	-4	-3	-2	-1	-1	-1	-1	0	0	1	1	2	3	3	3	3	3	3	4	3	4	4	4
27.6 26 1929																														-19	-28	-36	-23	-18	-14	-7	-6	-9	-7	-8	-8	-8	-6	-5	-3	-2	-3	-3	-3	-2	-1	0	0	1	2	2	2	2	3	2	3	3	3	3
21.5 21 1930																																-35	-43	-25	-17	-13	-5	-4	-7	-6	-6	-7	-7	-5	-4	-2	-1	-2	-2	-2	-1	0	1	1	1	3	3	3	3	4	3	4	3	4	4
14.7 14 1931																																	-49	-19	-10	-6	3	2	-2	-2	-2	-3	-4	-1	-1	1	2	1	1	1	2	2	3	3	3	5	5	5	5	5	5	5	5	5	6
8.1 7 1932																																		29	19	15	22	17	9	8	6	4	2	5	5	6	7	5	5	5	6	6	6	7	6	7	8	8	8	8	8	8	8	8	8	8
11.1 9 1933																																			10	9	20	15	5	5	3	1	0	3	3	4	5	4	4	3	4	5	5	5	6	7	7	7	7	7	7	7	7	7	7	7
12.2 10 1934																																				8	25	16	4	4	2	0	-2	2	2	4	5	3	3	3	4	5	5	5	6	7	7	7	7	7	7	7	7	7	7	7
13.1 11 1935																																					46	21	3	3	1	-1	-3	1	2	4	4	3	3	3	4	5	5	5	6	7	7	7	7	7	7	7	7	7	7	7
19.3 15 1936																																						0	-14	-8	-8	-9	-9	-4	-3	0	1	0	0	0	0	1	2	3	3	4	5	6	5	5	6	5	6	6	6	6
18.5 15 1937																																							-25	-12	-11	-11	-11	-5	-3	0	1	0	0	0	0	1	3	3	3	4	6	6	5	5	6	6	6	6	6	6
13.9 11 1938																																								5	-2	-5	-7	0	1	4	5	3	3	3	4	5	6	5	6	8	8	7	7	8	7	8	7	7	8
15.6 12 1939																																									-9	-10	-10	-1	1	4	5	3	3	2	4	5	6	5	6	8	8	8	8	7	8	8	7	8	8
14.7 11 1940																																										-11	-11	1	3	7	8	5	4	4	5	7	7	6	7	9	9	9	8	9	8	9	8	9
12.2 10 1941																																											-12	8	8	11	12	8	7	6	7	9	9	8	9	11	11	10	10	10	10	10	9	9	10
9.2 9 1942																																												33	20	20	18	12	10	8	10	11	11	10	11	13	13	12	11	12	11	11	10	10	11
11.0 12 1943																																													8	15	14	7	6	5	7	9	9	8	9	11	11	10	10	11	10	10	9	9	10
11.3 12 1944																																														22	17	7	6	4	7	9	9	8	9	11	12	10	10	11	10	10	9	9	10
13.3 15 1945																																															13	0	1	0	4	7	7	6	8	10	11	9	9	10	9	10	9	9	9
14.0 17 1946																																																-11	-5	-4	2	5	6	5	7	10	11	9	9	10	9	9	8	9	9
11.2 15 1947																																																	2	0	7	10	10	8	10	13	13	11	11	12	11	11	10	10	10
10.7 16 1948																																																		-2	9	13	12	10	11	15	15	12	12	13	11	12	10	11	11
9.9 15 1949																																																			21	21	17	13	14	18	17	14	13	14	13	13	11	11	12
11.2 18 1950																																																				21	15	10	13	17	17	13	12	13	12	12	11	11	11
12.0 22 1951																																																					10	5	10	16	16	12	11	13	11	11	10	10	10
12.5 24 1952																																																						1	10	18	17	13	11	13	11	12	10	10	11
12.0 25 1953																																																							20	28	24	16	13	15	12	13	11	11	11
13.7 30 1954																																																								36	25	14	12	14	11	12	10	10	11
17.5 40 1955																																																									15	5	4	9	7	9	6	7	8
18.3 47 1956																																																										-5	0	7	5	7	5	6	7
15.6 44 1957																																																											4	14	8	11	7	8	9
15.1 46 1958																																																												24	10	13	8	9	10
18.4 57 1959																																																													-3	7	3	5	7
17.4 56 1960																																																															19	6	8	10
20.5 66 1961																																																																-6	3	7
18.8 62 1962																																																																		12	14
20.3 70 1963																																																																			16
22.6 81 1964																																																																			
23.3 88 1965																																																																			
21.3 85 1966																																																																			
21.6 92 1967																																																																			
21.5 98 1968																																																																			
19.4 98 1969																																																																			
15.2 83 1970																																																																			
16.9 98 1971																																																																			
17.8 109 1972																																																																			
16.1 107 1973																																																																			
10.9 83 1974																																																																			
10.2 86 1975																																																																			
11.5 102 1976																																																																			
10.4 98 1977																																																																			
9.4 96 1978																																																																			
8.9 103 1979																																																																			
8.8 119 1980																																																																			
8.5 128 1981																																																																			
7.3 120 1982																																																																			
9.6 160 1983																																																																			
9.4 160 1984																																																																			
10.7 187 1985																																																																			
13.4 236 1986																																																																			
16.0 287 1987																																																																			
14.4 266 1988																																																																			
16.6 323 1989																																																																			
16.5 335 1990																																																																			
17.9 376 1991																																																																			
19.6 416 1992																																																																			
20.7 452 1993																																																																			
20.5 460 1994																																																																			
22.7 542 1995																																																																			
25.9 670 1996																																																																			
31.0 873 1997																																																																			
36.0 1086 1998																																																																			
42.1 1327 1999																																																																			
41.7 1427 2000

P/E Ratio	S&P 500 Index	"TO" Year		
23	88	65	FROM	Rodin Completes 'The Thinker'
21	85	66	1901	First Electric Typewriter
22	92	67	1902	Navy Installs Radio
21	98	68	1903	Wright Bros Fly
19	98	69	1904	Crayola & Jell-O
15	83	70	1905	Pen Gets Pocket Clip
17	98	71	1906	S.F. Earthquake
18	109	72	1907	Photocopier Marketed
16	107	73	1908	Model T Introduced
11	83	74	1909	Chlorine In Drinking Water
10	86	75	1910	Electric Range Invented
12	102	76	1911	Sherman Anti-Trust Act; Airmail Begins
10	98	77	1912	Titanic Sinks; U.S. Radio Act
9	96	78	1913	Income Tax & Federal Reserve
9	103	79	1914	WWI Starts; First Transcon. Phone Call
8	119	80	1915	Americans Avg 40 Phone Calls A Year
9	128	81	1916	Keds & Electric Clock Invented
8	120	82	1917	US Enters WWI; Einstein Theorizes Lasers
7	160	83	1918	WWI Ends
10	160	84	1919	Prohibition; Shortwave Radio; Dial Phones
9	187	85	1920	Women's Right To Vote
11	236	86	1921	World Series On Radio; Quartz Crystals
13	287	87	1922	100,000 Radios Made In U.S.; 3 Frequencies
16	287	88	1923	500,000 Radios Made; Neon Signs
14	266	89	1924	2.5 Million Radios Made; Frozen Food Invented
17	323	90	1925	Commercial Picture Fax By Radio In U.S.
16	335	91	1926	First Publicly Shown 'Talkie'
18	376	92	1927	2-Way Radio Phone: U.S. To London ($15/min)
20	416	93	1928	Teletype Machine; Test TV In 3 Homes
21	452	94	1929	Crash of '29; Car Radio
20	460	95	1930	Photo Flash Bulbs
23	542	96	1931	Radios In 40% Of Homes; Scotch Tape
26	670	97	1932	Radar; 8 mm Cameras; Electric Eye Scanner
31	873	98	1933	End of Prohibition; FM Radio; Wallboard
36	1086	99	1934	Radios In 50% Of Homes; AP Wirephoto
42	1327	2000	1935	Social Security Act Passed
42	1427	01	1936	BBC First TV Service, 3 Hours A Day
32	1194	02	1937	Hindenburg Airship Crash
26	994	03	1938	National Minimum Wage Enacted
24	965	04	1939	WW II Begins; Regular TV In U.S.; Helicopter
26	1131	05	1940	FM Radio; Radar; 1st Social Security Check
26	1207	06	1941	Pearl Harbor Attack; 2-Way Police Radio
26	1310	07	1942	U.S. Office Of Censorship Due To War
27	1477	08	1943	Phone Line Repeaters Help Service
21	1220	09	1944	D-Day, Normandy
17	948	10	1945	World War II Ends; FCC Sets VHF Channels
22	1140	11	1946	ENIAC, 1st Computer; First Copy Machine Sold
21	1268	12	1947	Transistor Invented; Microwave Oven
23	1379	13	1948	Israel Established; RCA High Speed Fax
25	1644	14	1949	NATO Established; Network TV In U.S.
26	1931	15	1950	Korean War Begins; Credit Card Created
30	2061	16	1951	Color TV; Modern Plastic Invented
30	2095	17	1952	Phone Area Codes; EDVAC Computer
31	2449	18	1953	Korean War Ends; Magnetic Core Memory
29	2746	19	1954	TVs In 54% Of Homes; Transistor Radios
	2913		1955	Tests Begin On Digital Fiber Optics
			1956	Transatlantic Phone Cable; The Pager
			1957	Sputnik, First Satellite; EEC Formed
			1958	Stereo LP Records; Data On Phone Lines
			1959	COBOL; Microchip; Plain Paper Xerox
			1960	90% Homes w/TVs; Laser; Weather Satellite
			1961	Berlin Wall Built; IBM Selectric Typewriter
			1962	Cuban Missile Crisis; Mariner II At Venus
			1963	Kennedy Killed, Income Tax 91% To 70%
			1964	Vietnam Begins; Home VCR
			1965	First Minicomputer; Car Phones; Hypertext
			1966	Dow @ 1,000; 8-Tracks In Cars; Fax Machine
			1967	Floppy Disk; Cordless Phones; Dolby
			1968	Intelsat Global Satellite Link; Intel 1KB RAM
			1969	Neil Armstrong Walks On Moon; ATMs
			1970	Barcodes; First Internet Connections
			1971	Microchip, Price Controls; Answering Machine
			1972	Dow Closes Above 1,000; Pong; HBO
			1973	U.S. Leaves Vietnam; International Internet
			1974	Nixon Resigns; Wage & Price Controls End
			1975	Microsoft; Optical Videodisk Demo
			1976	Apple I; Cray-1; Home Satellite Dish
			1977	Elvis Dies; TRS-80 PC; Fiber Optic Call
			1978	Modems; Cell Phone Tests; Intel 16-bit Chip
			1979	CompuServe Online; VisiCalc Spreadsheet
			1980	CPI 13.5%; CNN; Sony Camcorder
			1981	IBM PC Introduced; 300 bps Modems
			1982	Dow Over 1,000; Compact Disk; 5.5 Mil. PCs
			1983	AT&T Breakup; 288k Chips; Domain Names
			1984	3 1/2" Floppy; Intel 32-bit; 1 MB Chips
			1985	Cellphones; 2400k Modems; Windows OS
			1986	Laser Printers; TV On 7 Hrs/Day In U.S.
			1987	Stock Market Crash; 50% Have Cable TV
			1988	Transatlantic Fiberoptic Cable; Internet T1
			1989	Poland Solidarity; Nintendo Profits @ $1 Bil.
			1990	World Wide Web (www)
			1991	Gulf War; USSR Breakup; 75% Have VCRs
			1992	65 Mil. PCs; 200k On AOL; CDs > Cassettes
			1993	Pentium Chip; HTML; V-Chip
			1994	First WTC Attack; Satellite TV; 33% w/PC
			1995	NAFTA Enacted; Dot.com; Internet Audio
			1996	100k Web Sites; 30 Mil In U.S. On Internet
			1997	Internet Video; 43% In U.S. Have PCs
			1998	Russia Debt Default; 75 Mil U.S. On Internet
			1999	Satellite Can See 3' Objects On Earth
			2000	Dow Hits 11,723; NASDAQ Hits 5,048
			2001	WTC Attack (9/11); >50% U.S. On Internet; iPod
			2002	HDTV Grows; Wi-Fi Laptops; DVD Sales>VCR
			2003	Iraq Conflict; Home Networks; T-Bills @ <1%
			2004	Hybrid Cars; Flat Panel TVs; Blogs; VoIP
			2005	Hurricanes; $70 Oil; Podcasts; Housing Boom
			2006	YouTube; Dow High; Pluto Demoted; Fed Pause
			2007	iPhone; Sub-Prime; Going Green; Facebook
			2008	Recession; Wall Street Crisis; $144 Oil; Obama
			2009	H1N1; Jackson Dies; GM Bankruptcy; Digital TV
			2010	iPad; Greece Debt Crisis; Twitter; QE2
			2011	The Cloud; Arab Spring; OWS; E-books
			2012	Google Glass; Mars Rover; iPhone5; Fiscal Cliff
			2013	Fed Taper; Detroit Ch 9; NSA; ACA Launch; Nest
			2014	Ebola; ISIS; Amazon Drones; Wearable Tech
			2015	ZIRP Ends; Iran Deal; Refugees; Driverless Car
			2016	Brexit; Trump; <$30 Oil; Cyborg Stingray
			2017	Bitcoin Mania; Robot Citizen; Teleporting; WattUp
			2018	Apple $1T; Tax Reform; Zero Carbon Nat Gas; 5G
			2019	UPS Drones; Quantum Supremacy; Starlink L1
3	3	3	4.1%	Avg (S&P 500 Div Yield %)
2	3	4	3.1%	Avg (CPI Inflation %)
8	10	6	9	8	5	9	10	11	8	9	11	11	13	12	9	12	4	9	11	7	6	6	8	8	6	3	6	5	6	5	6	6	6	6	3	3	5	7	7	6	5	2	-2	4	4	4	4	4	4	3	4	5	4		
9%	[		