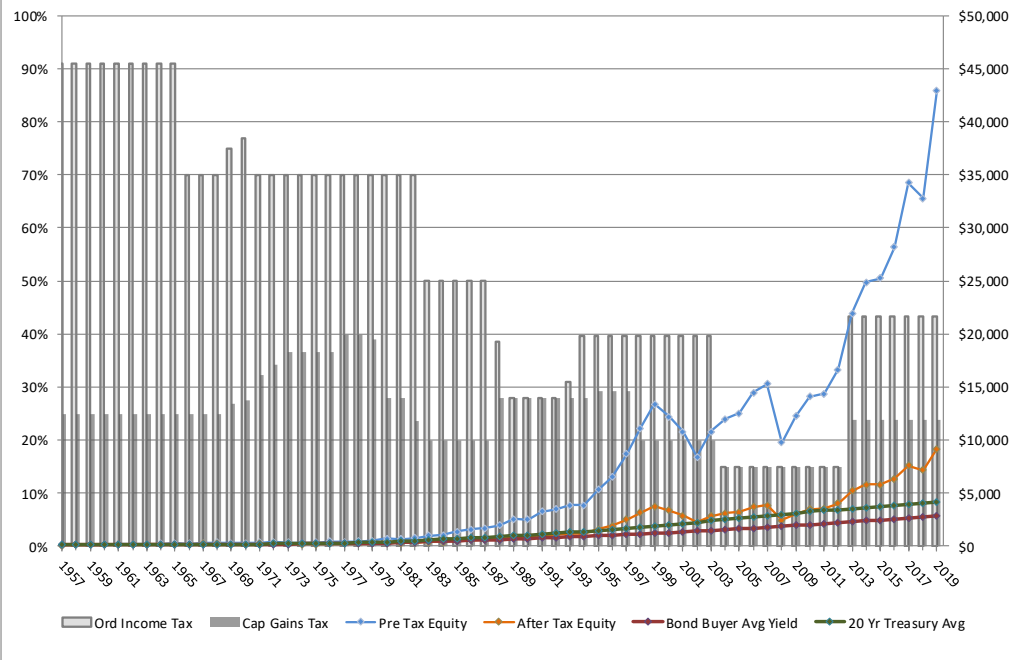


Stocks Vs. Bonds Pre & After Tax (1957-2019)



Run Sim	
Start Year (Jan 1)	1957
End Year (Dec 31)	2019
Annual Portfolio Turnover	5.00%
State Tax Rate	6.00%
Starting Investment	\$100
Before-Tax Equity	\$42,993
After-Tax Equity	\$9,193
After-Tax Post Liq Equity	\$7,571
20 Yr Treasury	\$4,151
Bond Buyer	\$2,851
Compound Dividends (y = yes)	y

Before Tax Annualized Return		After Tax Annualized Return		After Tax Post Liquidation Annualized Return		Market Yield	
Before-Tax Equity ROR	10.10%	After-Tax Equity ROR	7.44%	After Tax Post Liquidation Equity	7.11%	S&P 500 Earnings Yield (Beg of Start Yr)	1957 7.52%
20 Yr Treasury Average Yield	6.09%	20 Yr Treasury Average Yield	6.09%	20 Yr Treasury Average Yield	6.09%	20 Yr Treasury Yield (Average for Yr)	3.24%
Equity Risk Premium	4.01%	Equity Risk Premium	1.35%	Projected Equity Risk Premium	1.02%	Projected Equity Risk Premium	4.28%
Real Before Tax Equity ROR	6.53%	Real After Tax Equity ROR	3.86%	Real After Tax Post Liquidation Equity	3.53%		
Before-Tax Equity ROR	10.10%	After-Tax Equity ROR	7.44%	After Tax Post Liquidation Equity	7.11%	S&P 500 Earnings Yield (Beg of Start Yr)	1957 7.52%
Bond Buyer Average Yield	5.46%	Bond Buyer Average Yield	5.46%	Bond Buyer Average Yield	5.46%	20 Yr Treasury Yield (Average for Yr)	3.29%
Equity Risk Premium	4.64%	Equity Risk Premium	1.98%	Projected Equity Risk Premium	1.65%	Projected Equity Risk Premium	4.23%

Stocks Vs. Bonds Rolling 20 Year Periods (After Tax)

Time Period	20 Yr Bond Buyer Yield from Jan 1 Beg Yr	20 Year Annualized Return After Tax Post Liquidation	Outperformance	Equity Premium	Missed Prediction	Beg of Year Earnings Yield
1957-1976	3.23%	3.64%	Equities	0.41%		7.52%
1958-1977	2.97%	3.59%	Equities	0.62%		8.40%
1959-1978	3.40%	2.51%	Bonds	-0.89%	x	5.24%
1960-1979	3.78%	2.79%	Bonds	-0.99%	x	5.65%
1961-1980	3.39%	3.88%	Equities	0.49%		5.35%
1962-1981	3.37%	2.72%	Bonds	-0.65%	x	4.72%
1963-1982	3.05%	3.92%	Equities	0.87%		5.81%
1964-1983	3.26%	4.06%	Equities	0.80%		5.49%
1965-1984	3.07%	3.73%	Equities	0.66%		5.62%
1966-1985	3.53%	4.47%	Equities	0.94%		5.75%
1967-1986	3.76%	5.71%	Equities	1.95%		6.71%
1968-1987	4.38%	5.08%	Equities	0.70%		5.65%
1969-1988	4.85%	5.10%	Equities	0.25%		5.49%
1970-1989	6.61%	6.78%	Equities	0.17%		6.62%
1971-1990	5.74%	6.61%	Equities	0.87%		5.99%
1972-1991	5.03%	7.25%	Equities	2.22%		5.46%
1973-1992	5.08%	6.85%	Equities	1.77%		5.24%
1974-1993	5.18%	8.12%	Equities	2.94%		8.13%
1975-1994	7.08%	9.73%	Equities	2.65%		13.70%
1976-1995	7.13%	9.75%	Equities	2.62%		8.55%
1977-1996	5.78%	9.78%	Equities	4.00%		9.09%
1978-1997	5.64%	11.65%	Equities	6.01%		11.36%
1979-1998	6.58%	13.24%	Equities	6.66%		12.05%
1980-1999	7.32%	13.55%	Equities	6.23%		13.51%
1981-2000	9.49%	11.83%	Equities	2.34%		10.99%
1982-2001	13.36%	11.63%	Bonds	-1.73%		12.35%
1983-2002	9.48%	9.69%	Equities	0.21%		9.80%
1984-2003	9.66%	9.94%	Equities	0.28%	x	8.06%
1985-2004	9.87%	10.42%	Equities	0.55%		10.10%
1986-2005	8.33%	9.40%	Equities	1.07%	x	7.41%
1987-2006	6.70%	9.36%	Equities	2.66%	x	5.95%
1988-2007	7.83%	9.43%	Equities	1.60%	x	6.49%
1989-2008	7.44%	6.70%	Bonds	-0.74%	x	8.70%
1990-2009	7.03%	6.47%	Bonds	-0.56%		6.90%
1991-2010	7.09%	7.29%	Equities	0.20%	x	6.85%
1992-2011	6.52%	6.18%	Bonds	-0.34%		4.63%
1993-2012	6.17%	6.54%	Equities	0.37%	x	4.78%
1994-2013	5.34%	7.12%	Equities	1.78%		5.78%
1995-2014	6.66%	7.64%	Equities	0.98%		6.91%
1996-2015	5.37%	6.20%	Equities	0.83%		6.12%
1997-2016	5.70%	5.78%	Equities	0.08%	x	5.49%
1998-2017	5.07%	5.32%	Equities	0.25%	x	4.54%
1999-2018	5.05%	4.01%	Bonds	-1.04%		3.60%
2000-2019	6.04%	4.62%	Bonds	-1.42%		3.52%

Correlation

83.7%

Rolling 20 Year Equity Returns Vs. Starting P/E & E/Y (Pre-Tax)

Time Period Beg (Jan)- End (Dec)	20 Year Annualized Return Pre Tax, Pre-Liquidation	Beginning of Period (Jan 1)	
		P / E	Earnings Yield
1957-1976	7.81%	13.3x	7.52%
1958-1977	7.79%	11.9x	8.40%
1959-1978	6.42%	19.1x	5.24%
1960-1979	6.99%	17.7x	5.65%
1961-1980	8.26%	18.7x	5.35%
1962-1981	6.76%	21.2x	4.72%
1963-1982	8.23%	17.2x	5.81%
1964-1983	8.22%	18.2x	5.49%
1965-1984	7.72%	17.8x	5.62%
1966-1985	8.55%	17.4x	5.75%
1967-1986	10.03%	14.9x	6.71%
1968-1987	9.18%	17.7x	5.65%
1969-1988	9.45%	18.2x	5.49%
1970-1989	11.41%	15.1x	6.62%
1971-1990	11.05%	16.7x	5.99%
1972-1991	11.78%	18.3x	5.46%
1973-1992	11.23%	19.1x	5.24%
1974-1993	12.60%	12.3x	8.13%
1975-1994	14.33%	7.3x	13.70%
1976-1995	14.35%	11.7x	8.55%
1977-1996	14.30%	11.0x	9.09%
1978-1997	16.35%	8.8x	11.36%
1979-1998	17.43%	8.3x	12.05%
1980-1999	17.56%	7.4x	13.51%
1981-2000	15.42%	9.1x	10.99%
1982-2001	14.96%	8.1x	12.35%
1983-2002	12.52%	10.2x	9.80%
1984-2003	12.80%	12.4x	8.06%
1985-2004	13.04%	9.9x	10.10%
1986-2005	11.79%	13.5x	7.41%
1987-2006	11.66%	16.8x	5.95%
1988-2007	11.64%	15.4x	6.49%
1989-2008	8.34%	11.5x	8.70%
1990-2009	8.12%	14.5x	6.90%
1991-2010	9.03%	14.6x	6.85%
1992-2011	7.72%	21.6x	4.63%
1993-2012	8.12%	20.9x	4.78%
1994-2013	9.11%	17.3x	5.78%
1995-2014	9.72%	14.5x	6.91%
1996-2015	8.02%	16.3x	6.12%
1997-2016	7.59%	18.2x	5.49%
1998-2017	7.11%	22.0x	4.54%
1999-2018	5.56%	27.8x	3.60%
2000-2019	5.99%	28.4x	3.52%

Correlation

79.8%

Rolling 20 Year Equity Returns Vs. Starting P/E & E/Y (After Tax)

Time Period Beg (Jan)- End (Dec)	20 Yr Annualized Return After Tax, 5% Turnover	Beginning of Period (Jan 1)	
		P / E	Earnings Yield
1957-1976	4.45%	13.3x	7.52%
1958-1977	4.23%	11.9x	8.40%
1959-1978	2.97%	19.1x	5.24%
1960-1979	3.41%	17.7x	5.65%
1961-1980	4.61%	18.7x	5.35%
1962-1981	3.20%	21.2x	4.72%
1963-1982	4.50%	17.2x	5.81%
1964-1983	4.63%	18.2x	5.49%
1965-1984	4.24%	17.8x	5.62%
1966-1985	5.13%	17.4x	5.75%
1967-1986	6.47%	14.9x	6.71%
1968-1987	5.77%	17.7x	5.65%
1969-1988	6.06%	18.2x	5.49%
1970-1989	7.94%	15.1x	6.62%
1971-1990	7.62%	16.7x	5.99%
1972-1991	8.40%	18.3x	5.46%
1973-1992	7.94%	19.1x	5.24%
1974-1993	9.25%	12.3x	8.13%
1975-1994	10.83%	7.3x	13.70%
1976-1995	11.08%	11.7x	8.55%
1977-1996	11.18%	11.0x	9.09%
1978-1997	13.22%	8.8x	11.36%
1979-1998	14.42%	8.3x	12.05%
1980-1999	14.75%	7.4x	13.51%
1981-2000	12.88%	9.1x	10.99%
1982-2001	12.55%	8.1x	12.35%
1983-2002	10.33%	10.2x	9.80%
1984-2003	10.72%	12.4x	8.06%
1985-2004	11.05%	9.9x	10.10%
1986-2005	9.99%	13.5x	7.41%
1987-2006	9.98%	16.8x	5.95%
1988-2007	10.03%	15.4x	6.49%
1989-2008	6.87%	11.5x	8.70%
1990-2009	6.79%	14.5x	6.90%
1991-2010	7.68%	14.6x	6.85%
1992-2011	6.52%	21.6x	4.63%
1993-2012	6.95%	20.9x	4.78%
1994-2013	7.93%	17.3x	5.78%
1995-2014	8.51%	14.5x	6.91%
1996-2015	7.00%	16.3x	6.12%
1997-2016	6.54%	18.2x	5.49%
1998-2017	6.14%	22.0x	4.54%
1999-2018	4.66%	27.8x	3.60%
2000-2019	5.09%	28.4x	3.52%

20 Year Rolling US Treasury Portfolio

Year Start	20-Year Treasury Constant Maturity Avg Yield	20-Year Treasury Geometric Mean Yield (Whole)	Beginning Portfolio Value	Ending Portfolio Value
1957	3.24%	6.09%	\$100.00	\$103.24
1958	3.62%	6.09%	\$103.24	\$106.97
1959	4.17%	6.09%	\$106.97	\$111.43
1960	4.15%	6.09%	\$111.43	\$116.05
1961	4.03%	6.09%	\$116.05	\$120.73
1962	4.06%	6.09%	\$120.73	\$125.63
1963	4.07%	6.09%	\$125.63	\$130.74
1964	4.17%	6.09%	\$130.74	\$136.19
1965	4.38%	6.09%	\$136.19	\$142.15
1966	4.51%	6.09%	\$142.15	\$148.56
1967	4.91%	6.09%	\$148.56	\$155.85
1968	5.69%	6.09%	\$155.85	\$164.71
1969	6.42%	6.09%	\$164.71	\$175.29
1970	6.41%	6.09%	\$175.29	\$186.51
1971	5.94%	6.09%	\$186.51	\$197.58
1972	6.38%	6.09%	\$197.58	\$210.18
1973	7.12%	6.09%	\$210.18	\$225.13
1974	7.51%	6.09%	\$225.13	\$242.04
1975	7.75%	6.09%	\$242.04	\$260.79
1976	7.77%	6.09%	\$260.79	\$281.04
1977	7.89%	6.09%	\$281.04	\$303.20
1978	8.47%	6.09%	\$303.20	\$328.86
1979	9.98%	6.09%	\$328.86	\$361.67
1980	11.76%	6.09%	\$361.67	\$404.18
1981	13.29%	6.09%	\$404.18	\$457.88
1982	12.63%	6.09%	\$457.88	\$515.68
1983	11.43%	6.09%	\$515.68	\$574.60
1984	11.54%	6.09%	\$574.60	\$640.88
1985	10.36%	6.09%	\$640.88	\$707.24
1986	8.58%	6.09%	\$707.24	\$767.89
1987	8.14%	6.09%	\$767.89	\$830.36
1988	8.73%	6.09%	\$830.36	\$902.81
1989	8.73%	6.09%	\$902.81	\$981.62
1990	8.37%	6.09%	\$981.62	\$1,063.73
1991	7.86%	6.09%	\$1,063.73	\$1,147.29
1992	7.15%	6.09%	\$1,147.29	\$1,229.32
1993	6.36%	6.09%	\$1,229.32	\$1,307.51
1994	6.76%	6.09%	\$1,307.51	\$1,395.89
1995	6.95%	6.09%	\$1,395.89	\$1,492.91
1996	6.83%	6.09%	\$1,492.91	\$1,594.87
1997	6.69%	6.09%	\$1,594.87	\$1,701.57
1998	5.72%	6.09%	\$1,701.57	\$1,798.90
1999	6.20%	6.09%	\$1,798.90	\$1,910.43
2000	6.23%	6.09%	\$1,910.43	\$2,029.45
2001	5.63%	6.09%	\$2,029.45	\$2,143.71
2002	5.43%	6.09%	\$2,143.71	\$2,260.11
2003	4.96%	6.09%	\$2,260.11	\$2,372.22
2004	5.04%	6.09%	\$2,372.22	\$2,491.78
2005	4.64%	6.09%	\$2,491.78	\$2,607.39
2006	5.00%	6.09%	\$2,607.39	\$2,737.76
2007	4.91%	6.09%	\$2,737.76	\$2,872.19
2008	4.36%	6.09%	\$2,872.19	\$2,997.42
2009	4.11%	6.09%	\$2,997.42	\$3,120.61
2010	4.03%	6.09%	\$3,120.61	\$3,246.37
2011	3.62%	6.09%	\$3,246.37	\$3,363.89
2012	2.54%	6.09%	\$3,363.89	\$3,449.33
2013	3.12%	6.09%	\$3,449.33	\$3,556.95
2014	3.07%	6.09%	\$3,556.95	\$3,666.15
2015	2.55%	6.09%	\$3,666.15	\$3,759.64
2016	2.22%	6.09%	\$3,759.64	\$3,843.10
2017	2.65%	6.09%	\$3,843.10	\$3,944.94
2018	3.02%	6.09%	\$3,944.94	\$4,064.08
2019	2.14%	6.09%	\$4,064.08	\$4,151.05

**20 Year Period Actual Returns Vs. 20 Year Minimum
Expected Returns**

Year	20 Year Treasury	20 Year Bond Buyer	Earnings Yield	20 Year Period Actual Return (Pre-Tax)	20 Year Period Actual Return (Post Tax)
1957	3.24%	3.29%	7.52%	7.81%	4.45%
1958	3.62%	3.16%	8.40%	7.79%	4.23%
1959	4.17%	3.56%	5.24%	6.42%	2.97%
1960	4.15%	3.51%	5.65%	6.99%	3.41%
1961	4.03%	3.46%	5.35%	8.26%	4.61%
1962	4.06%	3.15%	4.72%	6.76%	3.20%
1963	4.07%	3.17%	5.81%	8.23%	4.50%
1964	4.17%	3.21%	5.49%	8.22%	4.63%
1965	4.38%	3.27%	5.62%	7.72%	4.24%
1966	4.51%	3.81%	5.75%	8.55%	5.13%
1967	4.91%	3.94%	6.71%	10.03%	6.47%
1968	5.69%	4.44%	5.65%	9.18%	5.77%
1969	6.42%	5.72%	5.49%	9.45%	6.06%
1970	6.41%	6.34%	6.62%	11.41%	7.94%
1971	5.94%	5.47%	5.99%	11.05%	7.62%
1972	6.38%	5.27%	5.46%	11.78%	8.40%
1973	7.12%	5.20%	5.24%	11.23%	7.94%
1974	7.51%	6.17%	8.13%	12.60%	9.25%
1975	7.75%	7.04%	13.70%	14.33%	10.83%
1976	7.77%	6.62%	8.55%	14.35%	11.08%
1977	7.89%	5.68%	9.09%	14.30%	11.18%
1978	8.47%	6.03%	11.36%	16.35%	13.22%
1979	9.98%	6.51%	12.05%	17.43%	14.42%
1980	11.76%	8.57%	13.51%	17.56%	14.75%
1981	13.29%	11.37%	10.99%	15.42%	12.88%
1982	12.63%	11.64%	12.35%	14.96%	12.55%
1983	11.43%	9.51%	9.80%	12.52%	10.33%
1984	11.54%	10.10%	8.06%	12.80%	10.72%
1985	10.36%	9.11%	10.10%	13.04%	11.05%
1986	8.58%	7.33%	7.41%	11.79%	9.99%
1987	8.14%	7.66%	5.95%	11.66%	9.98%
1988	8.73%	7.68%	6.49%	11.64%	10.03%
1989	8.73%	7.23%	8.70%	8.34%	6.87%
1990	8.37%	7.27%	6.90%	8.12%	6.79%
1991	7.86%	6.92%	6.85%	9.03%	7.68%
1992	7.15%	6.44%	4.63%	7.72%	6.52%
1993	6.36%	5.59%	4.78%	8.12%	6.95%
1994	6.76%	6.19%	5.78%	9.11%	7.93%
1995	6.95%	5.95%	6.91%	9.72%	8.51%
1996	6.83%	5.76%	6.12%	8.02%	7.00%
1997	6.69%	5.52%	5.49%	7.59%	6.54%
1998	5.72%	5.09%	4.54%	7.11%	6.14%
1999	6.20%	5.44%	3.60%	5.56%	4.66%
2000	6.23%	5.71%	3.52%	5.99%	5.09%
2001	5.63%	5.15%	4.25%		
2002	5.43%	5.04%	3.38%		
2003	4.96%	4.74%	5.23%		
2004	5.04%	4.68%	4.92%		
2005	4.64%	4.40%	5.58%		
2006	5.00%	4.40%	6.12%		
2007	4.91%	4.40%	6.18%		
2008	4.36%	4.86%	5.62%		
2009	4.11%	4.61%	5.48%		
2010	4.03%	4.30%	5.10%		
2011	3.62%	4.50%	6.66%		
2012	2.54%	3.73%	7.67%		
2013	3.12%	4.25%	6.79%		
2014	3.07%	4.22%	5.81%		
2015	2.55%	3.65%	5.49%		
2016	2.22%	3.25%	4.92%		
2017	2.65%	3.67%	4.75%		
2018	3.02%	3.90%	4.66%		
2019	2.14%	3.40%	6.05%		

2019 Top State Income Tax Rates

Alabama	5.00%
Alaska	0.00%
Arizona	4.54%
Arkansas	6.90%
California	13.30%
Colorado	4.63%
Connecticut	6.99%
Delaware	6.60%
District of Columbia	8.95%
Florida	0.00%
Georgia	5.75%
Hawaii	11.00%
Idaho	6.93%
Illinois	4.95%
Indiana	3.23%
Iowa	8.53%
Kansas	5.70%
Kentucky	5.00%
Louisiana	6.00%
Maine	7.15%
Maryland	5.75%
Massachusetts	5.05%
Michigan	4.25%
Minnesota	9.85%
Mississippi	5.00%
Missouri	5.40%
Montana	6.90%
Nebraska	6.84%
Nevada	0.00%
New Hampshire	5.00%
New Jersey	10.75%
New Mexico	4.90%
New York	8.82%
North Carolina	5.25%
North Dakota	2.90%
Ohio	5.00%
Oklahoma	5.00%
Oregon	9.90%
Pennsylvania	3.07%
Rhode Island	5.99%
South Carolina	7.00%
South Dakota	0.00%
Tennessee	2.00%
Texas	0.00%
Utah	4.95%
Vermont	8.75%
Virginia	5.75%
Washington	0.00%
West Virginia	6.50%
Wisconsin	7.65%
Wyoming	0.00%