

**What Works On Wall Street — Chapter 24 Case Study:
Using the Two Least Volatile Sectors to Create a Market-Beating Portfolio**

Our sector analysis proved that appearances can be deceiving—the two least volatile sectors, utilities and consumer staples, offered excellent returns at both the overall sector level and at the factor level. Each sector possesses a business advantage that lowers volatility: monopoly power for utilities and brand power for consumer staples. And unless the government inexplicably deregulates utilities or one of the major brands were to self-destruct, these advantages seem permanent.

In the utility sector, buying those utility stocks with the highest scores from composited Value Factor Two generated the best returns. They earned an average annual compound return of 16.01 percent, with a maximum decline of 33 percent. In the consumer staples sector, buying the quintiles of stocks with the highest shareholder yield proved the best strategy, generating an average annual compound return of 17.80 percent with a maximum peak-to-trough decline of 34 percent.

Let's look at how we can use this information to create a market-beating portfolio. Since you might not want a portfolio with an uneven allocation to each sector—the top quintile of the consumer staples sector currently includes 28 stocks and the top quintile of the utility sector currently includes 23 stocks, let's look at buying the top 25 stocks from each sector. Thus our portfolio will be made up of the 25 stocks from the consumer staples sector with the highest shareholder yield and the top 25 stocks from the utilities sector with the highest scores on composited Value Factor Two. All of the results are for composited portfolio returns.

Table 24.CS1 shows the summary results for this combined portfolio. For the forty-two years between December 31st, 1967 and December 31st, 2009, an investment in the combined portfolio earned an average annual compound return of 17.22 percent with a standard deviation of return of just 13.51 percent. That turns \$10,000 invested on December 31st, 1967 into \$7,922,033 at the end of 2009. The high return coupled with the very low risk brought the Sharpe ratio to a robust .91.

TABLE 24.CS1

Summary Return and Risk Results for Monthly Data: Utility Top 25 Value Factor Two, Consumer Staples Top 25 Shareholder Yield; Combined Portfolio, All Stocks, January 1, 1968 to December 31, 2009

	Utility top 25 Value Factor 2	Consumer Staples top 25 Shareholder Yld	Combined	All Stocks
Arithmetic Average Return	17.53	19.01	18.27	12.53%
Geometric Average Return	16.32	17.74	17.22	10.40%
Median Return	14.63	19.94	18.63	16.07%
Standard Deviation	14.62	14.80	13.51	19.46%
Upside Deviation	10.54	10.15	9.46	11.17%
Downside Deviation	9.31	10.47	9.22	14.06%
Tracking Error	15.60	11.93	12.60	0.00
Number of Positive Periods	332	332	341	295
Number of Negative Periods	172	172	163	209
Maximum Peak-to-Trough Decline	-33.03	-33.97	-33.27	-55.54%
Beta	0.46	0.61	0.53	1.00

T-Statistic (m=0)	7.21	7.68	8.11	3.95
Sharpe Ratio (Rf=5%)	0.77	0.86	0.91	0.28
Sortino Ratio (MAR=10%)	0.68	0.74	0.78	0.03
\$10,000 becomes	\$5,716,872	\$9,534,894	\$7,922,033	\$637,408
Minimum 1 Year Return	-28.21	-27.46	-27.74	-46.48
Maximum 1 Year Return	72.40	67.81	68.69	84.19
Minimum 3 Year Return	-7.39	-10.05	-8.20	-18.68
Maximum 3 Year Return	43.80	42.73	39.82	31.49
Minimum 5 Year Return	-1.15	-1.09	-0.76	-9.91
Maximum 5 Year Return	38.59	38.56	37.88	27.66
Minimum 7 Year Return	1.27	3.59	2.54	-5.94
Maximum 7 Year Return	33.77	36.51	35.37	23.77
Minimum 10 Year Return	8.85	9.28	9.19	1.65
Maximum 10 Year Return	28.17	29.73	28.63	22.05
Minimum Expected Return*	-11.72	-10.59	-8.74	-26.39
Maximum Expected Return**	46.78	48.62	45.28	51.45

* Minimum Expected Return is Arithmetic Return minus 2 times the standard deviation.

** Maximum Expected Return is Arithmetic Return plus 2 times the standard deviation.

The portfolio trounces an investment in the All Stocks universe over the same period. There, \$10,000 grows to \$637,408, an average annual compound gain of 10.40 percent. Risk, at 19.46 percent, was also significantly higher, and the lower return married to the higher risk brought the All Stocks universe's Sharpe ratio to .28.

All base rates for the combined Utility/Consumer Staples portfolio were positive, with the combined 50-stock portfolio beating the All Stocks universe in 87 percent of all rolling five-year periods and 97 percent of all rolling ten-year periods. Table 24.CS2 shows the base rates for the individual strategies as well as the combined strategy versus All Stocks.

TABLE 24.CS2

Base Rates For Various Strategies

	Utility top 25 Value Factor 2				Consumer Staples top 25 Shareholder Yld				Combined			
	Won	Lost	Base Rate	Excess Return	Won	Lost	Base Rate	Excess Return	Won	Lost	Base Rate	Excess Return
Single-Year Return	319	174	65%	5.40%	357	136	72%	6.49%	335	158	68%	5.95%
Rolling Three-Year Compound Return	374	95	80%	5.70%	382	87	81%	6.74%	388	81	83%	6.38%
Rolling Five-Year Compound Return	361	84	81%	5.65%	404	41	91%	6.76%	388	57	87%	6.39%
Rolling Seven-Year Compound Return	367	54	87%	5.53%	402	19	95%	6.88%	385	36	91%	6.41%
Rolling 10-Year Compound Return	362	23	94%	5.33%	374	11	97%	6.70%	375	10	97%	6.22%

Table 24.CS3 shows the worst case scenarios for the strategy. The maximum decline ever suffered combined portfolio was a loss of 34 percent between October 2007 and February 2009, which is considerably better than the 55 percent drop the All Stocks universe suffered over the same period.

T A B L E 24.CS3

Worst-Case Scenarios: All 20 Percent or Greater Declines for Combined Portfolio, January 1, 1968 to December 31, 2009

Peak Date	Peak Index Value	Trough Date	Trough Index Value	Recovery Date	Decline (%)	Decline Duration	Recovery Duration
Nov-68	1.34	Jun-70	1.04	Dec-70	-22.20%	19	6
Nov-72	1.57	Sep-74	1.09	Mar-75	-30.46%	22	6
Aug-87	32.20	Nov-87	25.05	Jul-88	-22.21%	3	8
Apr-02	275.15	Sep-02	220.01	May-03	-20.04%	5	8
Oct-07	744.76	Feb-09	488.64	Nov-09	-34.39%	16	9
Average					-25.86%	13	7.4

As Table 24.CS4 demonstrates, the worst calendar-year return for the strategy occurred in 2008, when it lost 20 percent, half as bad as the 41 percent decline suffered by the All Stocks universe.

T A B L E 24.CS4 Annual Results

Year	Combined Portfolio	All Stocks	Year	Combined Portfolio	All Stocks
1968	31.71	29.17	1992	13.08	13.59
1969	-14.65	-18.15	1993	6.35	18.86
1970	19.36	-4.98	1994	-0.17	-1.95
1971	11.12	21.11	1995	30.22	30.57
1972	3.76	11.45	1996	17.04	18.24
1973	-13.55	-27.65	1997	33.28	23.74
1974	-10.90	-26.53	1998	16.74	1.83
1975	58.75	48.66	1999	-6.02	31.91
1976	36.59	36.16	2000	39.50	-6.66
1977	13.66	6.39	2001	11.09	2.01
1978	10.81	12.04	2002	-11.80	-19.14
1979	26.70	32.82	2003	54.29	52.61
1980	17.16	32.62	2004	23.69	18.46
1981	22.19	2.99	2005	8.89	8.10

1982	39.00	24.46	2006	31.38	18.45
1983	37.18	26.40	2007	12.88	1.71
1984	22.52	-1.16	2008	-20.35	-40.85
1985	47.99	31.01	2009	41.06	47.28
1986	28.29	11.68			
1987	-2.88	-2.48	Minimum	-20.35	-40.85
1988	37.28	21.45	Maximum	58.75	52.61
1989	33.79	23.00	Average	18.82	12.75
1990	1.80	-13.50	Median	18.26	15.91
1991	31.58	39.82	Std Dev	19.32	21.43

Indeed, if you look at the bear market years, you'll see that the strategy usually does significantly better than All Stocks when prices are falling. In fact, in three of the down years for All Stocks, the combined 50-stock portfolio actually earned money. As Figure 24.CS1 shows, the strategy generates excess returns over the All Stocks universe in the majority of rolling five-year periods, with a great imbalance to the times it is doing more than five percent better than All Stocks over the previous five years.

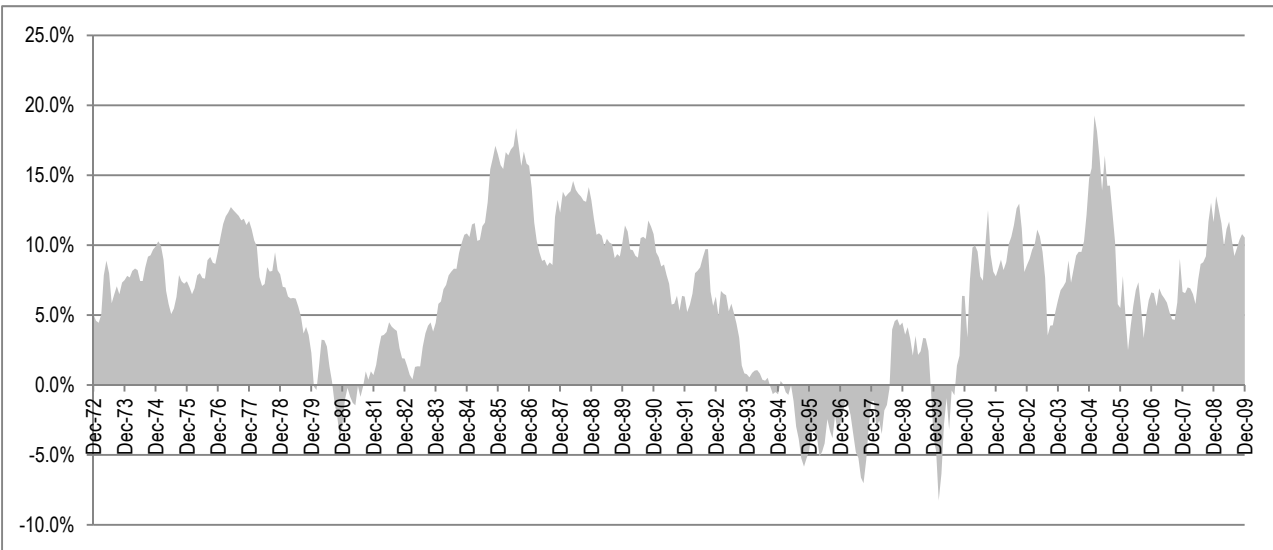


FIGURE 24.CS1

Five year Average Annual Compound Excess (Deficient) Return Combined Portfolio minus All Stocks, January 1, 1968 to December 31, 2009

The worst five-years versus All Stocks were those ending in February 2000, when it lost 8.32 percent per year versus the All Stocks universe. That was, of course, just one month before the popping of the biggest Wall Street bubble in over 70 years, and it shouldn't surprise us that this very conservative strategy fell behind the All Stocks universe at that time. Yet as the chart also

demonstrates, you would also have consistently lagged the All Stock universe on a rolling five-year return basis starting in May 1995 and only pulling back ahead in late 1999. Four years of underperformance might drive many investors to rethink their commitment to any strategy. To add insult to injury, on a one-year basis, you would have had to suffer the indignity of living with a *loss* of six percent in 1999, a year that saw the All Stocks universe climb 32 percent and more speculative indexes like the NASDAQ soar by over 77 percent. That type of underperformance would almost certainly get any professional money manager fired, even if you used an appropriate benchmark like the Russell 3000 Value Index—which grew by a far more modest seven percent in 1999. These types of return dispersions often drive investors to abandon strategies that have proven to be great performers over the long-term, but hit a big short-term speed bump.

Of course, investors are generally driven out of a strategy at or near the time that it is about to turn a corner and go on to offer tremendous outperformance. For example, the conservative 50-stock Utility/Consumer Staples portfolio went on to earn an average annual compound return of 16.99 percent between December 31st, 1999 and December 31st, 2009, turning \$10,000 into \$48,027 in the worst decade for stocks in 110 years. And what of the mighty NASDAQ over the same time period? It lost nine percent per year, turning \$10,000 into just \$4,000. Tables 24.CS5 and 24.CS6 show best and worst case returns for the strategy on a percentage and terminal value of a \$10,000 investment basis.

T A B L E 24.CS5

Best and Worst Average Annual Compound Returns over Period for Monthly Data, January 1, 1968 to December 31, 2009

For Any	1-Year Period	3-Year Period	5-Year Period	7-Year Period	10-Year Period
Combined Portfolio Minimum Compound Return	-27.19%	-8.16%	-0.72%	2.78%	9.41%
Combined Portfolio Maximum Compound Return	66.04%	38.58%	37.02%	34.88%	28.71%
All Stocks Minimum Compound Return	-46.49%	-18.68%	-9.91%	-5.94%	1.65%
All Stocks Maximum Compound Return	84.19%	31.49%	27.66%	23.77%	22.05%

T A B L E 24.CS6

Terminal Value of \$10,000 Invested for Best and Worst Average Annual Compound Returns over Period for Monthly Data, January 1, 1968 to December 31, 2009

For Any	1-Year Period	3-Year Period	5-Year Period	7-Year Period	10-Year Period
Combined Portfolio Minimum \$10,000 Value	\$7,281	\$7,746	\$9,644	\$12,119	\$24,590
Combined Portfolio Maximum \$10,000 Value	\$16,604	\$26,613	\$48,305	\$81,201	\$124,791
All Stocks Minimum \$10,000 Value	\$5,351	\$5,379	\$5,936	\$6,512	\$11,779
All Stocks Maximum \$10,000 Value	\$18,419	\$22,734	\$33,903	\$44,504	\$73,345

Table 24.CS7 shows the returns by decade.

TABLE 24.CS7

Average Annual Compound Rates of Return by Decade					
	1960s*	1970s	1980s	1990s	2000s**
Combined Portfolio	6.38%	14.26%	27.29%	13.19%	16.99%
All Stocks	0.87%	7.56%	16.78%	15.35%	4.39%

* Returns for January 1, 1968 to December 31, 1969

** Returns for January 1, 2000 to December 31, 2009

For The Most Conservative Investors

Given the turmoil of equity markets over the last ten years, many investors have been frightened out of equity markets. If history is a reliable guide that will virtually insure that their portfolios will not grow enough to meet their retirement goals. One recommendation for such investors would be to use this 50-stock portfolio in combination with intermediate-term government bonds.

A portfolio that was 50 percent invested in this 50-stock portfolio and 50 percent invested in U.S. intermediate-term government bonds would have earned 12.84 percent between December 31st, 1967 and December 31st, 2009. That return would have turned \$10,000 into \$1,599,495, still more than double the return earned by investing in the All Stocks universe alone. Because of the 50 percent allocation to bonds, the portfolio's standard deviation of return drops to 8.07 percent, pushing the Sharpe ratio up to .97. The maximum decline for the portfolio plummeted, with a maximum peak-to-trough decline of 14 percent.

I think even the most conservative investor could weather a drop of 14 percent, particularly when others are losing more than 50 percent of their portfolio's value. This portfolio, for example, lost just 3.62 percent in 2008, whereas the All Stocks universe was down 41 percent. Keep in mind that this type of conservative investment won't keep up in strong equity markets, and that you need to rebalance the portfolio every year.

Implications

From our broad sector analysis we've learned that we can create a portfolio that outperforms the All Stocks universe—while taking less risk—by selecting stocks from the two least volatile sectors, utilities and consumer staples. Conservative investors should remember that the portfolio is likely to lag the index in frothy, speculative markets. For the most risk averse, the addition of intermediate term U.S. bonds is worth considering, since that strategy never lost more than eight percent in any calendar year and had a maximum decline of just 14 percent over the 42 years analyzed. The key thing for conservative investors is to stick with the program, since it will be most important to rebalance the portfolio to a fifty-fifty weighting precisely when it is the most difficult to do so, like when the stock portion looked very frightening at the end of 2008. No strategy is any good if you refuse to follow it.