

**SHENANDOAH  
ASSET  
MANAGEMENT, L.L.C.**

**Research:**  
**Managing vs. Alternative Benchmarks**  
*January, 2005*

Russell 2500 (SMid)  
Russell Midcap  
Russell Midcap Value  
Russell Midcap Growth  
Russell Top 200 (Mega-Cap)

# Shenandoah Research

## *Simulated Returns vs. Various Russell Benchmark Indices*

In response to an inquiry regarding the application of Shenandoah's Midcap investment process versus benchmark indices other than the S&P 400 Midcap index, we have completed research on a project in which we apply our process to the Russell indices:

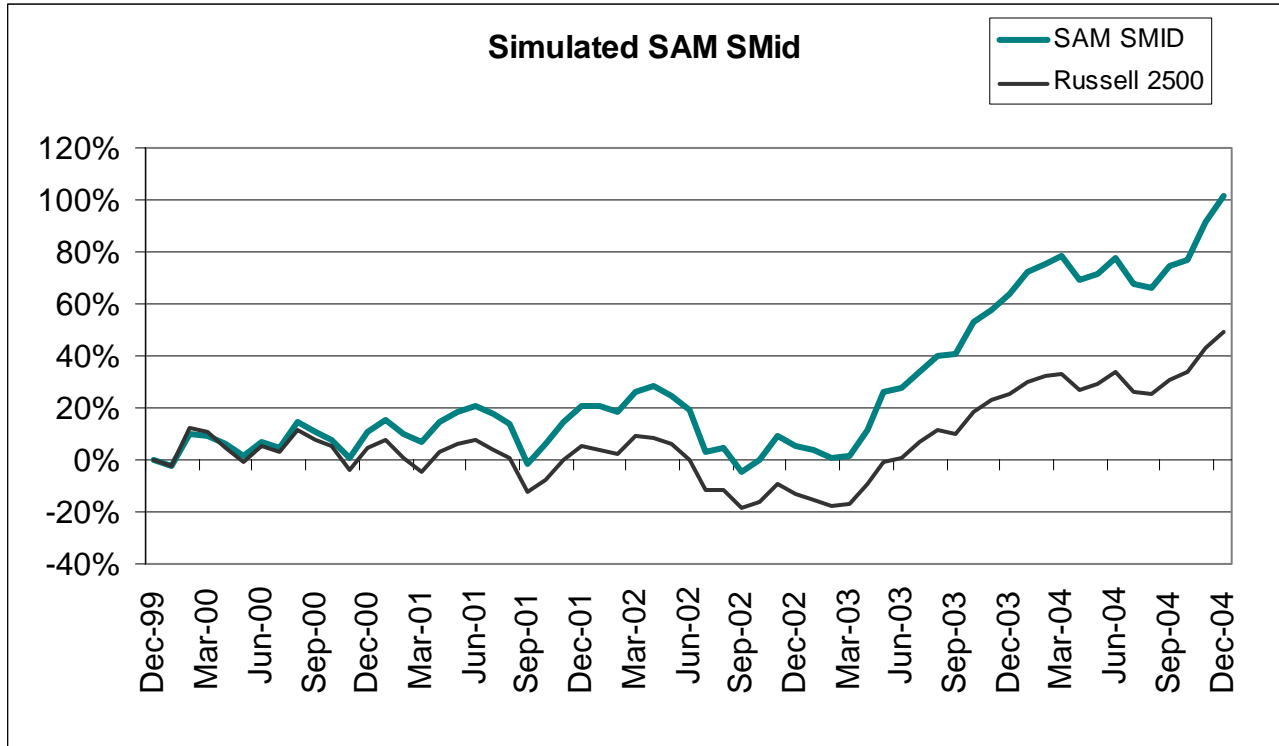
- Russell 2500 Index (SMid)
- Russell Midcap Index
- Russell Midcap Value Index
- Russell Midcap Growth Index
- Russell Top 200 Index (Mega-cap.)

### Observations:

- The study covered a five year period from 1/1/2000 through 12/31/2004.
- All simulated portfolios were generated using exactly the same stock selection and portfolio construction (risk-control) processes employed by the current (live) Shenandoah Midcap investment strategy.
- All simulated returns are reduced by expected transaction costs.
- **Performance: The Shenandoah process added value to all of the indices in the study:**
  - SMid: +6.7% alpha p.a. vs. Russell 2500 Index (tracking error = 4.0%)
  - Midcap Core: +3.8% alpha p.a. vs. Russell Midcap Index (tracking error = 3.9%);
  - Midcap Value: +3.4% alpha p.a. vs. Russell Midcap Value Index (tracking error = 3.1%);
  - Midcap Growth: +2.3% alpha p.a. vs. Russell Midcap Growth Index (tracking error = 4.3%).
  - Mega-Cap.: +3.2% alpha p.a. vs. Russell Top 200 Index (tracking error = 3.4%)
- The performance was strongest versus the Russell 2500 and the broad Russell Midcap index, most likely due to the increased number of stocks in the index (selection set) and more broadly diversified benchmark. **As a reminder, the stock selection and portfolio construction algorithms were limited to buying only those stocks in the benchmark index for each individual test.**
- Performance versus the Russell Midcap and Russell Midcap Value Index was consistently strong with very low realized tracking error.
- Performance versus the Russell Midcap Growth index was good but somewhat weaker than simulated performance versus the Russell Midcap or Russell Midcap Value index. This is due to the large exposure of the Russell Midcap Growth index to extremely high beta stocks. The period of this study (2000-2004) was marked by numerous periods of outlier performance by high beta stocks. The Shenandoah process has some difficulty in periods where stocks returns are primarily driven by non-fundamental factors, i.e., beta.

# Shenandoah SMid (simulated)

## *Benchmark = Russell 2500 Index*



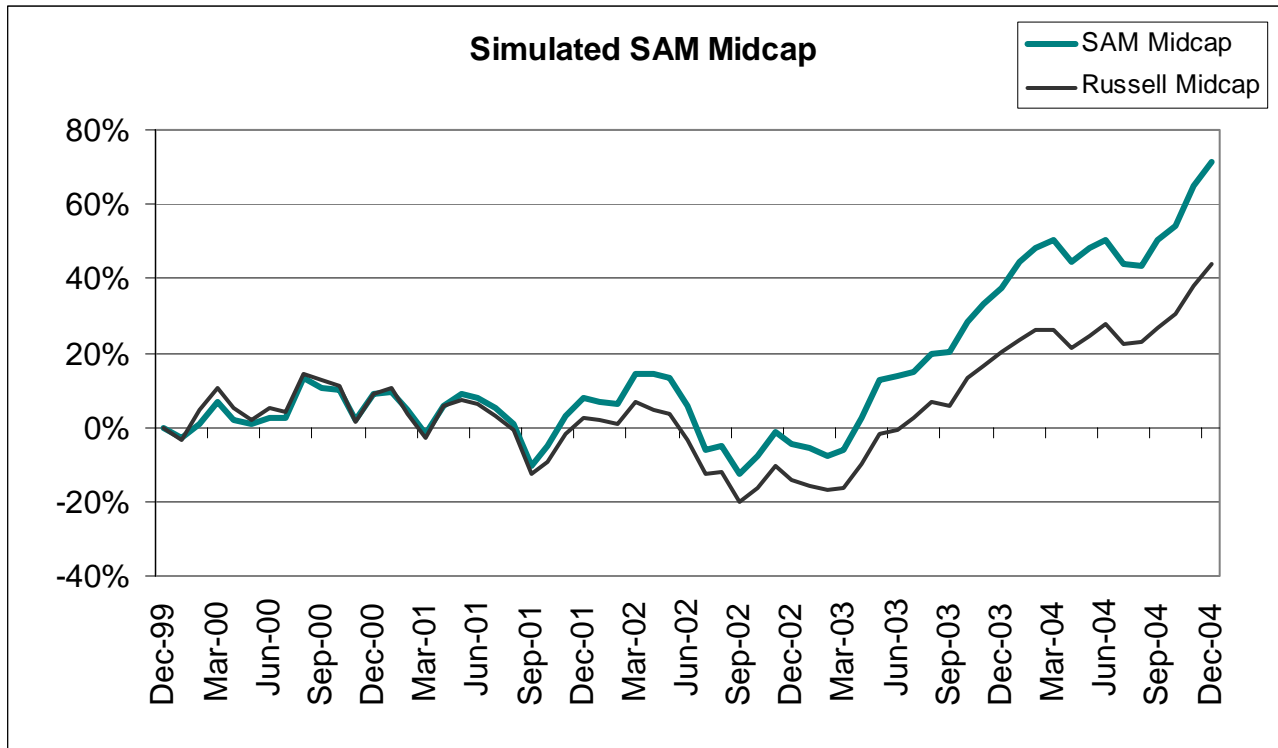
	Port	Russell 2500	Active Return
Cuml Rtn	101.4%	49.0%	52.4%
Ann Rtn	15.0%	8.3%	6.7%
Ann Stdev	20.0%	19.7%	4.0%
%pos months	63%		
2004	23.2%	18.5%	4.7%
2003	54.7%	45.2%	9.5%
2002	-12.7%	-17.7%	5.0%
2001	9.3%	0.8%	8.5%
2000	10.7%	4.4%	6.3%

### Comments:

- Performance: +6.7% per annum versus benchmark
- Benchmark: Russell 2500 Index
- Expected Tracking Error: 4.0%
- Realized Tracking Error: 4.0%
- Turnover: 100-120% p.a. (high due to annual Russell index reconstitution)
- Added value in 63% of months
- Stock Selection Universe: All stocks in the Russell 2500 Index (benchmark)
- Transaction Costs: Simulated portfolio returns are reduced by expected transaction costs.
- Stock selection and portfolio construction (risk-control) methodologies are identical to the processes employed by the current Shenandoah Midcap portfolio.

# Shenandoah Midcap (simulated)

*Benchmark = Russell Midcap Index*



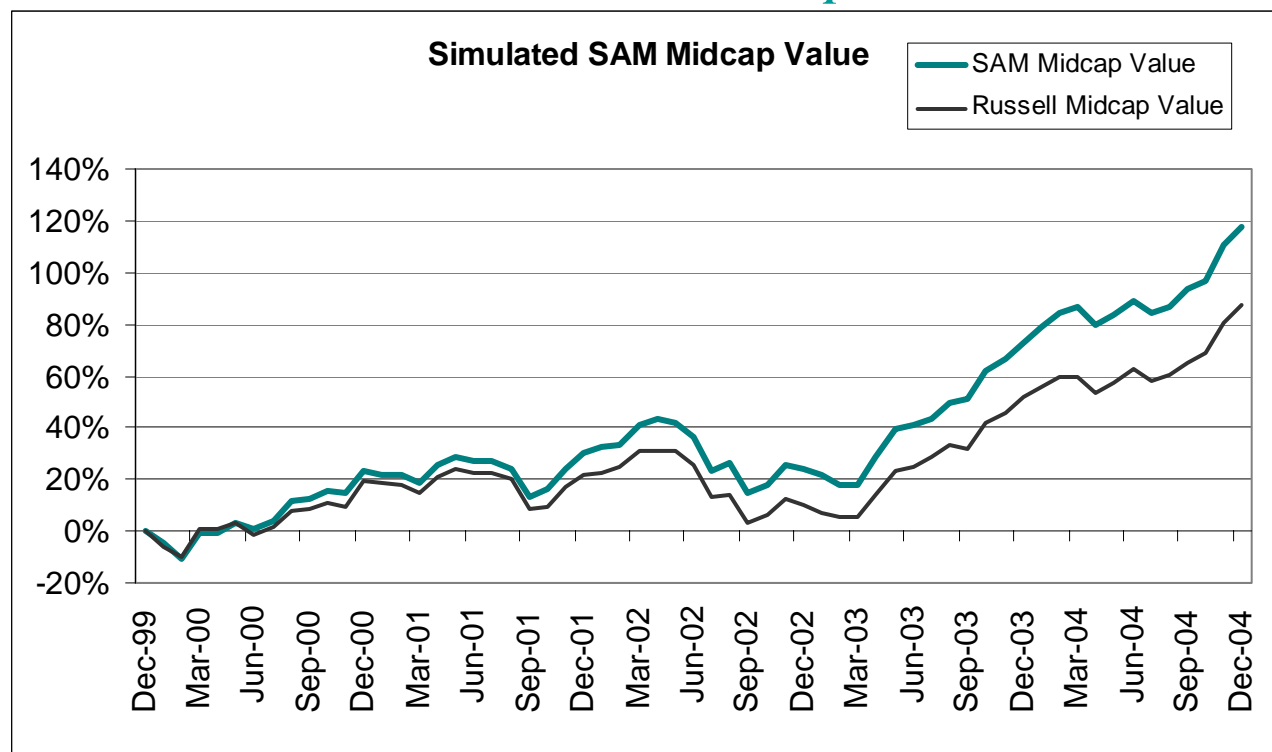
	Port	Russell Midcap	Active Return
Cuml Rtn	71.6%	44.0%	27.7%
Ann Rtn	11.4%	7.6%	3.8%
Ann Stdev	17.3%	17.5%	3.9%
%pos months	63%		
2004	24.7%	20.0%	4.7%
2003	43.9%	39.7%	4.2%
2002	-11.2%	-16.0%	4.9%
2001	-1.1%	-6.2%	5.1%
2000	8.9%	9.0%	-0.2%

### Comments:

- Performance: +3.8% per annum versus benchmark
- Benchmark: Russell Midcap Index
- Expected Tracking Error: 4.0%
- Realized Tracking Error: 3.9%
- Turnover: 100-120% p.a. (high due to annual Russell index reconstitution)
- Added value in 63% of months
- Stock Selection Universe: All stocks in the Russell Midcap Index (benchmark)
- Transaction Costs: Simulated portfolio returns are reduced by expected transaction costs.
- Stock selection and portfolio construction (risk-control) methodologies are identical to the processes employed by the current Shenandoah Midcap portfolio.

# Shenandoah Midcap Value (simulated)

Benchmark = Russell Midcap Value Index



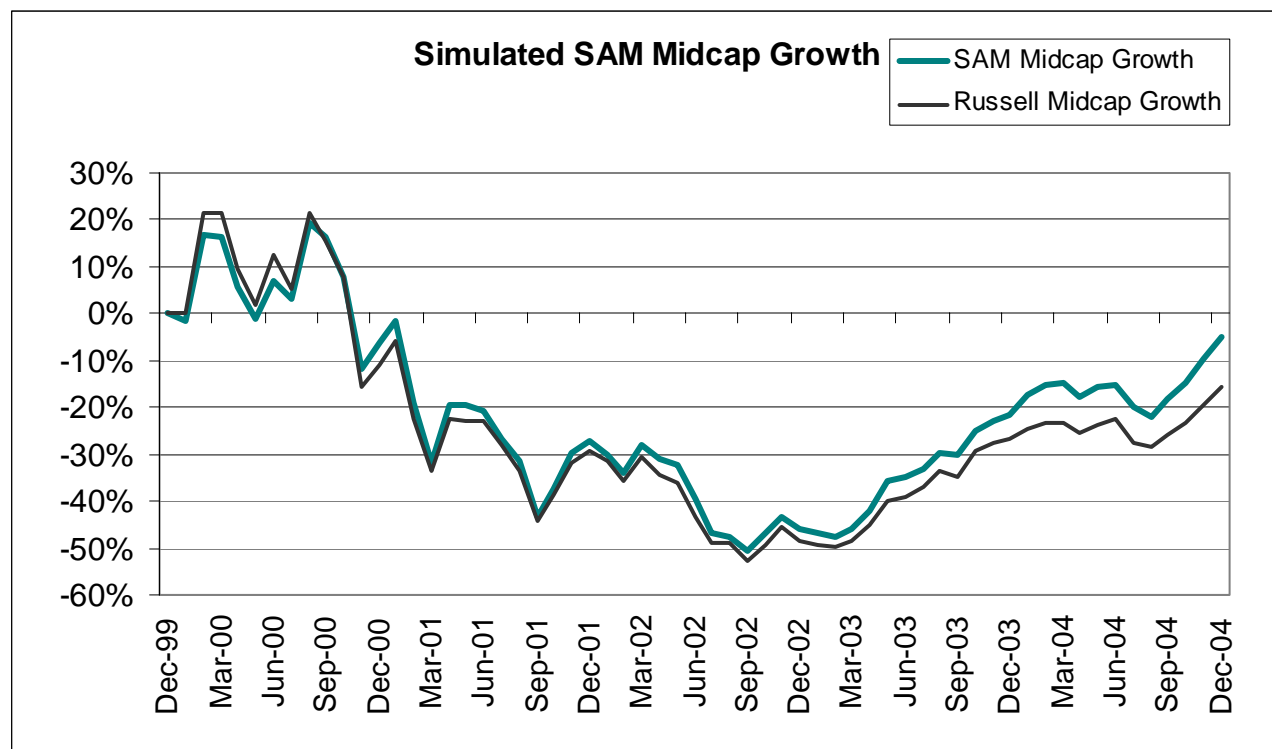
	Port	Russ Mid Value	Active Return
Cuml Rtn	117.3%	87.3%	30.0%
Ann Rtn	16.8%	13.4%	3.4%
Ann Stdev	15.1%	15.3%	3.1%
%pos months	63%		
2004	25.5%	23.3%	2.2%
2003	39.7%	38.0%	1.7%
2002	-5.1%	-9.5%	4.4%
2001	5.8%	2.1%	3.7%
2000	23.4%	19.2%	4.2%

## Comments:

- Performance: +3.4% per annum versus benchmark
- Benchmark: Russell Midcap Value Index
- Expected Tracking Error: 4.0%
- Realized Tracking Error: 3.1%
- Turnover: 100-120% p.a. (high due to annual Russell index reconstitution)
- Added value in 63% of months
- Stock Selection Universe: All stocks in the Russell Midcap Value Index (benchmark)
- Transaction Costs: Simulated portfolio returns are reduced by expected transaction costs.
- Stock selection and portfolio construction (risk-control) methodologies are identical to the processes employed by the current Shenandoah Midcap portfolio.

# Shenandoah Midcap Growth (simulated)

Benchmark = Russell Midcap Growth Index



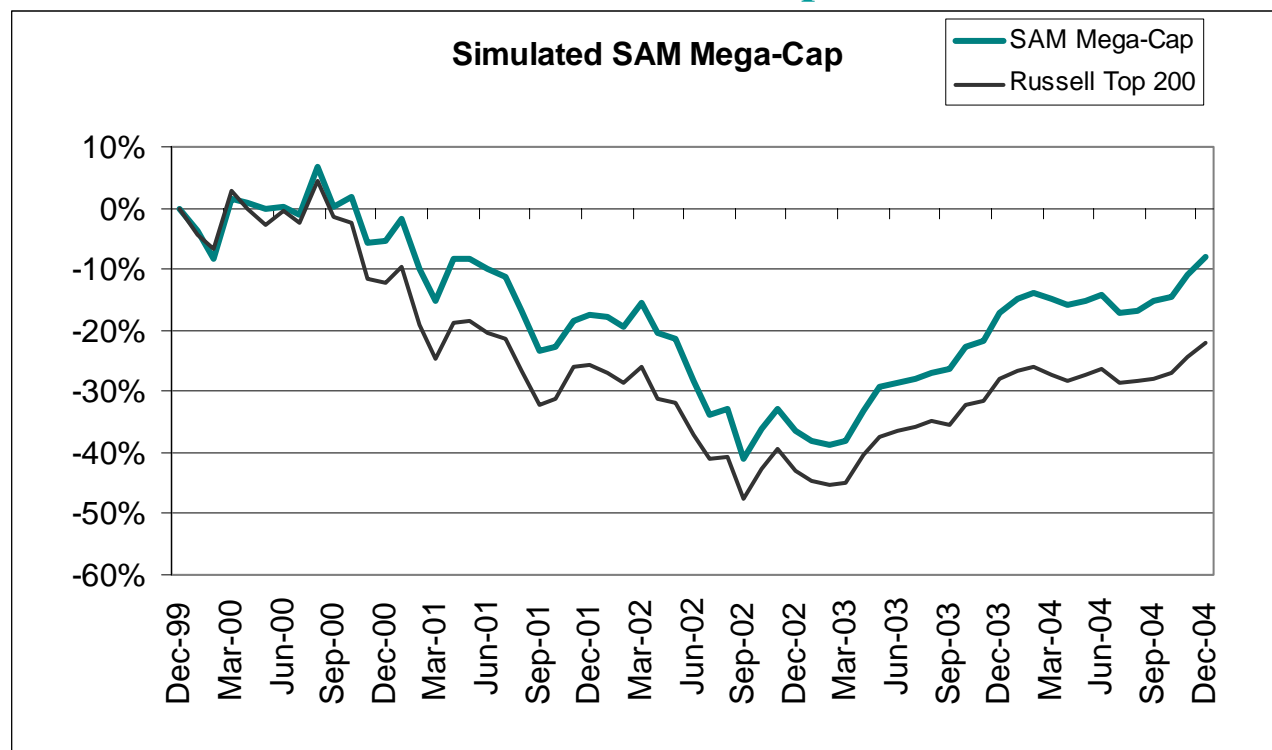
	Port	Russ Mid Growth	Active Return
Cuml Rtn	-5.1%	-15.6%	10.5%
Ann Rtn	-1.0%	-3.3%	2.3%
Ann Stdev	28.0%	28.4%	4.3%
%pos months	62%		
2004	21.4%	15.4%	6.0%
2003	44.9%	42.4%	2.5%
2002	-26.1%	-27.4%	1.3%
2001	-22.0%	-20.6%	-1.4%
2000	-6.4%	-11.0%	4.5%

## Comments:

- Performance: +2.3% per annum versus benchmark
- Benchmark: Russell Midcap Growth Index
- Expected Tracking Error: 4.0%
- Realized Tracking Error: 4.3%
- Turnover: 100-120% p.a. (high due to annual Russell index reconstitution)
- Added value in 62% of months
- Stock Selection Universe: All stocks in the Russell Midcap Growth Index (benchmark)
- Transaction Costs: Simulated portfolio returns are reduced by expected transaction costs.
- Stock selection and portfolio construction (risk-control) methodologies are identical to the processes employed by the current Shenandoah Midcap portfolio.

# Shenandoah Mega-Cap (simulated)

Benchmark = Russell Top 200 Index



	Port	Russell Top 200	Active Return
Cuml Rtn	-8.0%	-21.9%	13.9%
Ann Rtn	-1.7%	-4.8%	3.2%
Ann Stdev	16.5%	16.7%	3.4%
%pos months	58%		
2004	11.1%	8.3%	2.7%
2003	30.6%	26.7%	3.9%
2002	-23.2%	-23.4%	0.2%
2001	-12.7%	-15.3%	2.7%
2000	-5.5%	-12.3%	6.8%

## Comments:

- Performance: +3.2% per annum versus benchmark
- Benchmark: Russell Top 200 Index
- Expected Tracking Error: 4.0%
- Realized Tracking Error: 3.4%
- Turnover: 100-120% p.a. (high due to annual Russell index reconstitution)
- Added value in 58% of months
- Stock Selection Universe: All stocks in the Russell Top 200 Index (benchmark)
- Transaction Costs: Simulated portfolio returns are reduced by expected transaction costs.
- Stock selection and portfolio construction (risk-control) methodologies are identical to the processes employed by the current Shenandoah Midcap portfolio.