



# Mid-Caps – An Overlooked Asset Class

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As investors, we are all looking for that magic combination of return and risk. Intuitively with today’s ultra efficient markets, we know you can’t have one, high return, without having the other, high risk. However, we believe mid-cap stocks are an anomaly. Over a reasonably long-period of time, mid-caps have outperformed both large-caps and small-caps, with less relative risk as measured by historical index volatility. Because of this, they warrant consideration for any investor, large or small.

Much attention and research has been devoted to the traditional equity categories of large-caps and small-caps. A large institutional investor will often feel compelled based on conventional wisdom to have allocations to large-cap, small-cap, and international equities, both domestic and foreign fixed income securities, real estate, private equity, and alternative investments. Mid-cap equities (which we generally define as those with market caps of \$1 billion to \$15 billion) are often forgotten. When questioned about this, institutional fund executives and their consultants typically respond with comments like: “We expect our large-cap managers to have some (mid-cap stocks) at the bottom of their portfolios and our small-cap managers to have some at the top of their portfolios.”

This paper examines mid-caps as an asset class. The first point to note is that mid-cap mutual funds have attracted a lower amount of assets than small-cap mutual funds, even though they have better liquidity and, as we will show later, a better return/risk profile. Another way of looking at this is comparing the size of the fund category with the size of the corresponding Russell index. (Exhibit 1) Money in large-cap funds comprises about 13.0% of the aggregate market capitalization of the Russell 1000® Index, while money in small-cap funds makes up about 32.2% of the of the aggregate market capitalization in the Russell 2000® Index, and money in mid-cap mutual funds makes up only 9.0% of the total assets in the Russell Midcap® Index.

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**Exhibit 1: Fund Category Assets 12/31/11**

	Large-cap	Mid-cap	Small-cap
Assets in Fund Category	\$1.682 Trillion	\$339 Billion	\$354 Billion
Aggregate Market Capitalization in Corresponding Russell Index	\$12.91 Trillion	\$3.76 Trillion	\$1.10 Trillion
Fund Assets as % of Index Market	13.0%	9.0%	32.2%

Data source: Bank of America Merrill Lynch, Russell Investments

### Index Characteristics

To examine the relative performance of these equity asset classes, we used returns for the Russell indexes. All three indexes discussed here are subsets of the Russell 3000® Index, which comprises the largest 3000 US Stocks. The largest 1000 of these make up the Russell 1000 Index (large-cap), and the 2000 smallest the Russell 2000 Index (small-cap). The Russell Midcap Index is a subset of the Russell 1000 index, containing the 800 smallest stocks in the Russell 1000 Index. Despite this overlap, we will see that the performance pattern is quite different between the two indexes. The table below (Exhibit 2) details the key characteristics of these indexes as of the last rebalancing in June 2011.



**Exhibit 2: Index Characteristics 6/30/11**

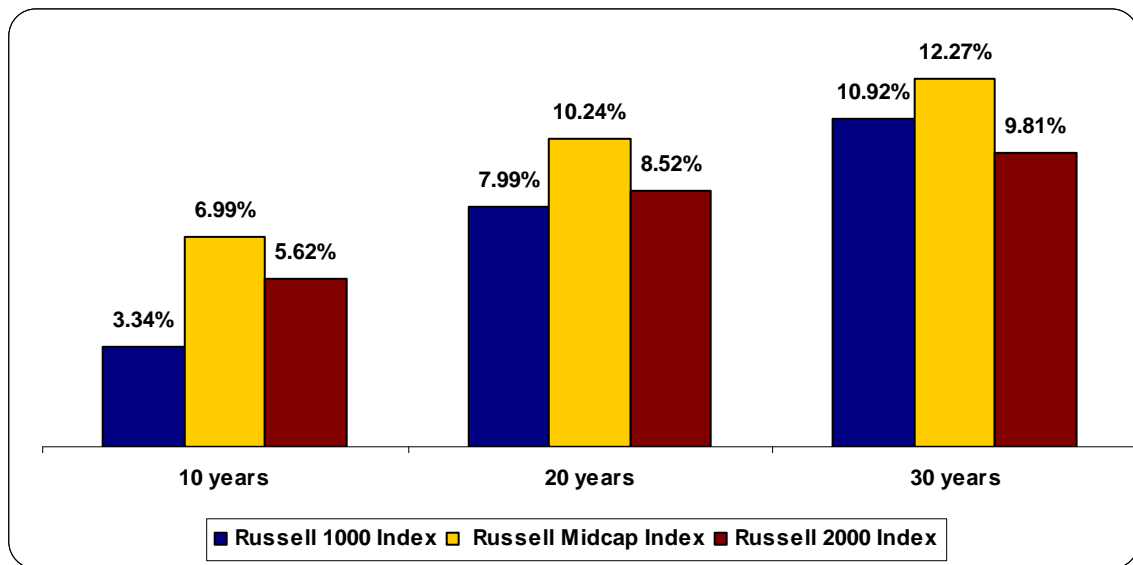
	Russell 1000 Index	Russell Midcap Index	Russell 2000 Index
Number of Stocks	985	789	1985
Weighted Average Market Capitalization	\$78.9 Billion	\$8.3 Billion	\$1.3 Billion
Median Market Capitalization	\$5.8 Billion	\$4.5 Billion	\$0.5 Billion
Smallest Stock	\$1.4 Billion	\$1.4 Billion	\$76 Million
Largest Stock	\$400.9 Billion	\$17.9 Billion	\$3.1 Billion
Beta vs Russell 3000 Index	1.00	1.17	1.28

Data Source: Russell Investments

### Absolute Performance

Conventional wisdom would suggest that over long time periods, returns ought to vary inversely with risk – large-cap stocks have offered the lowest return and have the lowest risk, etc. In this case, conventional wisdom would be wrong. On an absolute basis, mid-cap equities have outperformed both large-cap and small-cap over the 10, 20, and 30 year periods ended December 31, 2011. Large-cap equities have outperformed small-caps over the 30 year period as well. (Exhibit 3)

**Exhibit 3: Annualized Total Returns 12/31/2011**



Data Source: PSN Enterprise

The first question this brings up is whether this is just a fluke resulting from the chosen end points? It does not appear so: mid-caps have also had a strong record in shorter periods as well. An examination of rolling 10 year calendar periods for 1979 through 2011 shows that mid-caps consistently performed at least as well as the large-cap and small-cap indexes. (Exhibit 4) Of the 24 periods of 10 calendar years available, mid-caps were the best performer in 17 periods, with large-caps the best performers in the other 7. Small-caps were the worst performing index in 17 of the periods and large-cap in the other 7, and in none of the 10 year periods were mid-caps the worst performer. The most surprising finding over this period is that small-caps have never been the top performing group over any of these 10-year periods.

**Exhibit 4: Rolling Annualized 10 Year Return**



10 years Ended	Russell 1000 Index	Russell Midcap Index	Russell 2000 Index	Best	Worst
2011	3.34	6.99	5.62	Mid	Large
2010	1.83	6.54	6.33	Mid	Large
2009	-0.49	4.98	3.51	Mid	Large
2008	-1.09	3.18	3.02	Mid	Large
2007	6.20	9.91	7.08	Mid	Large
2006	8.64	12.14	9.44	Mid	Large
2005	9.29	12.49	9.26	Mid	Small
2004	12.16	14.50	11.54	Mid	Small
2003	11.00	12.18	9.47	Mid	Small
2002	9.19	9.92	7.15	Mid	Small
2001	12.84	13.58	11.51	Mid	Small
2000	17.67	18.28	15.53	Mid	Small
1999	18.11	15.92	13.40	Large	Small
1998	19.01	16.68	12.92	Large	Small
1997	18.06	17.68	15.77	Large	Small
1996	15.09	14.74	12.42	Large	Small
1995	14.65	14.67	11.33	Mid	Small
1994	14.19	14.45	11.55	Mid	Small
1993	14.67	14.86	10.91	Mid	Small
1992	15.86	15.78	11.83	Large	Small
1991	17.02	16.45	12.44	Large	Small
1990	13.13	12.75	8.47	Large	Small
1989	16.80	17.39	14.53	Mid	Small
1988	16.06	17.96	16.93	Mid	Large

Data Source: PSN Enterprise

### Risk and Risk-Adjusted Performance

While we have demonstrated that mid-caps have historically had stronger performance, is this due to a higher risk profile? Some basic measures of risk and risk-adjusted performance for the 30 years ended 12/31/11 are shown in Exhibit 5.

**Exhibit 5: 12/31/1981 – 12/31/2011 Return and Risk Statistics**

	Russell 1000 Index	Russell Midcap Index	Russell 2000 Index
Annualized Return	<b>10.92</b>	<b>12.27</b>	<b>9.81</b>
Standard Deviation	<b>17.11</b>	<b>19.05</b>	<b>21.98</b>
Beta*	<b>0.98</b>	<b>1.07</b>	<b>1.18</b>
Upside Capture Ratio*	<b>99.6%</b>	<b>110.6%</b>	<b>106.0%</b>
Downside Capture Ratio*	<b>98.3%</b>	<b>104.1%</b>	<b>117.1%</b>
Sharpe Ratio	<b>0.36</b>	<b>0.40</b>	<b>0.23</b>
Treynor Ratio*	<b>6.31</b>	<b>7.04</b>	<b>4.31</b>
Information Ratio*	<b>0.17</b>	<b>0.33</b>	<b>-0.11</b>
Sortino Ratio	<b>0.10</b>	<b>0.40</b>	<b>-0.15</b>

\*Risk index used is Russell 3000 Index

Data Source: PSN Enterprise

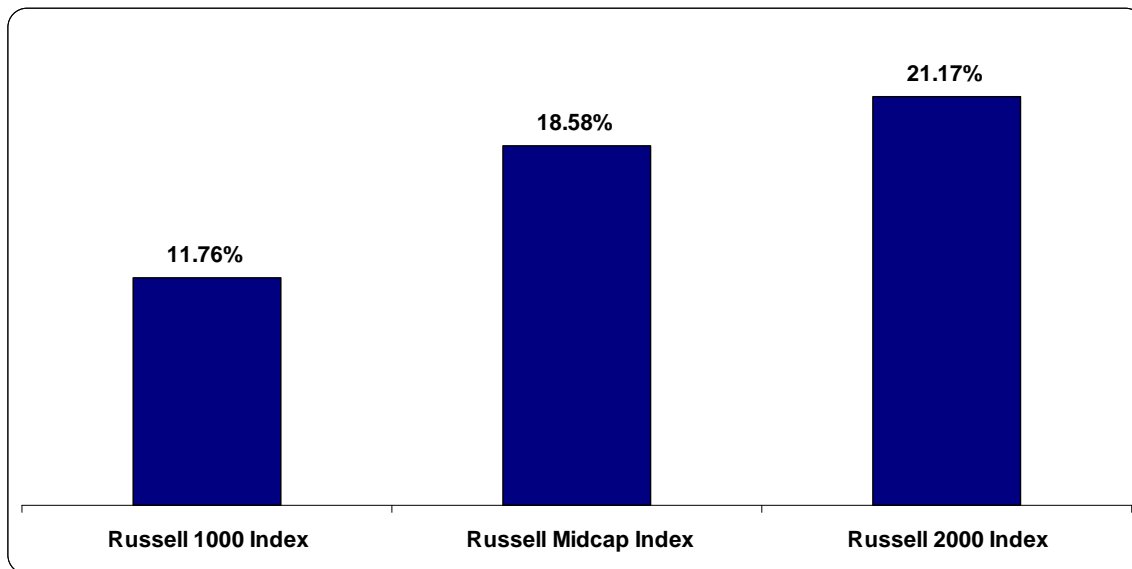


The data above suggests mid-cap stocks have acted as expected. As measured by standard deviation of returns, beta, and downside capture relative to the Russell 3000 Index, mid-caps have a risk level between large-caps and small-caps. In addition, the Sharpe and Treynor Ratios (which measure excess return over a risk free rate compared to standard deviation and beta respectively), also show that mid-cap investors have been adequately compensated for the higher risk level relative to large-caps and enjoying superior returns with less risk relative to small-caps.

## Diversification from Large-cap

One of the main reasons investors choose to allocate funds to small-caps is to achieve diversification away from a portfolio consisting of only large-cap funds. The evidence above suggests that mid-caps also achieve that diversification, and do it with a better historical risk/reward profile. The diversification question can be studied further by examining those years in which large-caps were the worst performers, as these would be the years in which investors would want diversification from the worst-performing capitalization range. Since 1979 there have been 15 calendar years in which this has happened as shown in Exhibit 6.

**Exhibit 6: Average Performance in Calendar Years 1979-2011 in which Large Cap was the Weakest Performer**



Data Source: PSN Enterprise

In these relatively difficult years for large-caps, mid-caps did not capture all of the excess returns that small-caps did, but substantially outperformed large-caps, providing the diversification at the times it was most important. Interestingly, in the other 18 years in which large-cap was not the worst performer, mid-caps substantially outperformed small-caps with an average return of 11.46% vs. 6.23%.

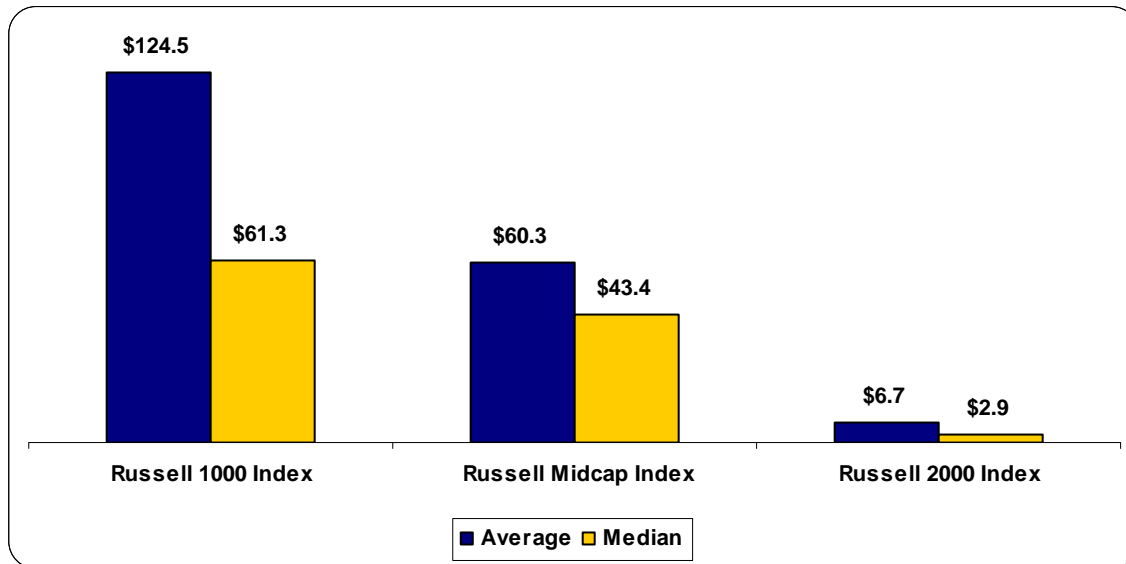
## Opportunities to Add Value

In an era of high correlations between stocks and of tremendous use of ETF's (exchange traded funds) to quickly increase/decrease equity exposure, some have suggested that there may be better opportunities for active managers to add value in the mid-cap space relative to the large-cap indexes. Although difficult to prove, there is some evidence to suggest the top large-cap stocks in each sector are "dragged" up or down by the money flows into and out of sector ETFs. Additionally, many more mid-cap companies are specialty companies operating in specific niches and can be less dependent on overall economic growth. These factors allow mid-cap stocks to fluctuate more on their own fundamentals than their large-cap brethren. It also appears clear that since, in general, mid-cap stocks are followed by fewer analysts than large-caps; there is more chance of surprise – positive or negative – in mid-caps versus large-caps. Large-cap oil service firm Baker Hughes, for example, is followed by about 20 analysts while its mid-cap counterpart, Oil States International, is followed by nine.



While small-caps share these advantages over large-caps, mid-caps also have some benefits over small-caps, in that on average they have tended to be more stable and proven companies, and the average and median stock in the mid-cap index offers far greater liquidity as shown in Exhibit 7. This becomes even more critical when contemplating that for a small-cap manager with \$1 billion under management, a 2% position is over 3 days average trading volume in the average small-cap stock, and over 7 days based on the median small-cap stock.

**Exhibit 7: Average Daily Trading Volume \$ millions 12/31/11**



Data Source: WONDA/William O’Neil & Co.

## Conclusion

At least over the time periods we studied, we believe there is enough evidence to suggest mid-cap equities offer an attractive trade off between risk and return for investors versus large and small-cap stocks and warrant consideration for any asset allocation.

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## Definitions

### **Russell 3000® Index**

The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market.

### **Russell 1000® Index**

The Russell 1000 Index measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000® Index and includes approximately 1000 of the largest securities based on a combination of their market cap and current index membership. The Russell 1000 represents approximately 92% of the U.S. market.

### **Russell MidCap® Index**

The Russell Midcap Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Midcap is a subset of the Russell 1000® Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership. The Russell Midcap represents approximately 31% of the total market capitalization of the Russell 1000 companies.

### **Russell 2000® Index**

The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 is a subset of the Russell 3000® Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership.

**For Risk/Return Statistics below, the index was the index under consideration (i.e. Russell 1000, Midcap, or 2000), while the “market” was the Russell 3000, used as an inclusive, broad market gauge. The same conclusions are reached by using the S&P 500 or Wilshire 5000 as the “market”.**

**Beta** – A measurement indicating the volatility of an index relative to a chosen market. A beta of 1 means an index has about the same volatility as the market. Higher betas are associated with higher risk levels, while lower betas are associated with lower risk levels.

**Correlation** - Correlation measures the strength and direction of linear association between two variables. The range of values is from -1 to 1. A value of negative 1 indicates a perfectly negative linear relationship, whereas a value of positive 1 indicates a perfectly positive linear relationship. A value of 0 indicates no linear relationship at all. “High” correlations generally refer to the tendency of stocks to all move in the same direction.

**Information Ratio** – The Information Ratio measures the active return of the index divided by the active risk of the index. Active return is the annualized differences of the index and the benchmark index, while active risk is measured by tracking error.

**Sharpe Ratio** - The Sharpe Ratio is a measure of risk-adjusted return. It divides excess return by risk. Excess return is defined as the annualized return of the index minus the annualized return of the risk free rate. Risk is defined by standard deviation. A high value for the Sharpe Ratio is generally considered to be positive since either the excess return is rather large or the level of risk is low.

**Sortino Ratio** - The Sortino Ratio is a measure of risk-adjusted return that divides excess return by risk. Excess return is defined as the annualized return of the index minus the annualized return of the market. Risk is defined by Downside Risk. A high value for the Sortino Ratio is generally considered to be positive since either the excess return is rather large or the level of risk is low.

**Standard Deviation** - Standard Deviation measures the central tendency of a probability distribution. The more the index return varies from its mean, the higher the standard deviation.

**Treynor Ratio** - The Treynor Ratio is a measure of risk-adjusted return (similar to Sharpe Ratio). It divides excess return by risk. Excess return is defined as the annualized return of the index minus the annualized return of the risk free rate. Risk is defined by beta. A high value for the Treynor Ratio is generally considered to be positive since either the excess return is rather large or the level of risk is low.

**Upside/Downside Market Capture Ratio** - The Upside Market Capture Ratio measures the index performance in up markets relative to the performance of the market itself. An up market is defined as any period (month or quarter) where the market’s return is greater than or equal to zero. The Downside Market Capture Ratio is calculated in a similar fashion for those periods in which the market return is less than zero.