The Bull Market & The Barron's 400

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BARRON'S 400

The Barron's 400 — Bull Market Performance in the Crosshairs

Stock market watchers fall into two camps when discussing the start of the current bull market: those who believe it started in March 2009 and consequently is the longest running bull market in history, and those who argue that it began in February 2016 and so is only 2½ years young[1]. At MarketGrader we fall into the former camp. But irrespective of when this bull market started, it goes without saying that it has been a remarkable stock rally. Consequently, we thought this might be a good time to review the performance of the Barron's 400 (B400) Index during the current bull market and to evaluate how well it has satisfied its stated objective as a measure of capital appreciation of the US equity market.

Under the assumption that the current bull market is the longest in stock market history, most experts agree that the rally started on March 9, 2009. This means that September 8, 2018, marked 9½ years, or 114 months, since its start. Since, for convenience, we will be using returns for calendar months for this analysis, we will begin the bull market rally on March 1, 2009 and therefore August 31, 2018, will mark the end of the 114-month period. Figure 1 presents the cumulative and annualized performance of the B400 over this 114-month period and compares it to the performance of well accepted size and style benchmarks.

Figure 1. B400 — Bull Market Performance
March 1, 2009 Through August 31, 2018

			Total Returns		Standard
Index		**Size & Style**	**Cumulative**	**Annualized**	**Deviation**
Barron's 400	B400	Multi Cap	453.6%	19.7%	15.2%
S&P 500	S&P 500	Large Cap Blend	382.0	18.0	12.3
Russell 1K	R1K	Large Cap Blend	388.5	18.2	12.5
Russell 1K Value	R1K Value	Large Cap Value	325.4	16.5	12.8
Russell 1K Growth	R1K Growth	Large Cap Growth	457.1	19.8	12.8
Russell 2K	R2K	Small Cap Blend	409.5	18.7	16.9
Russell 2K Value	R2K Value	Small Cap Value	359.4	17.4	17.0
Russell 2K Growth	R2K Growth	Small Cap Growth	460.9	19.9	17.4
S&P Mid Cap	S&P MC	Mid Cap Blend	426.1	19.1	14.7
Russell Mid Cap	RMC	Mid Cap Blend	429.9	19.2	14.1

Source: Bloomberg & MarketGrader Research.

The B400 is a multi-cap index that is size and style agnostic as it uses a proprietary bottoms-up methodology based on company fundamentals to select stocks to be included into the index. On a cumulative basis, the B400 outperformed the S&P 500 by more than 70 percentage points over this 9 ½ year period (453.6% versus 382.0%). This is significant as it translates into an outperformance of more than 170 basis points annually (19.7% versus 18.0%).

[1] See, "Bull Market Hits a Milestone: 3,456 Days. Most Americans Aren't at the Party," by Matthew Phillips published in *The New York Times*, August 22, 2018, and "Reflections on the 9½-Year-Long Bull Market," by John Prestbo published in *The Wall Street Journal*, September 9, 2018.

The adage that a rising tide lifts all boats could not ring truer than in the current bull market. All of the size and style benchmarks continue to perform very well. However, using the size and style categories as defined by Russell, it seems small stocks (as measured by the R2K) are doing slightly better than large stocks (as measured by the R1K) and growth stocks (as measured by the R1K Growth and R2K Growth) are significantly outperforming value (as measured by the R1K Value and R2K Value). Indeed, the R2K, so far, is up 409.5% while the R1K is up 388.5%. In addition, the R1K Growth and the R2K Growth are up 457.1% and 460.9%, respectively. While, the R1K Value and R2K Value are only up 325.4% and 359.4% over the same period. In summary, so far during the current bull market, small cap stocks are slightly outperforming large cap stocks and growth stocks are significantly outperforming value stocks.

Keeping this size and style summary in mind, it is obvious that from an equity asset allocation perspective, portfolios that allocated more capital to small companies and growth companies over this bull market run would be outperforming, in terms of capital appreciation, portfolios that were size and style neutral. Recall, that the primary objective of the B400 is to be a measure of the capital appreciation opportunities in the US equity market. We also know that the B400 not only significantly outperformed the S&P 500 but that it also satisfied its stated objective of providing a full measure of capital appreciation during this bull market. So how did the B400 do it? Was it overweight small stocks and growth stocks? The next section of this paper will provide the answer. Though it might be worth clarifying that for the B400 any over/under weighting of equity size and style categories is an outcome of the bottoms-up stock selection methodology and *not* an outcome of a top-down asset allocation strategy. In other words, the B400's methodology is not making active bets on the performance of the size and style categories but using company fundamentals to select the best companies irrespective of their size and style categories. If this stock selection turns out to be an implicit bet on a size and/or style category, then so be it.

Before we proceed to analyze the performance of the B400, a final observation from Figure 1. Notice the annual standard deviation of the B400 of 15.2% is greater than that of the R1K (the large cap benchmark) which has a standard deviation of 12.5% but less than that of the R2K (the small cap benchmark) which has a standard deviation of 16.9%. Again, this is to be expected as the B400 is a multi-cap index and holds both large cap and small cap stocks.

Return-Based Size & Style Loadings

There are two basic methodologies to analyze the sources of returns for a portfolio. The first, a holdings-based analysis, uses the performance of all of the individual securities held by a portfolio. Given that the B400 is reconstituted and rebalanced on a semi-annual schedule, and that over this 9½ year period the index was reconstituted 19 times, a holdings-based analysis of the B400 over this entire period will not only be cumbersome but may also be too granular so as to be insightful.

The second methodology is the returns-based style analysis. The objective of the returns-based style analysis is to try and "best" replicate the returns of a portfolio by holding a weighted portfolio of size and style benchmarks — in this case we are using the R1K Value, R1K Growth, R2K Value and R2K

Growth[2]. The methodology we employed assumes that the weights add up to 100% (i.e., there is no leverage) and the portfolio is fully invested (i.e., there is no cash holding). In addition, none of the weights could be negative (i.e., there is no shorting). Figure 2 below presents the implied weights (factor loadings) for the B400 and compares the results to the S&P 500 and two mid-cap indexes.[3]

Figure 2. B400 — Bull Market Returns-Based Size and Style Loadings
March 1, 2009 Through August 31, 2018

Benchmark	B400	S&P 500	S&P MC	Russell MC
R1K Value	20%	50%	14%	34%
R1K Growth	21	50	30	31
R2K Value	19	-	40	16
R2K Growth	40	-	16	19
Size Loadings:				
Large	41%	100%	44%	65%
Small	59	-	56	35%
Style Loadings				
Value	39%	50%	54%	50%
Growth	61	50	46	50
R-Square	77%	97%	87%	92%

Source: Returns from Bloomberg. Analysis by MarketGrader Research. "R-Square" is the R-Square from the OLS regression.

The factor loadings for each of the indexes illustrate the respective weights of the four size and style benchmarks. These factor loadings are such that the returns of the implied weighted portfolio (made up of the four size and style benchmarks) will best mimic the returns of the index. The degree to which the actual return variation can be explained by the implied weighted portfolio is indicated by the R-Square presented in the figure. Therefore, a large degree (97%) of the S&P 500's return variability over this period (and in general) can be explained by a portfolio that is 50% R1K Value and 50% R1K Growth making it a Large Cap blend benchmark.

As mentioned earlier, the factor loadings do not imply that the portfolio is holding the underlying size and style benchmarks (or even the stocks that are included in those benchmarks). Therefore, the S&P 500 is not holding the R1K Value and R1K Growth since we know it is made up of around 500 large cap stocks selected by a committee. This point is further clarified by the factor loadings of the Russell MC index. Note that factor loadings to the large cap benchmarks (R1K Value + R1K Growth) is 65% and to the small cap benchmarks (R2K Value + R2K Growth) is 35% and the implied weighted portfolio explains 92% of the return variability of the Russell MC. However, we know that that the Russell MC index actually holds no small cap stocks. According to its methodology, it is made up of the smallest

[2] By "best" we mean the weightings for the size and style benchmarks minimize the return variability between the returns of the actual portfolio and the return of the weighted portfolio.
[3] These weights are referred to as factor loadings so as to clarify that they are the weights derived from an optimization. The actual portfolio, may or may not, have the implied exposures.

800 stocks in the R1K. In other words, it is essentially the R1K (the largest 1000 stocks by market cap) less the largest 200 stocks.[4]

Which brings us to the B400. We know the stock selection methodology of the B400 is size and style agnostic[5]. In other words, the key determinant if a company gets selected into the index is its fundamentals. Therefore, the B400 is a multi-cap index that includes both large and small stocks. Over the current bull market run, the implied factor loadings that best explain the returns of the B400 are 20% in R1K Value, 21% in the R1K Growth, 19% in the R2K Value and 40% in the R2K Growth indexes. In terms of a size comparison only, this implies a total factor loading of 41% to large cap and 59% to small cap. While in terms of style comparison only, this implies a loading of 39% to value and 61% to growth.

This implied overweighting of small caps (relative to large caps) and growth stocks (relative to value stocks), partially explains the outperformance of the B400 relative to its peers as presented in Figure 1. However, notice that the factor loadings weighted portfolio in the case of the B400 only explains 77% of the variability in its returns. As we shall see in Figure 3, the remaining is a consequence of its stock selection methodology.

Figure 3, presents the expected returns of the factor loadings weighted portfolio (rebalanced annually) and compares it to the actual benchmarks.

Figure 3. B400 — Bull Market Alpha
March 1, 2009 Through August 31, 2018

	Annualized		
Index	**Total Return (TR)**	**Expected TR**	**Excess TR - Alpha**
B400	19.74%	18.80%	94 bps
S&P 500	18.01	18.03	-2
S&P MC	19.10	18.44	66
Russell MC	19.19	18.36	83

Source: MarketGrader Research. The "Expected TR" is calculated as the factor loadings times the annualized total returns of the size and style benchmarks. The "Excess TR" is the difference between the Total Return and the Expected Return.

Notice that over this period, the B400, S&P Mid Cap and Russell Mid Cap indexes experienced an annual return greater than that can be explained by the factor loadings. Consequently, all of the indexes have a positive alpha. But it is important to keep in mind that the implied sources of returns for the three indexes was significantly different: For the S&P Mid Cap and Russell Mid Cap, the outperformance is as a result of their "beta" measures of the mid cap style segment outperforming the "beta" measures of Russell large and small size segments. But for the B400, the outperformance is as a result of its bottoms-up stock selection methodology based on company fundamentals, outperforming the beta measures of the Russell large, small and mid-cap size segments.

[4] Which means that an investor allocating to the R1K and the Russell MC is essentially allocating to the R1K stocks while overweighting the bottom 800 stocks and therefore relatively underweighting the top 200 stocks.
[5] The methodology of the B400 incorporates constraints to ensure that the resulting index is diversified across size and sectors, but in most cases, they are not binding. For more, go to www.marketgrader.com.

Conclusions

This paper set out to explore the performance of the B400 over the current bull market run. We used an empirical approach that lets the return data speak for itself. Performance of the broad beta size and style factors as measured by the Russell benchmarks revealed that over the current bull market that started its run in March 2009 and continues through August 2018, small cap growth stocks were the sweet spot of the equity market. In other words, over this fantastic market rally, in which the broad market as measured by the S&P 500 had a cumulative gain of 380%, the only way for a broad portfolio to outperform the market was to be overweight the outperforming size and style factors (an overweight in outperforming sectors could have also achieved the outcome but that is the subject of another paper). Small (versus large) was the outperforming size factor and growth (versus value) was the outperforming style factor.

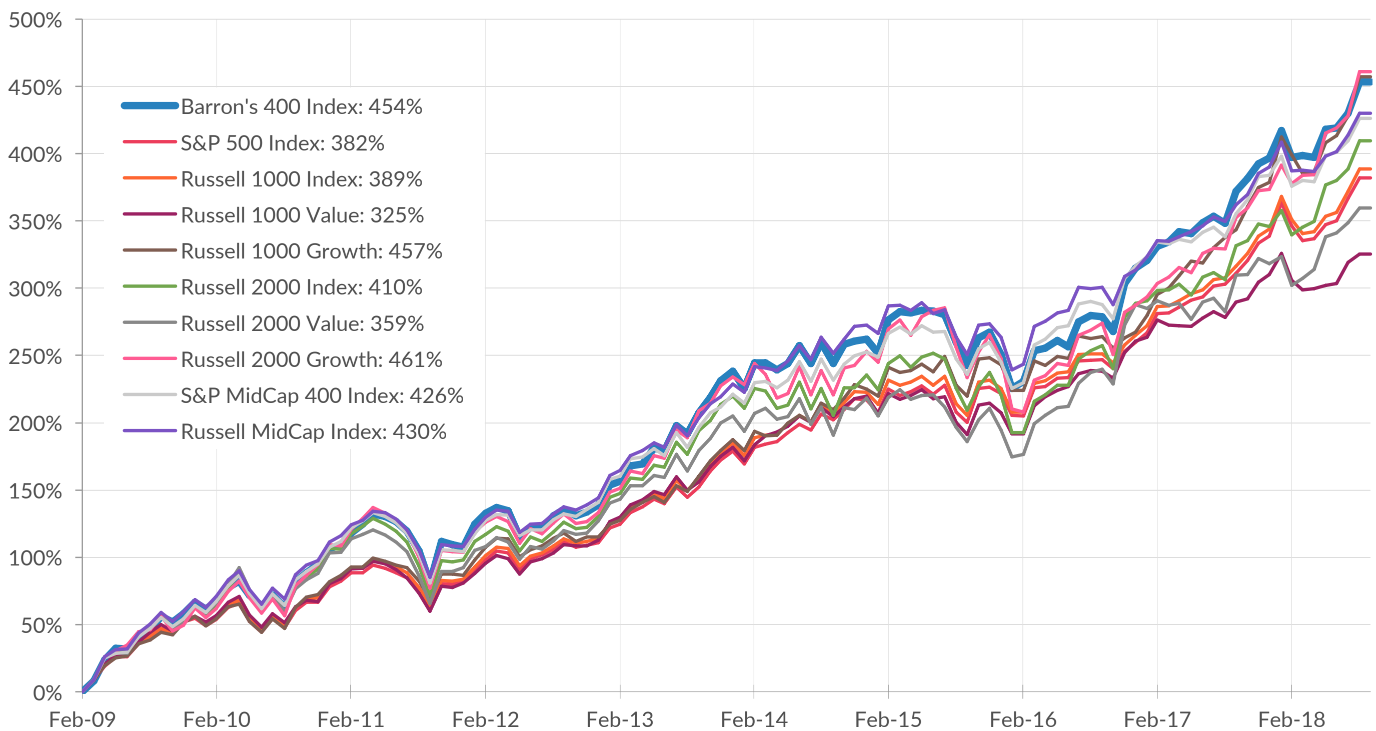
To understand the factors driving returns, we next performed a return-based style analysis on the broad indexes and the B400. The returns-based style analysis revealed that, as measured by the factor loadings, the B400 was overweight both the outperforming factors, over the current bull market run. Consequently, the B400 outperformed the broad market by more than 70 percentage points over this 9½ year period for a total cumulative gain of 452.6%, thereby, satisfying its primary objective of providing a measure of the capital appreciation opportunity within the US equity market. The B400 accomplished this remarkable feat not by taking bets on the outperforming size and style factors, but by staying true to its methodology, i.e., implementing a proprietary bottoms-up stock selection process that uses company fundamentals to select the 400 best companies as components of the index. It just so happened to be that this process selected more small companies and growth companies – the categories that outperformed during this bull market run. The stock selection methodology performed so well that the B400 also outperformed other beta mid cap benchmarks.

It is worth noting that although the B400 does not place top-down bets across size or style factors, the B400 stock selection methodology is designed to lean towards small to midcap companies in terms of size and towards growth companies in terms of style. MarketGrader believes that in the long-run the stock market has a natural upward trend and therefore included two key features into the design of the B400 that were meant to capture the above average equity premium of faster growing stocks. First, companies selected into the index should be trading at a reasonable price and should be profitable. This is the fundamental, quality-GARP-based stock selection screen incorporated into the methodology that is implemented twice a year. The second feature included into the methodology was the equal-weighting of all index constituents. This weighting rebalance is also implemented twice a year when the index is reconstituted. These two key features have allowed the index, over time, to select faster growing companies, which on average tend to be smaller than the average of the market cap weighted benchmark. Furthermore, equally weighting each company allows each company to contribute equally to the performance of the index, irrespective of its size.

The analysis presented in this paper is historical and since we know that past performance is not an indicator of future results, the next logical question is what does this mean for the B400 in terms of where the market is heading? We also know that if is virtually impossible, if not extremely difficult to predict, in terms of timing, what the market is going to do. Will this bull market continue? Or, has it run out of steam and is due for a correction? Or, as some doomsayers claim a crash is imminent?

Irrespective of what the market is going to do, we are certain that the B400 will stay true to its philosophy of implementing its tried and tested methodology of selecting 400 stocks every six months based on the fundamentals of the companies given the current financial and economic environment. The B400 has implemented this disciplined approach to reconstitute the index since its inception on December 31, 1997 and has continued doing so through two market cycles. The results speak for themselves: over the 20½ year period ending August 31, 2018, the B400 has had a total cumulative gain of 836.8% while the S&P 500 has grown by 312.0% — an outperformance greater than 500 percentage points.[6]

Bull Market Total Cumulative Return B400 vs. Benchmarks
March 1, 2009 Through August 31, 2018



Source: Bloomberg.

[6] Go to www.marketgrader.com/resources/pdf/B400_Factsheet_07172018.pdf to download the factsheet for the B400.