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Big Things Come in Small Packages:

Looking Into the S&P SmallCap 600®

INTRODUCTION

A recent paper by FTSE Russell rightly pointed out the well-timed launch of the Russell 2000® in 1984, an index meant to measure the small-cap segment of the U.S. equity market.[1] The launch was on the back of breakthrough research by Rolf Banz finding that "smaller firms have had higher risk-adjusted returns, on average, than larger firms."[2] At the time, the launch of this benchmark enabled Russell Investment's consulting clients to gauge the success of small-cap managers.

However, it was not until the early 1990s when the "small-cap premium" concept was really solidified. Nobel Prize winner Eugene F. Fama and co-author Kenneth R. French introduced the three-factor model of market risk, value, and small-cap factors that now serves as the foundation for much of the current research on the topic.[3] Following this research, the S&P SmallCap 600 was launched in 1994.

Although the S&P SmallCap 600 took an extra decade's worth of research into account in its construction as a benchmark, the Russell 2000 is far more widely used. According to eVestment Alliance, as of June 30, 2017, 93% of small-cap funds and 81% of assets in the space are benchmarked to the Russell 2000, compared with 3% of funds and 5% of assets benchmarked to the S&P SmallCap 600.

[1] FTSE Russell, "Getting Defensive About the Small Cap Premium", February 2016. https://www.ftserussell.com/sites/default/files/research/getting_defensive_about_the_small_cap_premium_final.pdf

[2] Banz, R., "The Relationship between Market Value and Return of Common Stocks," Journal of Financial Economics, 1981.

[3] Fama, E., and K. French, "The Cross-Section of Expected Stock Returns," Journal of Finance, 1992; Fama, E., and K. French, "Common Risk Factors in the Returns on Stocks and Bonds," Journal of Financial Economics, 1993.

Exhibit 1: Small-Cap Universe and Benchmark Representation

FUND TYPE:	NUMBER OF FUNDS	% BY NUMBER	ASSETS (USD MILLIONS)	% BY ASSETS
Total	832	-	974,724	-
Active	786	94%	725,229	74%
Passive	46	6%	249,495	26%
BENCHMARKED TO:				
Russell 2000*	776	93%	789,671	81%
S&P SmallCap 600*	25	3%	45,112	5%
Other	31	4%	139,941	14%

Source: eVestment Alliance, LLC. Data includes the eVestment US Small Cap Equity, US Passive Small Cap Equity, and US Enhanced Small Cap Equity Universes. The Russell 2000 and S&P SmallCap 600 rows include sub-indices such as Value and Growth. eVestment Alliance, LLC and its affiliated entities (collectively, "eVestment") collect information directly from investment management firms and other sources believed to be reliable, however, eVestment does not guarantee or warrant the accuracy, timeliness, or completeness of the information provided and is not responsible for any errors or omissions. Performance results may be provided with additional disclosures available on eVestment's systems and other important considerations such as fees that may be applicable. Not for general distribution and limited distribution may only be made pursuant to client's agreement terms. *All categories not necessarily included, totals may not equal 100%. Copyright 2012-2017 eVestment Alliance, LLC. All rights reserved. Table is provided for illustrative purposes.

Not only has the S&P SmallCap 600 had a higher Sharpe ratio than the Russell 2000 historically, but the S&P SmallCap 600 has outperformed the Russell 2000 over various time periods and market cycles.

Perhaps the longevity and prevalence of the Russell 2000 as a small-cap benchmark is why it has been widely used in research doubting whether the small-cap premium exists.[4] Even in FTSE Russell's own research, they show the Russell 2000 had a lower Sharpe ratio than the large and mid-cap Russell 1000 (0.34 versus 0.41, respectively) from June 1996 through August 2015. According to eVestment Alliance, from June 1996 through September 2017 the Sharpe ratio of the Russell 2000 was 0.31 while that of the Russell 1000 was 0.42.[5] However, the S&P SmallCap 600 had a Sharpe ratio of 0.43 over the same period.

Not only has the S&P SmallCap 600 had a higher Sharpe ratio than the Russell 2000 historically, but the S&P SmallCap 600 has outperformed the Russell 2000 over various time periods and market cycles. Furthermore, according to the S&P Dow Jones Indices SPIVA® U.S. Mid-Year 2017 Scorecard, the S&P SmallCap 600 outperformed 93.8% of all small-cap funds over a five-year period.[6]

In this paper, the three main points that will be discussed are:

1. The outperformance of the S&P SmallCap 600 versus the Russell 2000;
2. The performance of the indices compared with active managers; and
3. The case supporting the performance.

[4] Bryan, A. (2014), "Does the Small-Cap Premium Even Exist?" Morningstar; Kalesnik, V. and N. Beck (2014), "Busting the Myth About Size," Research Affiliates.

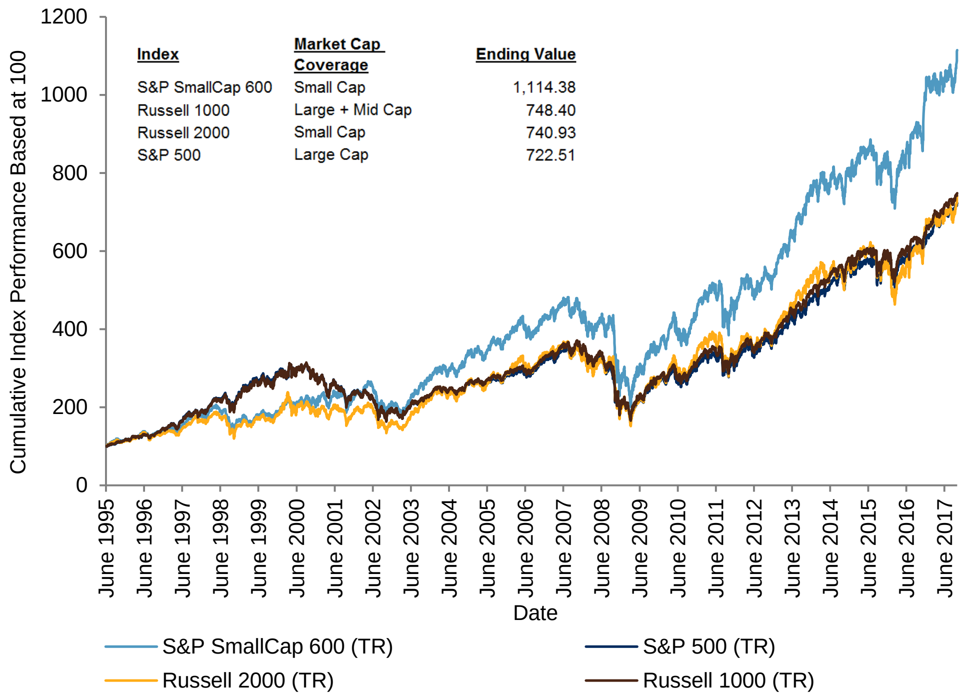
[5] The Sharpe Ratio calculation uses the Citigroup 3-month T-Bill Index as the risk-free rate.

[6] Soe, A. and R. Poirier, "SPIVA U.S. Mid-Year 2017 Scorecard," S&P Dow Jones Indices.

THE S&P SMALLCAP 600 OUTPERFORMS THE RUSSELL 2000

Let's begin with a simple example to demonstrate the long-term outperformance of the S&P SmallCap 600 over the Russell 2000 by showing the cumulative growth of USD 100 from June 1, 1995 to September 29, 2017. The S&P SmallCap 600 would end with a hypothetical value of USD 1,114.38, while the Russell 2000 ends with a hypothetical value of just USD 740.93. Another way to view this is that a market participant would hypothetically return 373% more with the S&P SmallCap 600. Over the period studied, the Russell 1000 slightly outperformed the Russell 2000 and the S&P 500. Since the return of the Russell 1000 was similar to that of the S&P 500, the S&P 500 will be used as the large-cap market benchmark in the analysis. It is also worth noting that the Russell 1000 includes both large- and mid-cap stocks, whereas the S&P 500 is purely a large-cap index.

Exhibit 2: Cumulative Performance of the S&P SmallCap 600 Versus the Russell 2000



Source: S&P Dow Jones Indices LLC. Data from June 1, 1995, to Sept. 29, 2017. Index performance based on total return in USD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Over the period studied, the S&P SmallCap 600 had an annualized return of 10.5% and annualized risk of 21.3%, generating a Sharpe ratio of 0.48.

Another way to measure S&P SmallCap 600 outperformance is by annualized return and risk, as measured by the standard deviation of returns. Since inception, the S&P SmallCap 600 had an annualized return of 11.6% and annualized risk of 18.3%, generating a Sharpe ratio of 0.50. Over the same time period, the Russell 2000 had an annualized return of 9.6%, annualized risk of 19.2%, and a Sharpe ratio of 0.37. The S&P

SmallCap 600's returns were higher than the Russell 2000 over every time period analyzed, while its risk was lower in every period.

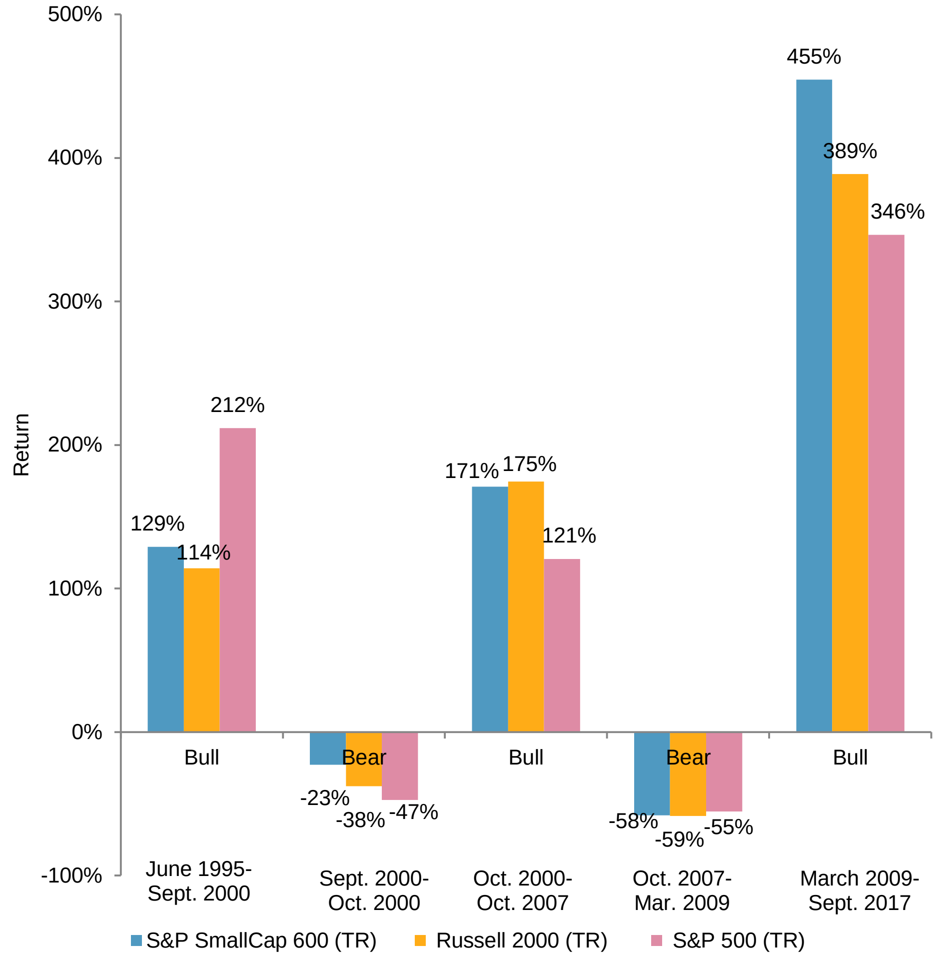
Exhibit 3: Annualized Return, Risk, and Sharpe Ratio

PERIOD	S&P SMALLCAP 600	RUSSELL 2000	DIFFERENCE
ANNUALIZED RETURNS (%)			
1-Year	21.1	20.7	0.3
3-Year	14.1	12.2	1.9
5-Year	15.6	13.8	1.8
10-Year	9.3	7.9	1.4
Since Inception (22.75 Years)	11.6	9.6	2.0
ANNUALIZED RISK (%)			
3-Year	14.2	14.5	-0.3
5-Year	13.5	14.0	-0.5
10-Year	19.5	20.1	-0.5
Since Inception (22.75 Years)	18.3	19.2	-0.9
SHARPE RATIOS			
3-Year	0.97	0.82	0.15
5-Year	1.14	0.97	0.17
10-Year	0.45	0.37	0.08
Since Inception (22.75 Years)	0.50	0.37	0.13

Source: S&P Dow Jones Indices LLC and eVestment Alliance. Data from Dec. 31, 1994, to Sept. 29, 2017. Index performance based on total return in USD. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Since the S&P SmallCap 600 was launched in 1994, there are five bear and bull market cycles (as defined by peak to trough and trough to peak periods of the S&P 500) to analyze, and the S&P SmallCap 600 outperformed the Russell 2000 in four of those cycles. From the beginning of the data set on June 1, 1995, through Sept. 1, 2000, small caps underperformed large caps, but the S&P SmallCap 600 returned 129%, which was 15% more than the Russell 2000. In the following bear market, the S&P SmallCap 600 outperformed the Russell 2000 by 15% again. Although the next two cycles returned similarly, the S&P SmallCap 600 has been significantly outperforming in the current bull run since the global financial crisis ended in March 2009, beating the Russell 2000 by 66% and the S&P 500 by 108%. These are compelling returns to argue for a strategic allocation to not just small-cap stocks, but to the S&P SmallCap 600 rather than the Russell 2000.

Exhibit 4: Performance Through Different Market Cycles



Source: S&P Dow Jones Indices LLC. Data from June 1, 1995, to Sept. 29, 2017. Index performance based on total return in USD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Lastly, the S&P SmallCap 600 had relatively strong monthly and annual returns compared to the Russell 2000. On a monthly average, the Russell 2000 gained 0.89%, slightly more than the 0.83% gain for the S&P 500, but noticeably less than the average monthly return of 1.03% for the S&P SmallCap 600. Perhaps more important is that the S&P SmallCap 600 also provided downside protection. The down market capture ratio for the S&P SmallCap 600 was just 104.8 versus 119.2 for the Russell 2000. This means for every 1% drop in the S&P 500, the Russell 2000 fell an extra 0.2%. Also, the Russell 2000 fell in 45% of months that the S&P 500 fell, which is slightly worse than the 43% rate for the S&P SmallCap 600.

Referring to Exhibit 5, in any given calendar year for the past 23 years, the S&P SmallCap 600 outperformed the Russell 2000 for at least four months. Only in five years did the S&P SmallCap 600 outperform in less than 6 of the 12 months. On average, the S&P SmallCap 600 outperformed by 1.9% per year. The greatest underperformance of 8.9% occurred in 1999 and the greatest outperformance of 14.8% occurred in 2000.

Exhibit 5: Annual Performance of the S&P SmallCap 600 Versus the Russell 2000

YEAR	S&P SMALLCAP 600 (%)	RUSSELL 2000 (%)	EXCESS RETURN (%)	# MONTHS S&P SMALLCAP 600 OUTPERFORMED RUSSELL 2000
1994	-4.77	-1.82	-2.95	4
1995	29.96	28.45	1.51	6
1996	21.32	16.49	4.83	10
1997	25.58	22.36	3.22	8
1998	-1.31	-2.55	1.24	9
1999	12.40	21.26	-8.85	4
2000	11.80	-3.02	14.82	8
2001	6.54	2.49	4.05	6
2002	-14.63	-20.48	5.85	8
2003	38.79	47.25	-8.46	4
2004	22.65	18.33	4.32	6
2005	7.68	4.55	3.13	7
2006	15.12	18.37	-3.25	5
2007	-0.30	-1.57	1.27	6
2008	-31.07	-33.79	2.71	8
2009	25.57	27.17	-1.60	5
2010	26.31	26.85	-0.55	6
2011	1.02	-4.18	5.19	9
2012	16.33	16.35	-0.02	7
2013	41.31	38.82	2.49	7
2014	5.76	4.89	0.86	6
2015	-1.97	-4.41	2.44	8
2016	26.56	21.31	5.25	7
Average	10.84	8.94	1.90	6.7

Source: S&P Dow Jones Indices LLC, FactSet. Data from Dec. 31, 1993, to Dec, 31, 1996. Index performance based on total return in USD. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

The performance measurement of managers may be held to a higher standard if compared with the S&P SmallCap 600.

The performance shown here should at least beg the question of why the S&P SmallCap 600 is not more commonly used as a benchmark. The performance measurement of managers may be held to a higher standard compared with the S&P SmallCap 600. It may bring more credibility to the managers who beat the benchmark, or it could bring to light the managers who might be charging for active management but generating negative alpha.

SMALL-CAP INDEX PERFORMANCE VERSUS THE ACTIVE SMALL-CAP PEER GROUP

The SPIVA U.S. Mid-Year 2017 Scorecard shows the S&P SmallCap 600 outperformed 93.8% of all small-cap funds over a five-year period.

As mentioned in the introduction, the SPIVA U.S. Mid-Year 2017 Scorecard shows the S&P SmallCap 600 outperformed 93.8% of all small-cap funds over a five-year period. Moreover, the report calculates that over the 1-, 3-, 5-, 10-, and 15-year periods, the S&P SmallCap 600 beat 59.6%, 88.7%, 93.8%, 94.1%, and 94.4% of small-cap mutual funds in the University of Chicago CRSP database, respectively. This challenge in beating the index may contribute to why only 3% of funds are benchmarked to the S&P SmallCap 600.

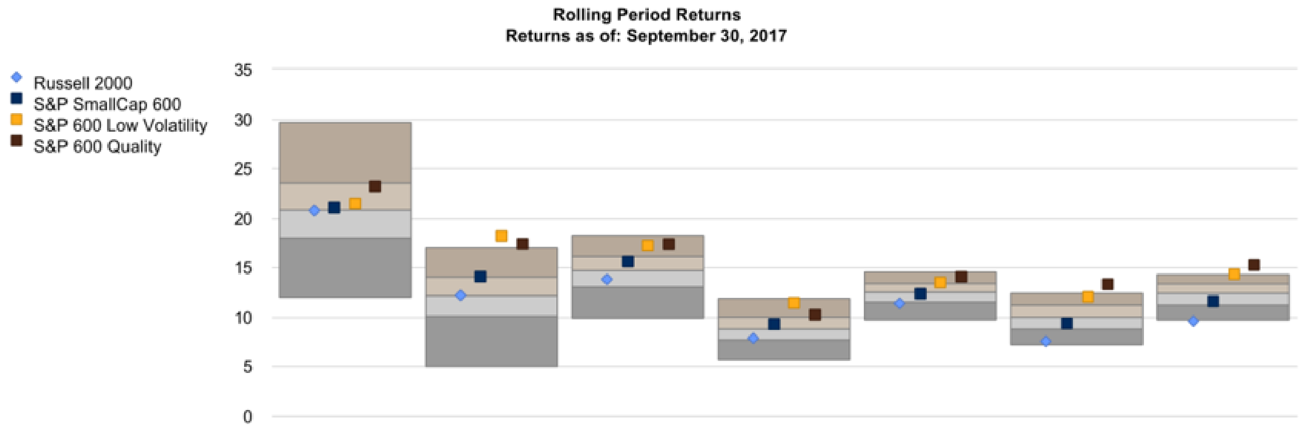
To investigate the performance of small-cap benchmarks relative to institutional active managers, we utilized data from eVestment Alliance. In Exhibits 6-8, we compared the S&P SmallCap 600 and Russell 2000 with two S&P DJI small-cap factor indices that have exhibited strong relative performance over the past 20 years. The S&P SmallCap 600 Low Volatility Index is designed to measure the 120 stocks within the S&P SmallCap 600 with the lowest historical volatility, as measured by the standard deviation of daily price returns over the past 252 trading days. The S&P SmallCap 600 Quality Index is designed to measure the 120 stocks within the S&P SmallCap 600 that have the highest average z-score, which is based on three quality metrics: return on equity (ROE), balance sheet accruals ratio, and financial leverage ratio.[7]

As shown in Exhibit 6, the S&P SmallCap 600 outperformed the Russell 2000 in all periods studied, ranging from one year to the entire period since the inception of the S&P SmallCap 600. The S&P SmallCap 600 also outperformed the median small-cap fund in the 1-, 3-, 5-, and 10-year periods ending Sept. 30, 2017.

Exhibit 7 compares the returns of the S&P SmallCap 600 and Russell 2000 to the eVestment U.S. small-cap equity universe from 2007-2016. The S&P SmallCap 600 ranked higher than the Russell 2000 in seven years and tied in one year. Only in 2009 and 2010 did the Russell 2000 rank higher, with a 74th percentile ranking versus a 79th percentile ranking for the S&P SmallCap 600 in 2009, and a 59th versus 62nd percentile ranking in 2010. In 2014, 2015, and 2016, the S&P SmallCap 600 ranked even higher, in the 45th, 41st, and 24th percentiles, respectively.

[7] For full details on the methodology of these smart beta indices, please see the S&P Quality Indices Methodology and the S&P Low Volatility Indices Methodology.

Exhibit 6: Historical Returns, Annualized Returns, and Rankings



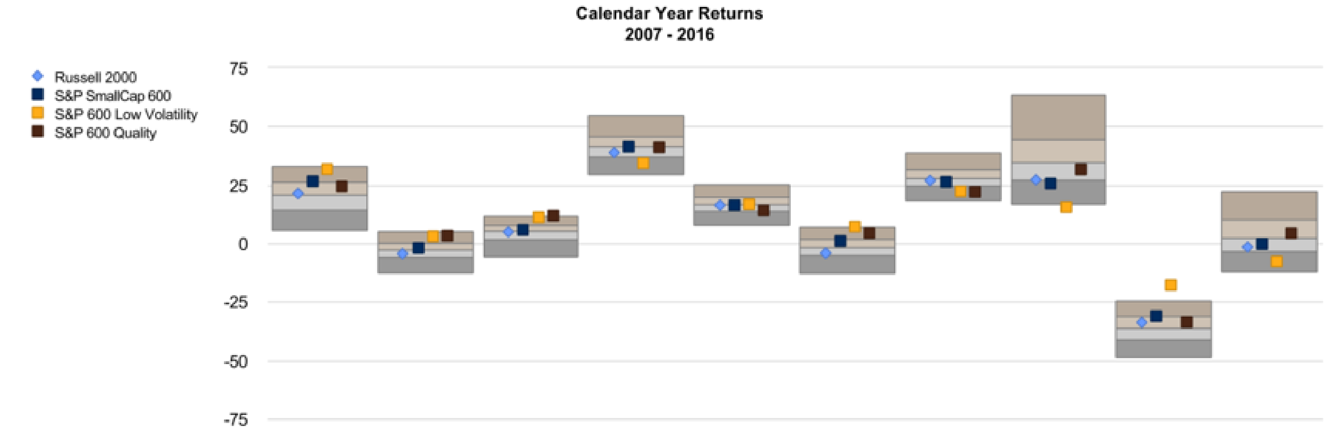
Universe: eVestment US Small Cap Equity

	1 Year	Rk	3 Years	Rk	5 Years	Rk	10 Years	Rk	15 Years	Rk	20 Years	Rk	22.58 Years	Rk
5th percentile	29.60		16.97		18.22		11.85		14.54		12.39		14.27	
25th percentile	23.50		14.00		16.11		9.96		13.36		11.18		13.33	
Median	20.76		12.12		14.67		8.77		12.49		9.95		12.38	
75th percentile	17.94		10.04		13.01		7.66		11.48		8.75		11.18	
95th percentile	11.97		4.99		9.87		5.69		9.69		7.19		9.68	
# of Observations	662		635		608		503		361		193		122	
Russell 2000	20.74	50	12.18	49	13.79	65	7.85	72	11.37	78	7.53	92	9.57	95
S&P SmallCap 600	21.05	48	14.07	23	15.60	33	9.27	40	12.34	56	9.34	64	11.58	66
S&P 600 Low Volatility	21.43	44	18.16	2	17.19	12	11.41	7	13.48	22	12.02	9	14.31	4
S&P 600 Quality	23.17	27	17.36	4	17.33	10	10.22	20	14.05	12	13.29	1	15.24	2

Results displayed in USD.

Source: eVestment Alliance. Data from April 30, 1995 to Sept. 30, 2017. Chart and table are provided for illustrative purposes reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 7: Index Rankings in Calendar Years



Universe: eVestment US Small Cap Equity

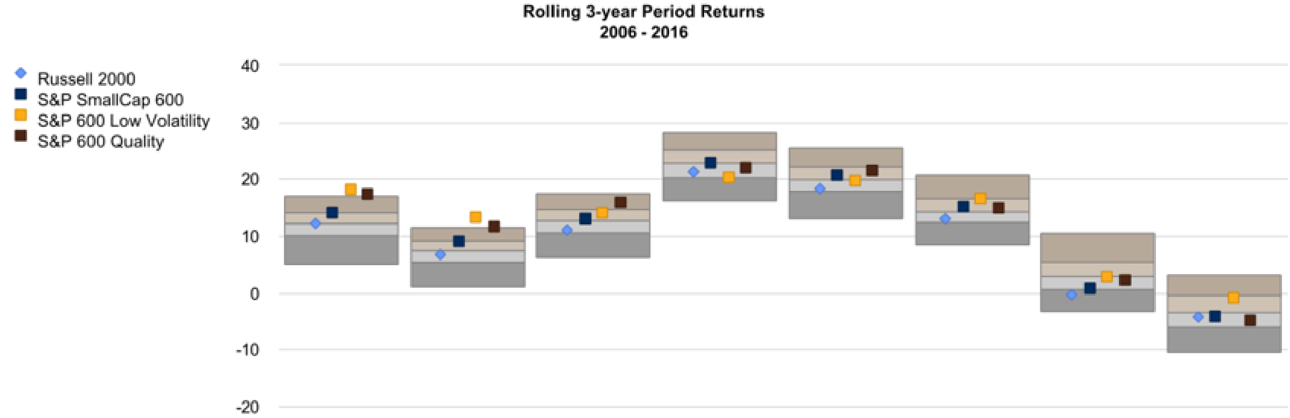
	2016	Rk	2015	Rk	2014	Rk	2013	Rk	2012	Rk	2011	Rk	2010	Rk	2009	Rk	2008	Rk	2007	Rk
5th percentile	32.89		4.99		11.54		54.59		25.02		6.93		38.61		63.39		-24.66		22.05	
25th percentile	26.10		0.03		7.67		45.48		19.62		1.69		31.47		44.23		-31.27		10.06	
Median	20.56		-2.88		5.11		41.32		16.54		-1.89		27.73		34.46		-36.38		2.15	
75th percentile	14.17		-5.97		1.58		36.85		13.67		-5.24		24.45		26.96		-41.29		-3.59	
95th percentile	5.51		-12.69		-5.75		29.37		7.78		-12.87		18.33		16.72		-48.76		-12.25	
# of Observations	692		731		747		747		766		790		806		830		830		837	
Russell 2000	21.31	45	-4.41	63	4.89	52	38.82	64	16.35	52	-4.18	68	26.85	59	27.17	74	-33.79	36	-1.57	67
S&P SmallCap 600	26.56	23	-1.97	41	5.76	45	41.31	50	16.33	52	1.02	29	26.31	62	25.57	79	-31.07	24	-0.30	61
S&P 600 Low Volatility	31.72	7	3.00	10	11.17	6	34.32	86	16.71	49	7.13	5	22.22	86	15.52	96	-17.79	1	-7.73	85
S&P 600 Quality	24.33	32	3.28	9	11.86	4	41.06	51	14.11	71	4.37	11	22.00	87	31.61	59	-33.62	35	4.33	41

Results displayed in USD.

Source: eVestment Alliance. Data from Dec. 31, 2006, to Dec. 31, 2016. Chart and table are provided for illustrative purposes reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance

The three-year rolling periods are shown in Exhibit 8. There were a total of eight three-year periods, and the S&P SmallCap 600 ranked higher than the Russell 2000 over every period. The S&P SmallCap 600 was also competitive with the active manager universe, scoring in the top half in five of eight three-year periods.

Exhibit 8: Index Rankings in Rolling Three-Year Return Periods



Universe: eVestment US Small Cap Equity

	10/14-9/17	Rk	10/13-9/16	Rk	10/12-9/15	Rk	10/11-9/14	Rk	10/10-9/13	Rk	10/09-9/12	Rk	10/08-9/11	Rk	10/07-9/10	Rk
5th percentile	16.97		11.43		17.41		28.16		25.41		20.66		10.44		3.08	
25th percentile	14.00		9.07		14.59		25.08		22.12		16.53		5.38		-0.51	
Median	12.12		7.36		12.62		22.78		19.85		14.19		2.84		-3.51	
75th percentile	10.04		5.33		10.51		20.18		17.81		12.35		0.53		-6.10	
95th percentile	4.99		1.00		6.15		16.17		13.00		8.40		-3.32		-10.51	
# of Observations	635		662		691		703		709		729		727		721	
Russell 2000	12.18	49	6.71	61	11.02	71	21.26	65	18.29	69	12.99	67	-0.37	83	-4.29	59
S&P SmallCap 600	14.07	23	9.04	25	13.02	45	22.86	49	20.68	38	15.14	39	0.77	72	-4.18	58
S&P 600 Low Volatility	18.16	2	13.27	1	14.04	32	20.29	74	19.70	53	16.57	24	2.81	50	-0.90	28
S&P 600 Quality	17.36	4	11.63	3	15.89	14	21.99	57	21.51	30	14.90	41	2.20	57	-4.87	64

Results displayed in USD.

Source: eVestment Alliance. Data from Sept. 30, 2007, to Sept. 30, 2017. Chart and table are provided for illustrative purposes reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The evidence of the S&P SmallCap 600's outperformance over the Russell 2000 is clear, not just in plain comparison but juxtaposed to active managers. Conceivably, the S&P SmallCap 600 could be considered not just as a benchmark replacement, but rather it could more widely serve as the underlying index for investable passive funds. We will explore the reasoning behind results this strong and steady in the next section.

WHY THE S&P SMALLCAP 600 OUTPERFORMS THE RUSSELL 2000

The S&P SmallCap 600 could be considered not just as a benchmark replacement, but rather it could more widely serve as the underlying index for investable passive funds.

The title "Big Things Come in Small Packages" refers to quality over quantity, and often things that have the most value or quality are small. The S&P SmallCap 600 only has 601 stocks, while the Russell 2000 has 2,010, and the weighted average market cap of the S&P SmallCap 600 is USD 1.77 billion compared with USD 2.05 billion for the Russell 2000.[8] Also, the ROE may contribute to the performance differential, with an ROE of 9.7 for the S&P SmallCap 600 versus 5.9 for the Russell 2000.

Extensive research has been done on the small-cap risk premium and how it has changed over time. In addition to the research done at S&P Dow Jones Indices on the factors that drive small-cap performance,[9] Asness et al. made a strong case that, once what they define as "quality" is controlled for, a stable and significant small-cap premium emerges.[10]

There are important construction differences between the S&P SmallCap 600 and the Russell 2000. One key difference may be the earnings requirement that the S&P SmallCap 600 implements, which plays an important role in how the index defines quality.

[8] Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 30, 2017. The Russell 2000 was represented by the iShares Russell 2000 ETF (ticker IWM).

[9] Brzenk, P. and. Soe, A. (2015), "A Tale of Two Benchmarks: Five Years Later," S&P Dow Jones Indices.

[10] Asness, C., Frazzini, A., Israel, R., Moskowitz, T., and Pedersen, L. (2015), "Size Matters, If You Control Your Junk," working paper, AQR Capital.

Exhibit 9: Index Construction Methodologies

INCLUSION CRITERIA	S&P SMALLCAP 600	RUSSELL 2000
Earnings Required	The sum of the most recent four consecutive quarters' as-reported earnings should be positive as should the most recent quarter*	None
Liquidity Required	The ratio of annual dollar value traded to float-adjusted market capitalization should be 1.00 or greater, and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date	None
Public Float Required	At least 50% of shares publicly floated	Only 5% of shares publicly floated
Reconstitution of Stocks	Throughout the year, as corporate actions arise	Only once a year, except for IPOs
IPO Seasoning	6-12 months required	None
Domicile of Constituents	U.S. companies, based on multiple criteria such as fixed assets, revenues, listing, etc.	U.S. companies, based on criteria such as fixed sets, revenues, listing, etc.
Sector Classification	Global Industry Classification Standard (GICS®)	Proprietary sector classification framework

Source: S&P Dow Jones Indices LLC, FTSE Russell. Table is provided for illustrative purposes. *Prior to 2014, S&P Dow Jones Indices' earnings criterion required four consecutive quarters of positive earnings, instead of the sum of the last four quarters being positive.

The difference in how the S&P SmallCap 600 measures the quality effect can be observed in the four-factor regression that adds quality to the three original factors that Fama and French identified: market, size, and value.

The S&P SmallCap 600 quality effect can be observed in the four-factor regression that adds quality to the three original factors that Fama and French identified: market, size, and value.[11] Here we are using AQR Capital's definition of "Quality Minus Junk," which is based on various measures of profitability, growth, safety, and payout.[12] The coefficient to the quality factor is statistically significant for the S&P SmallCap 600 but not for the Russell 2000. This shows the power of quality in driving the outperformance of the S&P SmallCap 600.

Exhibit 10: Four-Factor Regression Model Results

FACTOR	S&P SMALLCAP 600			RUSSELL 2000		
	COEFFICIENT	STANDARD DEVIATION	T-STAT	COEFFICIENT	STANDARD DEVIATION	T-STAT
Intercept	-0.22	0.08	-2.73	-0.19	0.06	-3.31
Market	1.08	0.02	46.95	1.03	0.02	63.43
Size	0.78	0.03	29.31	0.80	0.02	42.07
Value	0.37	0.02	15.12	0.27	0.02	15.39
Quality	0.25	0.04	6.70	0.04	0.03	1.46
Adjusted R^2	**0.95**			**0.98**		

Source: S&P Dow Jones Indices LLC, FactSet, Ken French, AQR. Data from Dec. 31, 1993, to May 31, 2017. Data based on monthly returns. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

[11] Fama, E.F and French, K.R., (1993), Common Risk Factors in the Returns on Stocks and Bonds, Journal of Financial Economics 33, 3-56.

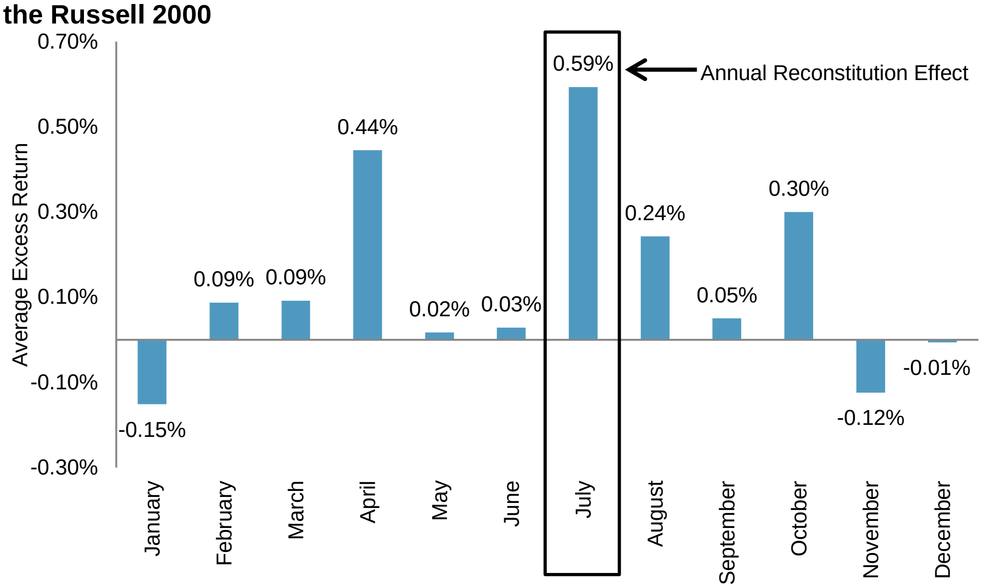
[12] Asness, C., Frazzini, A., Israel, R., Moskowitz, T., and Pedersen, L. (2015), "Size Matters, If You Control Your Junk," working paper, AQR Capital.

The other key methodology difference that drives the outperformance of the S&P SmallCap 600 versus the Russell 2000 is the annual reconstitution effect that dilutes Russell 2000 returns. It, too, has been well documented, not only in a report by S&P Dow Jones Indices[13] showing the significant t-stat of the return difference of the indices, but also by several other well-known researchers.

As winners from the Russell 2000 graduate to the Russell 1000, and losers from the Russell 1000 move down to the small-cap index, fund managers are forced to sell winners and buy losers, thereby creating a negative momentum portfolio.[14] Jankovskis[15] and Chen, Noronha, and Singal[16] estimated that the predictable nature of the June Russell rebalancing process biases the return of the index downward by an average of approximately 2% per year. Similarly, Chen, Noronha, and Singal found the rebalancing impact to be 1.3% per year.

The other key methodology difference that drives the outperformance of the S&P SmallCap 600 versus the Russell 2000 is the annual reconstitution effect that dilutes Russell 2000 returns.

Exhibit 11: Average Monthly Excess Returns of the S&P SmallCap 600 Versus the Russell 2000



Source: S&P Dow Jones Indices LLC, Russell, FactSet. Data from 1994 through 2016. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Together, quality and reconstitution account for most of the S&P SmallCap 600's outperformance over the Russell 2000. Some of the return difference may also be associated with the liquidity criterion of the S&P SmallCap 600 that is not applied to the Russell 2000. Within the S&P SmallCap 600, a small percentage of stocks, roughly 3%, have a three-month average daily

[13] Brzenk, P. and A. Soe, (2015), "A Tale of Two Benchmarks: Five Years Later," S&P Dow Jones Indices.

[14] Furey, James H., (2001), "Russell 2000 Bigger but not better benchmark."

[15] Jankovskis, Peter, (2002), "The Impact of Russell 2000 Rebalancing on Small-Cap Performance."

[16] Chen, Honghui, Greg Noronha, and Vijay Singal, (2006), "Index Changes and Losses to Investors in S&P 500 and Russell 2000 Index Funds."

trading volume (ADVT) of less than USD 1 million, compared with about 15% of stocks in the Russell 2000 that have a three-month ADVT of less than USD 1 million.

CONCLUSION

The S&P SmallCap 600 has outperformed the Russell 2000 over short and long time horizons, through various bear and bull markets, and largely on a monthly and annual basis.

The Russell 2000 has benefited from a long history and has become the dominant benchmark for active US small-cap equity managers. However, it can be argued that the broad adoption and makeup of the Russell 2000 do not make it more valuable as a performance benchmark or for active to passive replacement.

The S&P SmallCap 600 has outperformed the Russell 2000 over short and long time horizons, through various bear and bull markets, and largely on a monthly and annual basis. Additionally, the S&P SmallCap 600 ranks higher than the Russell 2000 in peer group analysis and has provided returns on par or better than active managers in many time periods. These results are not a coincidence, given that the S&P SmallCap 600 has quality built into its eligibility criteria.

In a move to increase transparency and liquidity, and to provide lower fees to market participants, we believe the S&P SmallCap 600 should be considered the small-cap benchmark of the industry. Based on its performance, the S&P SmallCap 600 may set the bar higher for active managers and increase the quality of passive small-cap investing.

PERFORMANCE DISCLOSURE

The S&P SmallCap 600 was launched on October 28, 1994. The S&P SmallCap 600 Low Volatility Index was launched on September 24, 2012. The S&P SmallCap 600 Quality Index was launched on March 6, 2017. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. Complete index methodology details are available at www.spdji.com.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices LLC maintains the Index and calculates the Index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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