

The S&P Composite 1500[®]: An Efficient Measure of the U.S. Equity Market

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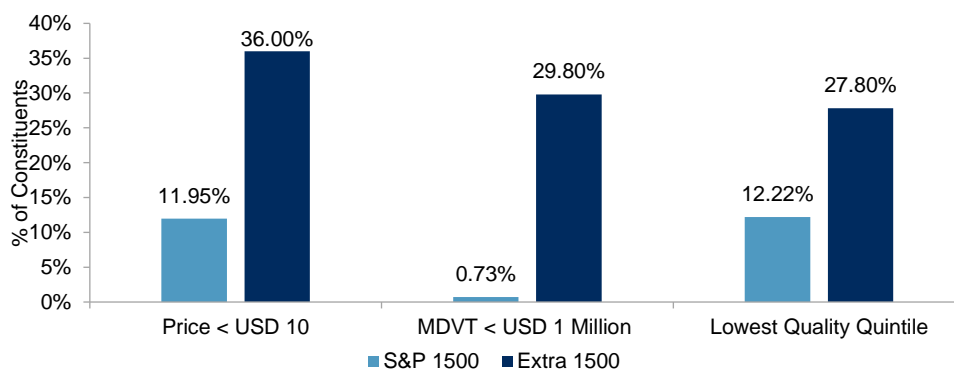
EXECUTIVE SUMMARY

Launched in 1995, the [S&P Composite 1500](#) (hereafter the “S&P 1500”) serves as a benchmark indicator for U.S. equity market performance, aggregating price movements of [S&P 500[®]](#), [S&P MidCap 400[®]](#), and [S&P SmallCap 600[®]](#) constituents to deduce common return drivers.

The S&P 1500 also increasingly serves as a basis for constructing portfolios designed to deliver a “market” return at lower cost than those active managers who offer to beat it. We shall examine the S&P 1500 from both perspectives, as well as examining its merits in comparison to popular alternatives. In particular, we observe that:

- The sizeable representation of U.S. companies means tracking U.S. equity market performance may be relevant to investors, globally;
- The S&P 1500 has outperformed the S&P 500, historically;
- Incorporating smaller companies in a U.S. market benchmark provides a more holistic view of the U.S. economy (see Exhibit 7); and
- Compared with other U.S. equity market indices, the S&P 1500 avoids relatively illiquid, lower priced, and lower quality stocks (see Exhibit 1).

Exhibit 1: The S&P 1500 Avoids Less Liquid, Lower Priced, and Lower Quality Stocks



Source: S&P Dow Jones Indices LLC, FactSet. Data as of April 30, 2020. The “Extra 1500” basket represents the largest 1,500 U.S. stocks that are not S&P 1500 constituents. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

MEASURING THE U.S. EQUITY MARKET

U.S. companies accounted for over 50% of the market cap in most global industries at the end of 2019...

U.S. companies represented an average of 49.47% of the [S&P Global BMI](#)'s capitalization at each year-end between 1995 and 2019, more than five times the average weight of second-place Japan (9.39%). Given that U.S. companies also accounted for over 50% of the market capitalization in most global industries at the end of 2019, many investors may need to turn to the U.S. in order to obtain certain exposures.

....so many investors may need to turn to the U.S. for certain exposures.

The S&P 1500 is designed for investors seeking to replicate the performance of the U.S. equity market, or benchmark against a representative universe of tradable stocks. The S&P 1500 combines three widely followed indices—the S&P 500, S&P MidCap 400, and S&P SmallCap 600—in proportion to their free-float market capitalizations.¹ Hence, the S&P 1500 uses the same inclusion criteria as its three component indices.

Exhibit 2: The S&P 1500 Uses a Number of Index Inclusion Criteria

INCLUSION CRITERIA	S&P 1500
Reconstitution of Stocks	Throughout the year, as corporate actions arise
Earnings	The sum of the most recent four consecutive quarters' as-reported earnings should be positive as should the most recent quarter.*
Liquidity	The ratio of annual U.S. 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.
Market Capitalization	Unadjusted company market capitalizations of USD 8.2 billion or more for the S&P 500, USD 2.4 billion to USD 8.2 billion for the S&P MidCap 400, and USD 600 million to USD 2.4 billion for the S&P SmallCap 600. These ranges are reviewed from time to time to assure consistency with market conditions.
Public Float	At least 10% of shares publicly floated**
IPO Seasoning	12 months required
Domicile of Constituents	U.S. companies, based on multiple criteria such as fixed assets, revenues, listing, etc.
Sector Classification	Global Industry Classification Standard (GICS®)

The S&P 1500 is designed for investors seeking to replicate the performance of the U.S. equity market.

*Prior to 2014, S&P DJI Earnings Criterion required four consecutive quarters of positive earnings, instead of the sum of the last four quarters being positive.

**A company meeting the unadjusted company market capitalization criteria is also required to have a security-level float-adjusted market capitalization that is at least 50% of the respective index's unadjusted company level minimum market capitalization threshold.

Source: S&P Dow Jones Indices LLC. Table is provided for illustrative purposes.

One of the main consequences of the index's inclusion criteria is that the S&P 1500 does not necessarily represent the largest 1,500 U.S.-domiciled companies. For example, certain companies may be ineligible for inclusion because they have a recent history of negative earnings or they became public companies only in the past 12 months.

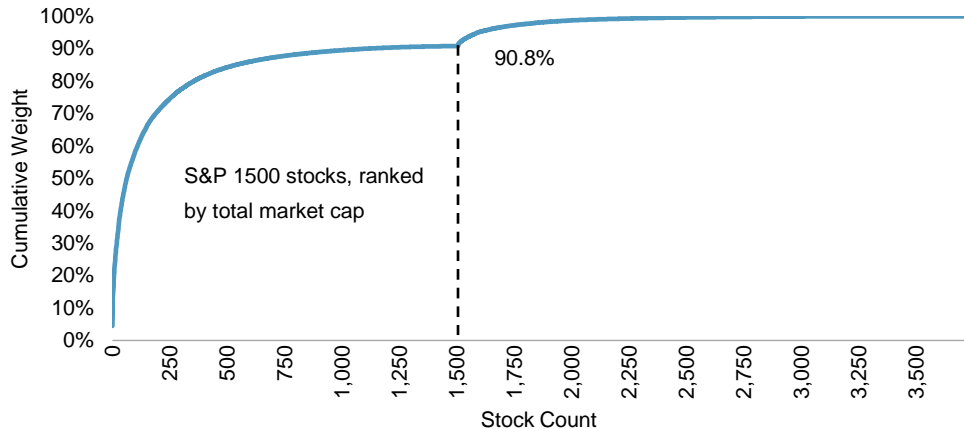
Exhibit 3 illustrates this point by showing the distribution of all U.S.-domiciled public company market capitalizations. We separated

¹ Free-float market capitalization represents the percentage of each company that is freely available for trading in the market. For more information, see [S&P Dow Jones Indices' Float Adjustment Methodology](#).

The S&P 1500 does not necessarily represent the largest 1,500 U.S.-domiciled companies.

companies into two buckets: 1) S&P 1500 constituents, and 2) non-S&P 1500 constituents, ordering within each bucket by total market capitalization. The exhibit shows the cumulative proportion of the U.S. equity market represented by the S&P 1500 companies (1-1,500) and non-S&P 1500 companies (1,501 and up).

Exhibit 3: The S&P 1500 Covers over 90% of the U.S. Equity Market



Companies may be ineligible because they do not meet the inclusion criteria.

Source: S&P Dow Jones Indices LLC. Data as of April 30, 2020. Chart shows the cumulative proportion of total U.S. equity market capitalization represented by S&P 1500 stocks, ranked by total market cap, and the remaining [S&P Total Market Index](#) constituents, ranked by market capitalization. Chart is provided for illustrative purposes.

Exhibit 3 demonstrates that the S&P 1500 covers more than 90% of U.S. equity market capitalization.² The kink in the line reflects the fact that certain large companies are ineligible for index inclusion because they do not pass at least one of the inclusion criteria. For example, Tesla does not currently meet the earnings criterion.³

The S&P 1500 covers more than 90% of U.S. equity market capitalization.

We will revisit the impact of the S&P 1500's inclusion criteria in the following sections. For now, it suffices to say that the **S&P 1500's earnings criterion contributed to its significant positive quality exposure**. Its ongoing reconstitution of stocks helped the S&P 1500 to have lower turnover than the Russell 3000, historically.

RISK/RETURN ANALYSIS

Over the past 25 years, the S&P 1500 benefited from its exposure to smaller companies. Exhibit 4 shows that the cumulative total returns for the S&P MidCap 400 and S&P SmallCap 600 were both higher than the S&P 500, which in turn helped the composite index to post higher returns than the U.S. large-cap benchmark.⁴

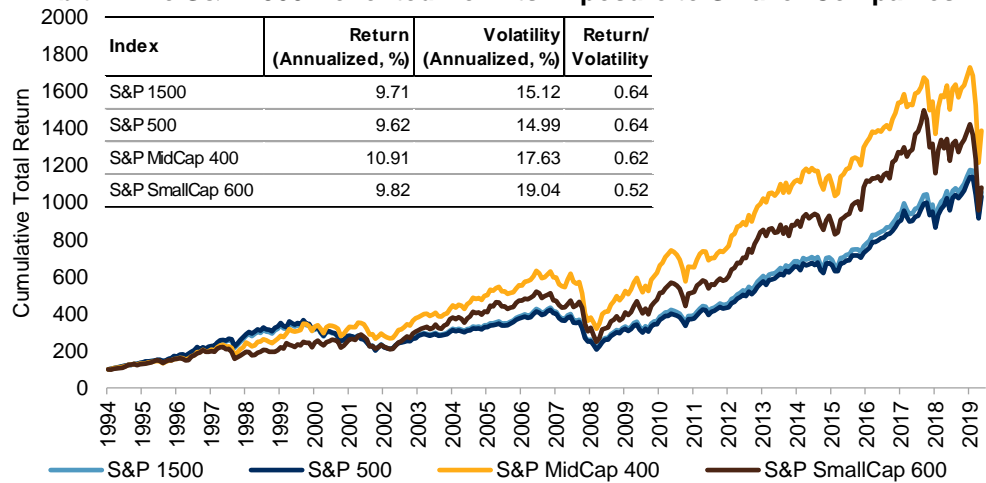
² Within the S&P 1500, 92.14% was represented by S&P 500 constituents, 5.55% by S&P MidCap 400 constituents, and 2.31% by S&P SmallCap 600 constituents.

³ It is worth noting that there is no guarantee that companies meeting all of the eligibility criteria will be included in the S&P 1500. The S&P U.S. Equity Index Committee also considers factors such as turnover and sector representation when deciding on index inclusion.

⁴ For more information on the performance of the S&P MidCap 400, see Bellucci, Louis, Hamish Preston, and Aye Soe, "[S&P MidCap 400: Outperformance and Potential Applications](#)," S&P Dow Jones Indices, June 2019.

Exhibit 4: The S&P 1500 Benefited from Its Exposure to Smaller Companies

The S&P 1500 benefited from its exposure to smaller companies.



Source: S&P Dow Jones Indices LLC. Data from Dec. 30, 1994, to April 30, 2020. Index performance based on total return in USD. Indices were rebased to 100 on Dec. 30, 1994. 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.

The cumulative total returns for the S&P MidCap 400 and S&P SmallCap 600 were both higher than the S&P 500...

Exhibit 5: Risk/Return Characteristics of the S&P 1500 and Its Component Indices

PERIOD	S&P 1500	S&P 500	S&P MIDCAP 400	S&P SMALLCAP 600
RETURNS (%)				
1-Year	-0.73	0.86	-14.94	-19.60
3-Year	8.15	9.04	-0.03	-1.79
5-Year	8.62	9.12	3.58	3.37
10-Year	11.44	11.69	8.86	8.74
15-Year	8.59	8.59	8.20	7.78
20-Year	5.86	5.58	7.84	8.08
25-Year	9.37	9.25	10.66	9.69
VOLATILITY (%)				
3-Year	17.16	16.79	21.50	23.28
5-Year	14.97	14.70	18.35	20.22
10-Year	14.07	13.82	16.94	18.52
15-Year	14.96	14.68	17.90	19.42
20-Year	15.14	14.95	17.69	19.29
25-Year	15.19	15.07	17.73	19.15
RETURN/VOLATILITY				
3-Year	0.48	0.54	0.00	-0.08
5-Year	0.58	0.62	0.19	0.17
10-Year	0.81	0.85	0.52	0.47
15-Year	0.57	0.58	0.46	0.40
20-Year	0.39	0.37	0.44	0.42
25-Year	0.62	0.61	0.60	0.51

Source: S&P Dow Jones Indices LLC. Data from Dec. 30, 1994, and April 30, 2020. Index performance based on total return in USD. All figures are annualized. 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.

...which in turn helped the composite index to post higher returns than the U.S. large-cap benchmark.

Many people may focus on U.S. large caps...

Although exposure to smaller U.S. companies helped the S&P 1500 post higher returns over longer horizons, Exhibit 5 shows that large-caps outperformed their smaller counterparts over the past decade. For example, the S&P 500 posted higher total returns, with lower volatility, than the S&P MidCap 400 and the S&P SmallCap 600 over the 1-, 3-, 5-, and 10-year horizons. Large-cap outperformance led to S&P 500 constituents representing more than 91% of the S&P 1500 at the end of 2019, an all-time high and higher even than at the height of the tech bubble in the early 2000s.

...but such a focus ignores the potential relevance of mid- and small-cap U.S. companies.

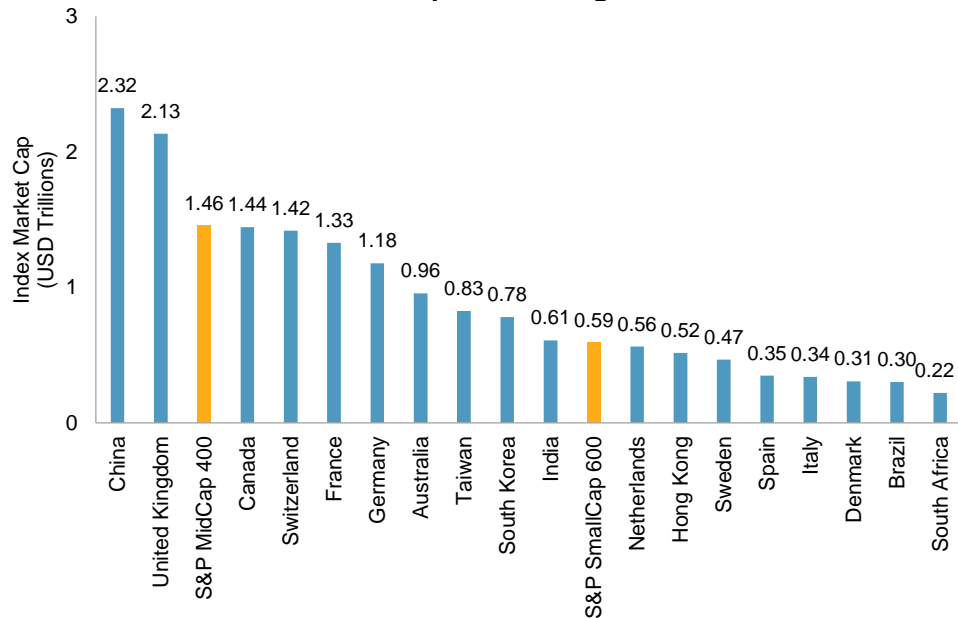
In light of the sizeable representation of large-cap stocks in the U.S. equity market, and their recent outperformance, many people may focus exclusively on U.S. large caps as a way to track the potential influence of the U.S. on the global equity market. However, such a focus ignores the potential relevance of mid- and small-cap U.S. companies.

S&P 1500: MORE THAN A LARGE-CAP INDEX

Exhibit 6 shows that tracking the performance of smaller U.S. companies could be as useful as measuring the returns of certain countries: **the total equity capitalizations of the S&P MidCap 400 and S&P SmallCap 600 were larger than those of many countries.** For example, the S&P MidCap 400 and S&P SmallCap 600 would have ranked as the 5th and 14th largest country in the S&P Global BMI, respectively, if they were treated as stand-alone countries.

Exhibit 6: Small in the U.S. Corresponds to Large Elsewhere

Tracking the performance of smaller U.S. companies could be as useful as measuring the returns of certain countries.



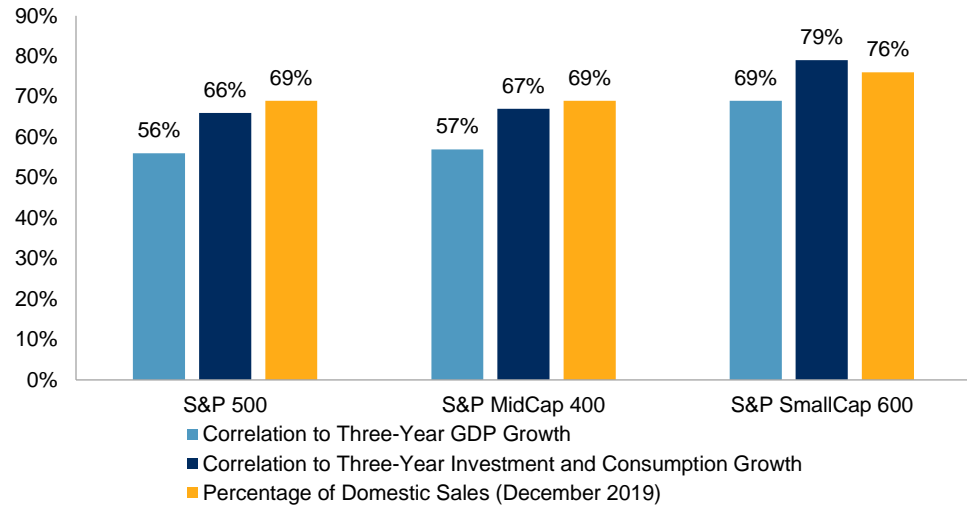
Source: S&P Dow Jones Indices LLC. Data as of April 30, 2020. Chart shows the S&P Global BMI market capitalization for a selection of countries. Chart is provided for illustrative purposes.

As a result, although smaller U.S. companies may be underrepresented in international portfolios, their performance may be just as relevant—if not more so—as the performance of a number of (typically well-represented) countries.⁵

Moreover, measuring the performance of smaller U.S. companies can offer perspectives on a broader set of macroeconomic drivers. For example, Exhibit 7 shows that smaller U.S. companies typically obtained a greater proportion of their revenue in the U.S., which contributed to their returns being more correlated to U.S. GDP growth, as well as to investment and consumption growth.⁶ Hence, incorporating smaller companies in a measure of the U.S. market provides a more holistic view of the U.S. economy.

Smaller U.S. companies are more sensitive to U.S. GDP growth.

Exhibit 7: Smaller U.S. Companies Were More Highly Correlated to Domestic GDP Growth



Incorporating smaller U.S. companies provides a more holistic view of the U.S. economy.

Source: S&P Dow Jones Indices LLC, U.S. Bureau of Economic Analysis. Data from December 1994 to December 2019. Percentage of domestic sales calculated via sales-weighted average among constituents. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

One possible explanation for the distinct sensitivities to macroeconomic factors is the fact that the S&P MidCap 400 and the S&P SmallCap 600 have different sector exposures than the S&P 500. Exhibit 8 shows the S&P 500 sector weights (left chart) and the relative sector weights of the S&P MidCap 400 and S&P SmallCap 600 to the S&P 500 (right chart).

The mid- and small-cap indices had higher exposure to sectors that typically derive a greater proportion of their revenues from the U.S. (Real Estate and Industrials). This likely contributes to the S&P MidCap 400 and S&P SmallCap 600’s greater sensitivities to the U.S. economy.

⁵ Bennett, Chris and Tim Edwards, “[The Half-Discovered Continent – U.S. Equities beyond the S&P 500](#),” S&P Dow Jones Indices, March 2020.

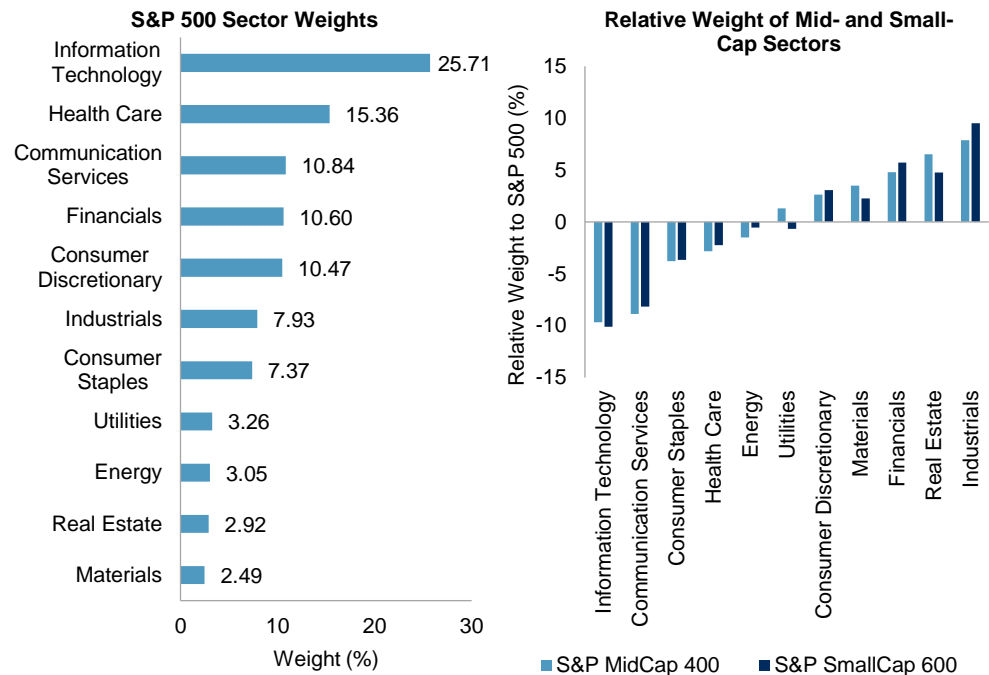
⁶ For more information on large-cap revenue exposure, see Brzenk, Phillip, “[The Impact of the Global Economy on the S&P 500](#),” S&P Dow Jones Indices, March 2018.

Exhibit 8: The Sectoral Makeup of the S&P MidCap 400 and S&P SmallCap 600 Can Help to Diversify S&P 500 Sector Exposures

The mid- and small-cap indices had higher exposure to sectors that derive a greater proportion of their revenues from the U.S.

Some may question the effectiveness of using an index-based approach in smaller size ranges.

However, SPIVA Scorecards show that most of the time, the majority of active U.S. equity managers underperformed.



Source: S&P Dow Jones Indices LLC. Data as of April 30, 2020. Charts are provided for illustrative purposes.

EFFECTIVENESS OF INDEXING

Although incorporating smaller U.S. companies can increase diversification and offer a more comprehensive measure of the U.S. economy, some may question the effectiveness of using an index-based approach in smaller size ranges. Indeed, a common view is that active managers focusing on mid and small caps are better able to outperform their benchmarks.

However, results from our semiannual S&P Indices Versus Active (SPIVA®) Scorecards routinely challenge this idea: **most of the time, the majority of active U.S. equity managers have underperformed.**⁷ This underperformance has been particularly prominent over longer horizons, which speaks to the fact that environments conducive for success by active managers did not occur often.⁸

For example, Exhibit 9 shows that underperformance has been typical from most active U.S. equity managers over the past 19 years; the majority lagged the S&P 1500 in 13 calendar years since 2001.⁹

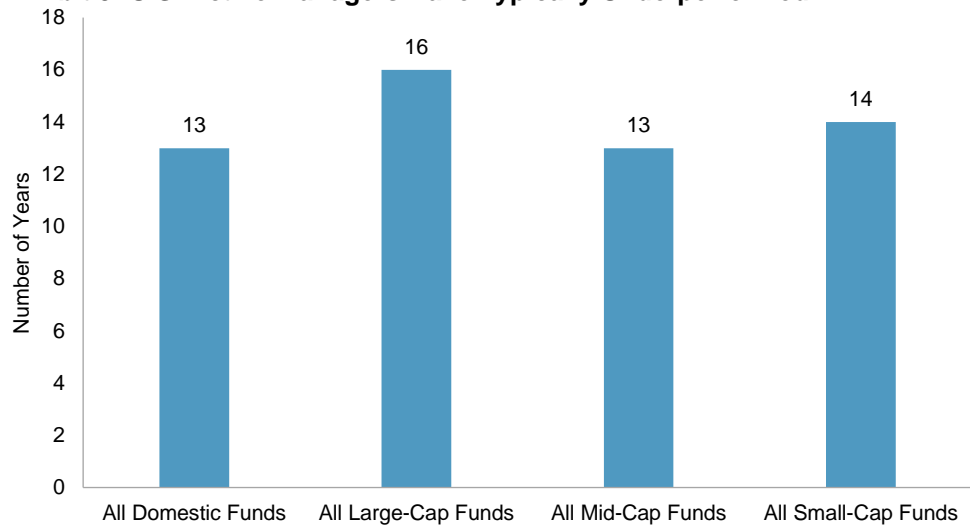
⁷ For more information on SPIVA scorecards, see “[SPIVA Scorecards: An Overview](#),” S&P Dow Jones Indices, January 2020.

⁸ Chan, Fei Mei, Tim Edwards, Anu Ganti, and Craig Lazzara, “[The Active Manager’s Conundrum](#),” S&P Dow Jones Indices, March 2020.

⁹ For further discussion on active performance shortfalls, see Ganti, Anu and Craig Lazzara, “[Shooting the Messenger](#),” S&P Dow Jones Indices, December 2017.

Exhibit 9: U.S. Active Managers Have Typically Underperformed

Active managers have also found it difficult to outperform their benchmarks on a risk-adjusted basis.



Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Moreover, and in light of the market turbulence observed in Q1 2020, it is worth remembering that active managers found it difficult to outperform their benchmarks on a risk-adjusted basis.¹⁰ As a result, many market participants may wish to consider using an index-based approach to track U.S. equity returns.

INDEX CONSTRUCTION MATTERS

As a result, many market participants may wish to consider using an index-based approach to track U.S. equity returns.

Thus far, we have focused on S&P 1500 and some of its characteristics. However, market participants can choose from a number of indices in order to track the performance of U.S. equities. For example, the Russell 3000 index measures the performance of the 3,000 largest U.S. companies, subject to certain criteria. In this section, we compare the S&P 1500 to the Russell 3000.

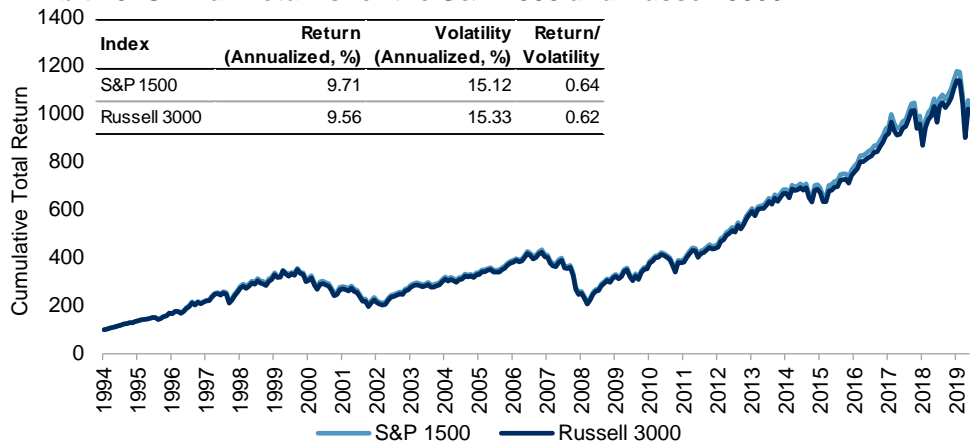
At first glance, there appeared to be little difference between the S&P 1500 and the Russell 3000. For example, Exhibits 10 and 11 show that the two indices posted similar return profiles over various horizons over the past 25 years, while Exhibit 12 shows the similarity in GICS sector weights.¹¹

The results reflect the significant overlap in mega-cap names for both indices—the lists of the 50 largest stocks in the S&P 1500 and the Russell 3000 were identical at the end of Q1 2020, with those stocks representing approximately 50% weight in both indices. Given that these mega-cap names played a sizeable role in determining overall market returns, it is unsurprising that both benchmarks posted similar risk/return profiles.

¹⁰ For example, Liu, Berlinda and Gaurav Sinha, “[Risk-Adjusted SPIVA Scorecard: Year-end 2019](#)”, S&P Dow Jones Indices, May 2020.

¹¹ The iShares Russell 3000 ETF is used as a proxy for constituent level data throughout this paper. Russell 3000 index level data is sourced from FTSE Russell.

Exhibit 10: Similar Returns for the S&P 1500 and Russell 3000



The S&P 1500 and the Russell 3000 posted similar risk/return profiles.

Source: S&P Dow Jones Indices LLC, FTSE Russell. Data from Dec. 30, 1994, to April 30, 2020. Index performance based on total return in USD. Indices were rebased to 100 on Dec. 30, 1994. 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.

Exhibit 11: The S&P 1500 and Russell 3000 Had Similar Risk/Return Profiles

PERIOD	S&P 1500	RUSSELL 3000
RETURNS (%)		
1-Year	-0.73	-1.04
3-Year	8.15	8.02
5-Year	8.62	8.33
10-Year	11.44	11.29
15-Year	8.59	8.56
20-Year	5.86	5.76
25-Year	9.37	9.24
VOLATILITY (%)		
3-Year	17.16	17.48
5-Year	14.97	15.25
10-Year	14.07	14.35
15-Year	14.96	15.24
20-Year	15.14	15.46
25-Year	15.19	15.41
RETURN/VOLATILITY		
3-Year	0.48	0.46
5-Year	0.58	0.55
10-Year	0.81	0.79
15-Year	0.57	0.56
20-Year	0.39	0.37
25-Year	0.62	0.60

This reflected the significant overlap in mega-cap names for both indices.

Source: S&P Dow Jones Indices LLC, FTSE Russell. Data from Dec. 30, 1994, to April 30, 2020. Index performance based on total return in USD. 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.

Exhibit 12: S&P 1500 and Russell 3000 Had Similar GICS Sector Weights

SECTOR	SECTOR WEIGHT (%)		
	S&P 1500	RUSSELL 3000*	DIFFERENCE
Communication Services	10.17	9.89	0.27
Consumer Discretionary	10.69	10.82	-0.13
Consumer Staples	7.08	6.68	0.40
Energy	2.95	2.86	0.09
Financials	11.00	11.07	-0.07
Health Care	15.15	15.67	-0.52
Industrials	8.58	8.73	-0.15
Information Technology	24.94	24.69	0.26
Materials	2.74	2.66	0.08
Real Estate	3.38	3.72	-0.33
Utilities	3.32	3.22	0.10

But the two indices are constructed differently...

*iShares Russell 3000 ETF is used as a proxy for the Russell 3000.
Source: S&P Dow Jones Indices LLC, FTSE Russell, FactSet. Data as of April 30, 2020. Table is provided for illustrative purposes.

...and these differences have important consequences.

However, the similarities between the S&P 1500 and the Russell 3000 in terms of their return characteristics and sector exposures belie an important fact: **the two indices are constructed differently and these differences have important consequences.** Exhibit 13 provides an overview of the methodology differences between the two indices.

Exhibit 13: The S&P 1500 Incorporates an Earnings Screen and Performs Constituent Changes on an Ongoing, As-Needed Basis

INCLUSION CRITERIA	S&P 1500	RUSSELL 3000
Reconstitution of Stocks	Throughout the year, as corporate actions arise	Once a year, except for IPOs
Earnings	The sum of the most recent four consecutive quarters' as-reported earnings should be positive as should the most recent quarter.*	None
Liquidity	The ratio of annual U.S. 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.	Average daily dollar trading value (ADDTV) must exceed that of the global median. As of the 2019 reconstitution, the global median ADDTV was USD 140,000.
Market Capitalization	Unadjusted company market capitalizations of USD 8.2 billion or more for the S&P 500, USD 2.4 billion to USD 8.2 billion for the S&P MidCap 400, and USD 600 million to USD 2.4 billion for the S&P SmallCap 600. These ranges are reviewed from time to time to assure consistency with market conditions.	Companies must have total market capitalization of USD 30 million or more.
Public Float	At least 10% of shares publicly floated**	Only 5% of shares publicly floated
IPO Seasoning	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 multiple criteria such as fixed assets, revenues, listing, etc.
Sector Classification	Global Industry Classification Standard (GICS)	Proprietary sector classification framework

*Prior to 2014, S&P DJI Earnings Criterion required four consecutive quarters of positive earnings, instead of the sum of the last four quarters being positive.

**A company meeting the unadjusted company market capitalization criteria is also required to have a security-level float-adjusted market capitalization that is at least 50% of the respective index's unadjusted company level minimum market capitalization threshold.

Source: S&P Dow Jones Indices LLC, FTSE Russell. Table is provided for illustrative purposes.

The S&P U.S. Equity Indices and their Russell counterparts have different reconstitution frequencies.

The S&P DJI approach typically resulted in lower annual turnover.

The first key difference between the S&P U.S. Equity Indices and their Russell counterparts is the frequency of their respective reconstitutions. Exhibit 14 shows that the ongoing, as-needed approach to S&P U.S. Equity Indices' constituent changes typically resulted in lower annual turnover than their Russell counterparts, which employ an annual reconstitution in June. These results may be particularly meaningful given the potential impact of turnover figures on a portfolio's transaction costs.¹²

¹² For example, see Chen, Honhui, Gregory Noronha, and Vijay Singal, "[Index Changes and Unexpected Losses to Investors in S&P 500 and Russell 2000 Index Funds](#)," March 2005.

Exhibit 14: S&P U.S. Equity Indices Typically Have Lower Turnover

YEAR	INDEX TURNOVER (%)							
	S&P 1500	iSHARES RUSSELL 3000 ETF	S&P 500	iSHARES RUSSELL TOP 200 ETF	S&P MIDCAP 400	iSHARES RUSSELL MID CAP ETF	S&P SMALLCAP 600	iSHARES RUSSELL 2000 ETF
2006	5.42	8.97	5.24	0.38	11.34	7.98	13.72	51.98
2007	6.02	21.2	5.84	0.01	20.86	14.68	16.26	76.22
2008	5.66	5.25	5.28	0.90	17.21	12.77	20.32	75.22
2009	4.10	9.96	4.24	50.12	13.22	17.64	14.02	34.96
2010	3.47	8.88	3.14	2.19	11.12	10.05	12.25	46.91
2011	3.90	6.39	3.62	87.11	13.53	13.44	12.80	41.59
2012	4.05	10.29	3.97	137.22	7.96	12.45	9.39	46.44
2013	3.26	8.79	3.40	10.25	10.07	11.13	11.79	23.60
2014	3.51	6.15	3.32	44.98	12.30	5.20	11.56	26.92
2015	4.09	9.17	4.46	9.38	13.69	6.24	13.14	35.32
2016	3.40	4.60	3.73	21.7	13.61	11.66	15.28	19.70
2017	2.93	6.57	3.18	10.07	15.07	8.72	12.92	30.23
2018	2.91	16.08	3.21	22.02	14.29	5.53	12.34	21.41
2019	3.30	8.10	3.28	6.99	15.21	7.79	15.61	22.70
Average	4.00	9.31	3.99	28.81	13.53	10.38	13.67	39.51

Unlike the Russell 3000, the S&P 1500 incorporates an earnings screen.

Source: S&P Dow Jones Indices LLC, FTSE Russell, FactSet. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

The second important difference between the two indices is that the S&P 1500 incorporates an earnings screen, whereas the Russell 3000 does not. In order to show the impact of this earnings criterion, we employ a four-factor model that combines the traditional factors from the Fama-French Three Factor Model¹³ with a quality-minus-junk (QMJ) factor.¹⁴

In the model, the monthly excess returns of the S&P 1500 and Russell 3000 (independent variables) are explained using their exposures to four factors (dependent variables): sensitivity to the market (beta), size of the stocks in the index (size), average weighted book-to-market ratio (value), and quality-minus-junk (quality).

The risk premium for each factor is defined as follows.

- **Equity Risk Premium:** Represented by $(RM - RF)$, which is the return on a market-value-weighted equity index minus the return on the one-month U.S. Treasury Bill. It measures systematic risk.
- **Size Premium:** Represented by small minus big (SMB), which measures the additional return from investing in small stocks. The

¹³ Fama, Eugene F. and Kenneth R. French, "Common risk factors in the returns on stocks and bonds," *Journal of Financial Economics*, 1993, Vol. 33, Issue 1, pp. 3-56.

¹⁴ For more information, see Asness, Clifford S., Andrea Frazzini, and Lasse Heje Pedersen, "Quality minus junk," *Review of Accounting Studies*, 2019, 24, pp. 34-112.

The S&P 1500's earnings screen contributed to its significant positive quality exposure.

- SMB factor is computed as the average return on three small-cap portfolios minus the average return on three large-cap portfolios.
- **Value Premium:** Represented by high minus low (*HML*), which measures additional return from investing in value stocks, as measured by high book-to-market ratios. It is calculated as the average return on two high book-to-market portfolios minus the average return on two low book-to-market portfolios.
- **Quality Premium:** Represented by quality-minus-junk (*QMJ*), which measures the additional return from investing in quality stocks, as defined using profitability. It is calculated as the average return from two portfolios of high-quality stocks minus the average return from two portfolios of low-quality stocks.

The regression equation is then estimated as follows.

$$R_i - R_F = \alpha + B_{market}(RM - RF) + B_{size}(SMB) + B_{value}(HML) + B_{quality}(QMJ)$$

Exhibit 15 shows the results from the regression analysis covering a 25-year period. Unlike the Russell 3000, the S&P 1500 has significant, positive quality exposure, and this difference was particularly striking in mid and small caps (see Appendix). In fact, the S&P SmallCap 600's significant, positive quality exposure helped to explain its outperformance over the Russell 2000 over the past 25 years.¹⁵

Exhibit 15: The S&P 1500 Has Significant Positive Quality Exposure

FACTOR	S&P 1500			RUSSELL 3000		
	COEFFICIENT	STANDARD ERROR	T-STAT	COEFFICIENT	STANDARD ERROR	T-STAT
Intercept	0.00	0.00	-1.29	0.00	0.00	-0.82
Market	1.01	0.01	201.39	1.00	0.00	242.03
Size	-0.10	0.01	-16.22	-0.05	0.00	-10.44
Value	0.06	0.01	10.19	0.04	0.00	9.47
Quality	0.05	0.01	5.47	0.01	0.01	1.05
Adjusted R ²	1.00	-	-	1.00	-	-

The S&P SmallCap 600's significant quality exposure helped explain its outperformance over the Russell 2000 over the past 25 years.

Source: S&P Dow Jones Indices LLC, FTSE Russell, Ken French, AQR. Data from January 1995 to March 2020. 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.

¹⁵ See Brzenk, Philip, Bill Hao, and Aye Soe, "[A Tale of Two Small-Cap Benchmarks: 10 Years Later](#)," S&P Dow Jones Indices, September 2019.

WHAT'S IN A BIGGER UNIVERSE?

Another way to illustrate the impact of the S&P U.S. Equity Indices' earnings criterion is to compare the characteristics of stocks in the S&P 1500 with those that are specific to the Russell 3000.

In order to make such a comparison, we first identified S&P 1500 constituents as of April 30, 2020. We also identified the largest 1,500 stocks that were not members of the S&P 1500 ("Extra 1500"), representing stocks that are specific to the Russell 3000.¹⁶ We then looked at several stock characteristics, including:

An earnings screen helped the S&P 1500 to avoid less liquid, lower priced, and lower quality constituents.

- Price, measured by the closing price on April 30, 2020;
- Liquidity, measured by the median daily value traded (MDVT) over the 12-month period ending April 30, 2020;¹⁷ and
- S&P DJI Quality score, which measures the financial stability, profitability and quality of earnings, for the S&P 1500 and "Extra 1500" stock universe.¹⁸

Exhibit 16 shows the proportion of stocks in each group—the S&P 1500 and "Extra 1500"—that have a price less than USD 10, an MDVT less than USD 1 million, and fell in the lowest quality quintile.¹⁹ The exhibit demonstrates that **incorporating an earnings screen helped the S&P 1500 to avoid less liquid, lower priced, and lower quality constituents:** a greater proportion of "Extra 1500" stocks were lower priced, less liquid, and of lower quality.

Investors may find it more difficult to trade stocks from the Russell 3000 and may be more likely to encounter capacity constraints.

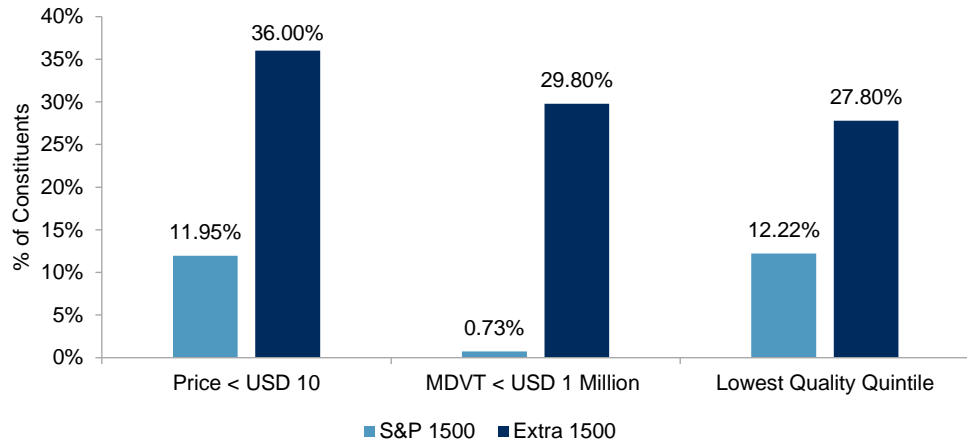
¹⁶ Company size is determined by free-float market capitalization of S&P Total Market Index constituents. As of April 20, 2020, 84% of "Extra 1500" stocks were iShares Russell 3000 ETF constituents.

¹⁷ MDVT is calculated by computing the U.S. dollar value traded on each trading day and taking the median value of this series.

¹⁸ Specifically, we use return on equity, accruals, and leverage ratios for each stock, as of April 30, 2020. Quality scores are based on S&P 1500 and "Extra 1500" stock universes, using the process outlined in the [S&P Quality Indices Methodology](#).

¹⁹ Quintiles are based on the distribution of quality scores across all S&P 1500 and "Extra 1500" stocks. As of April 30, 2020, 9 S&P 1500 stocks had no quality score, compared with 18 "Extra 1500" stocks.

Exhibit 16: The S&P 1500 Avoids Less Liquid, Lower Priced, and Lower Quality Stocks That Are Specific to the Russell 3000



Source: S&P Dow Jones Indices LLC, FactSet. Data as of April 30, 2020. The “Extra 1500” basket represents the largest 1,500 U.S. stocks that are not S&P 1500 constituents. Chart is provided for illustrative purposes.

Exhibit 16 also suggests that investors may find it more difficult to trade stocks that are specific to the Russell 3000 and may be more likely to encounter capacity constraints. In other words, the S&P 1500 is a more representative benchmark for those focusing on the tradeable U.S. equity universe.

CONCLUSION

The S&P 1500 serves as a benchmark indicator for over 90% of the U.S. equity market, and incorporating smaller companies helps the S&P 1500 to offer a more comprehensive perspective on the U.S. equity market.

The S&P 1500 also offers market participants broad, efficient exposure to U.S. equities. Indeed, using the same eligibility criteria as the S&P 500, S&P MidCap 400, and the S&P SmallCap 600 contributed to the S&P 1500’s significant quality bias, and helped to explain why the S&P 1500 has lower exposure to less liquid, lower priced, and lower quality companies than the Russell 3000.

Combined with the difficulty that many active managers have had in outperforming the S&P 1500, historically, market participants may wish to consider the potential application of an S&P 1500-based approach to track U.S. equity market returns.

Market participants may wish to consider an S&P 1500-based approach to track U.S. equity market returns.

APPENDIX – FACTOR EXPOSURES

Exhibit 17: Factor Exposure of Large-Cap Indices

FACTOR	S&P 500			RUSSELL TOP 200		
	COEFFICIENT	STANDARD ERROR	T-STAT	COEFFICIENT	STANDARD ERROR	T-STAT
Intercept	0.00	0.00	-0.85	0.00	0.00	-0.49
Market	1.00	0.01	177.01	1.00	0.01	137.10
Size	-0.16	0.01	-24.33	-0.24	0.01	-27.28
Value	0.03	0.01	4.84	-0.03	0.01	-3.65
Quality	0.04	0.01	3.92	0.03	0.01	2.56
Adjusted R ²	0.99	-	-	0.99	-	-

Source: S&P Dow Jones Indices LLC, FTSE Russell, Ken French, AQR. Data from January 1995 to March 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 18: Factor Exposure of Mid-Cap Indices

FACTOR	S&P MIDCAP 400			RUSSELL MIDCAP		
	COEFFICIENT	STANDARD ERROR	T-STAT	COEFFICIENT	STANDARD ERROR	T-STAT
Intercept	0.00	0.00	0.10	0.00	0.00	1.32
Market	1.06	0.02	43.45	1.00	0.02	54.33
Size	0.30	0.03	10.15	0.20	0.02	9.11
Value	0.24	0.03	8.95	0.18	0.02	8.93
Quality	0.09	0.04	2.00	-0.06	0.03	-1.92
Adjusted R ²	0.92	-	-	0.95	-	-

Source: S&P Dow Jones Indices LLC, FTSE Russell, Ken French, AQR. Data from January 1995 to March 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 19: Factor Exposure of Small-Cap Indices

FACTOR	S&P SMALLCAP 600			RUSSELL 2000		
	COEFFICIENT	STANDARD ERROR	T-STAT	COEFFICIENT	STANDARD ERROR	T-STAT
Intercept	0.00	0.00	-2.09	0.00	0.00	-2.70
Market	1.06	0.02	52.39	1.02	0.01	70.74
Size	0.76	0.02	31.75	0.78	0.02	45.78
Value	0.37	0.02	17.08	0.26	0.02	16.66
Quality	0.23	0.04	6.30	0.01	0.03	0.47
Adjusted R ²	0.95	-	-	0.98	-	-

Source: S&P Dow Jones Indices LLC, FTSE Russell, Ken French, AQR. Data from January 1995 to March 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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