

**S&P Dow Jones
Indices**

A Division of **S&P Global**

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The Passive Paradox



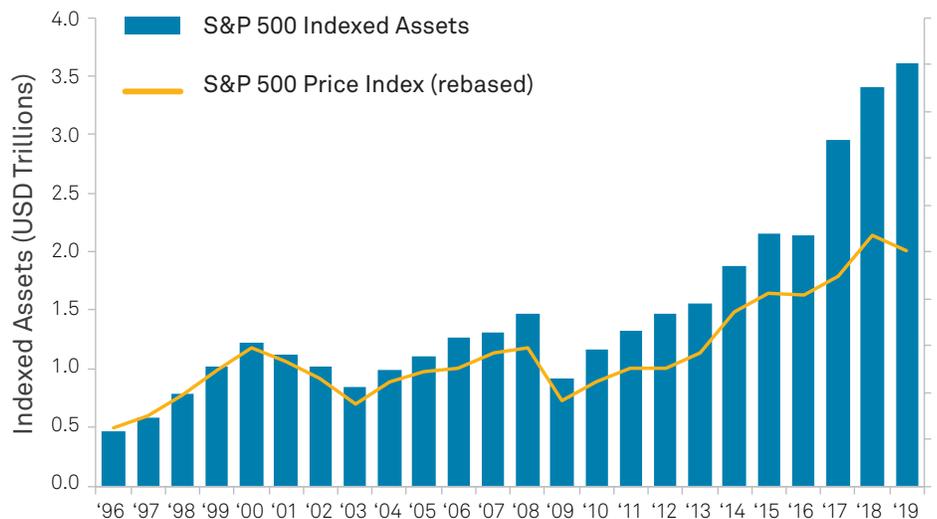
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Fifty years ago there were no index funds. All investment portfolios were “active,” which meant that their managers attempted to outperform benchmark indices like the S&P 500®. Today, we estimate that between one quarter and one third of the total value of the U.S. equity market is held by index trackers—funds that aim simply to match the performance of a benchmark. Exhibit 1 shows the growth in assets tracking the S&P 500, which has been particularly impressive in the last decade.

Exhibit 1: Approximately USD 3.6 Trillion Tracks the S&P 500



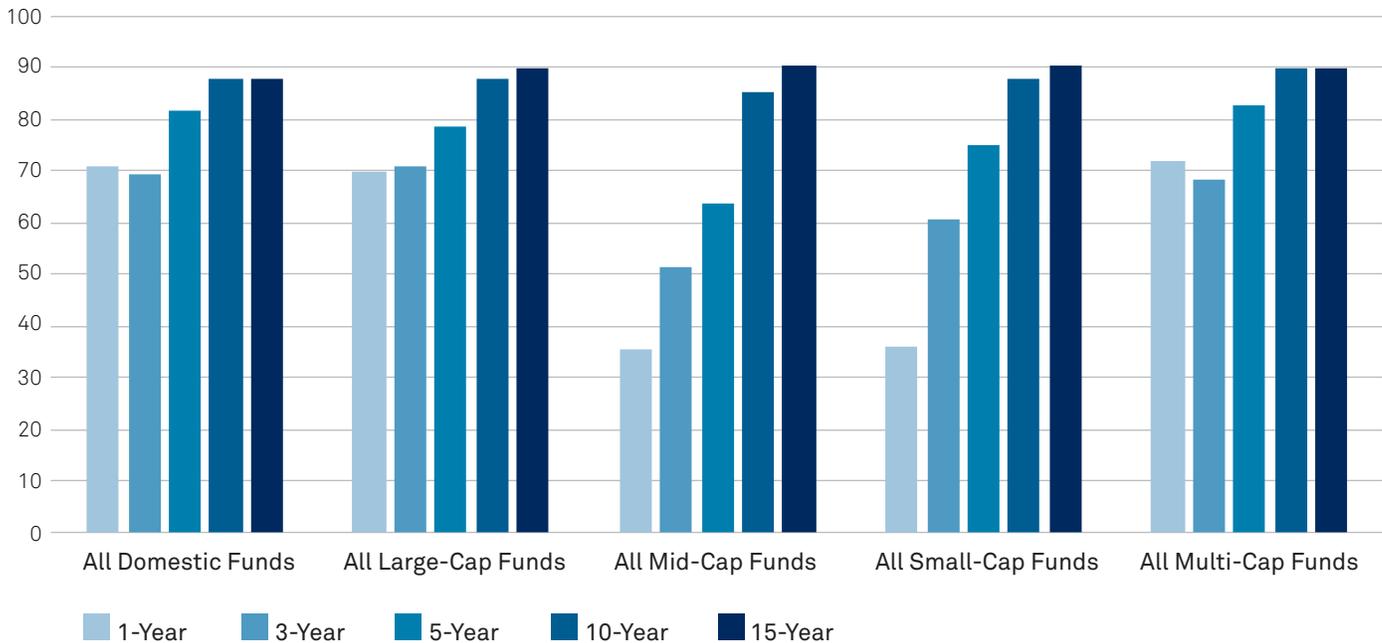
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is for illustrative purposes only.

This shift of assets from active management to “passive” investing must surely count as one of the most significant developments in modern financial history. So, what has taken us so far so rapidly? Two of the most significant factors are performance and cost.

Academics and other observers began to notice in the 1970s that the majority of professional investment managers were unable to outperform an index benchmark with any consistency. Since 2001, S&P Dow Jones Indices has contributed to this body of knowledge with a report we call SPIVA® (S&P Index vs. Active). Exhibit 2 summarizes data from our most recent U.S. SPIVA report.

Exhibit 2: Most Active Managers Have Underperformed Most of the Time

Percentage of Underperforming Active U.S. Funds (As of Mid-Year 2019 SPIVA U.S. Scorecard)



Source: S&P Dow Jones Indices' SPIVA U.S. Scorecard: Mid-Year 2019. Data as of June 30, 2019. Past performance is no guarantee of future results. Chart is for illustrative purposes only.

In the one-year period ended June 30, 2019, 70% of all large-cap U.S. mutual funds underperformed the S&P 500. Results for mid- and small-cap managers were more favorable in the most recent 12 months, but the longer-term record is bleak across the capitalization range. Nor are these results limited to the U.S.—we run SPIVA reports in Australia, Canada, Europe, India, Japan, Latin America, and South Africa and the results are remarkably consistent. Index funds have typically outperformed a significant majority of active managers over the long term, which has helped drive the shift in assets away from active managers.

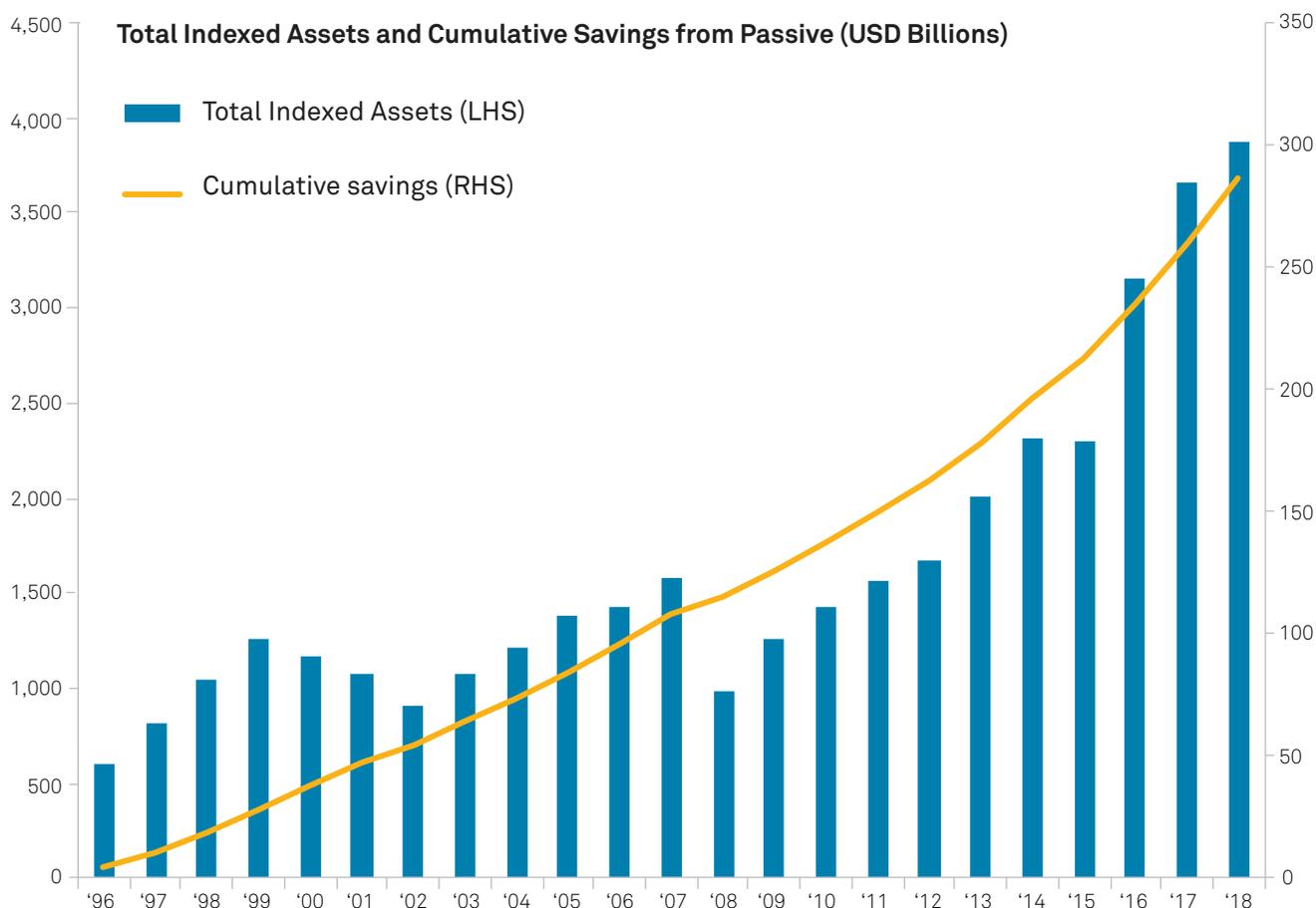
A second driver of the growth of indexing has been cost. Active management is inherently more expensive than index investing, since active managers must bear research, portfolio management, and trading costs far larger than those of their index competitors. Accordingly, active fees are typically higher than passive fees, although the differential has shrunk in

recent years as active managers have reacted to index competition. Exhibit 3 estimates the cumulative savings in management fees for investors in the S&P 500, S&P MidCap 400®, and S&P SmallCap 600® at better than a quarter-trillion dollars over the past 23 years.

These savings continue to accumulate. There's approximately USD 4 trillion tracking the three indices featured in Exhibit 3. If the spread between active and passive fees is 60 basis points (0.60%)—a reasonable estimate—then this year the cumulative savings pool will grow by USD 24 billion.

Of course, it would be pound foolish and penny wise for an investor to opt for lower passive fees if that meant forgoing incremental active performance. But we've already seen that most active managers underperform—meaning that index fund investors benefit from reduced management fees without sacrificing investment performance.

Exhibit 3: Cumulative Investor Savings Amount to USD 287 Billion



Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is for illustrative purposes only.

As indexed assets have grown, we’ve also witnessed the growth of a vibrant ecosystem of index-linked trading vehicles, as illustrated in Exhibit 4. An investor who wants S&P 500 exposure can get it through a range of instruments, including exchange-traded funds (ETFs), options, or futures. We recently estimated the volume of index-equivalent trading in the S&P 500 at USD 128 trillion for the one-year period ended June 30, 2019. The magnitude of trading in S&P

500-linked instruments is enormous in relation to the value of assets explicitly tracking the S&P 500. This has a number of implications.

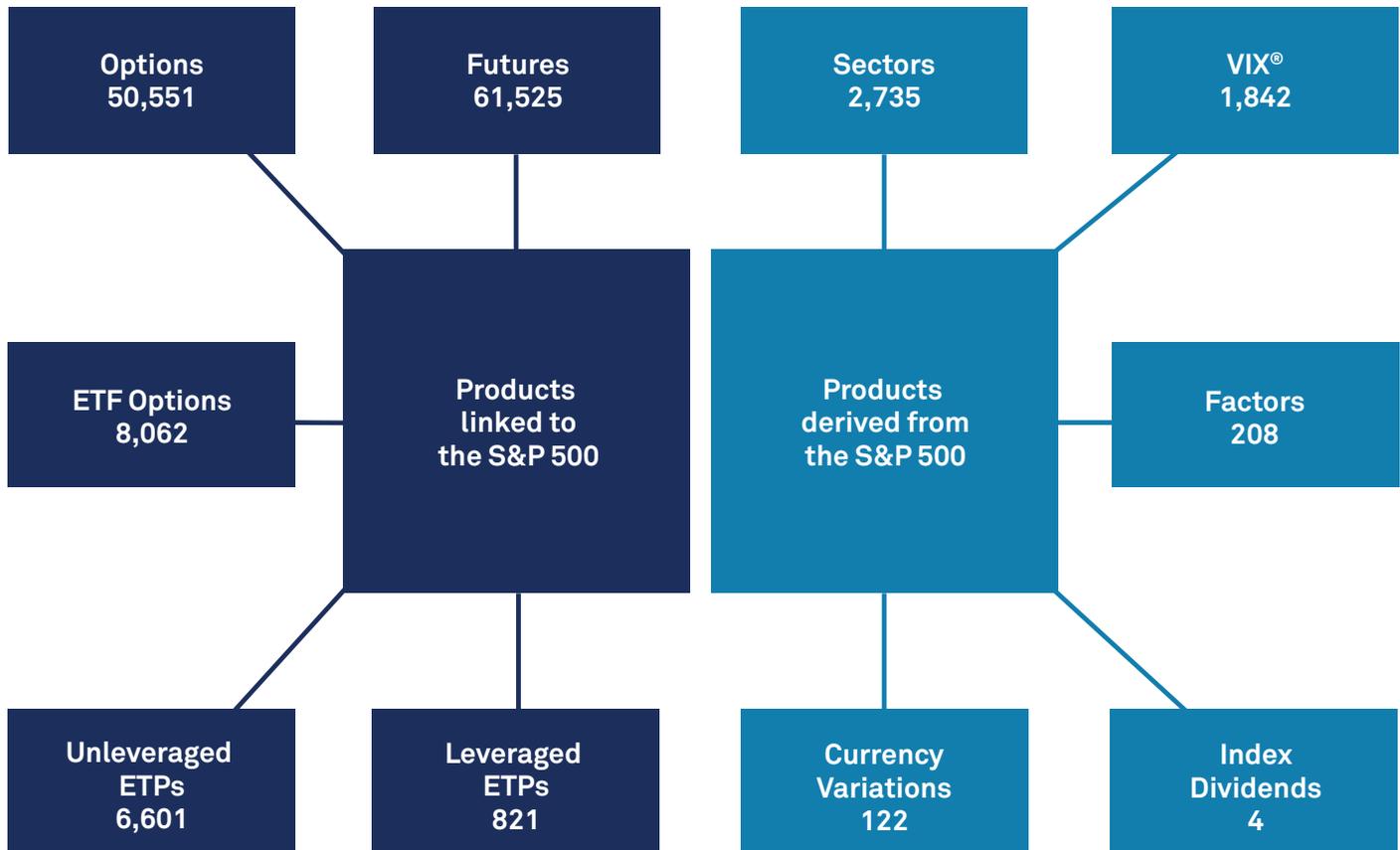
First, it’s obvious that a great many active investors and traders are making use of index-linked vehicles. Whether for hedging, trade facilitation, tactical asset allocation, or a range of other uses—many users of index-based financial products don’t view themselves as index-based investors. But index-based

investors nonetheless benefit from the trading liquidity that they provide.

Second, this trading ecosystem enables investors to operate more effectively than would be possible in its absence. Fifty years ago, if I were bullish on the U.S. stock market, I could only act on my view by selecting a portfolio of individual stocks. There was a substantial risk that my portfolio would underperform the market as a whole. Today, I can access the U.S. market in one trade

Exhibit 4: A Large Trading Ecosystem Surrounds the S&P 500

S&P 500 Trading Ecosystem – One-Year Index Equivalent Trading Volumes in USD Billions



Source: "A Window on Index Liquidity", S&P Dow Jones Indices (2019). Figures in billions of U.S. dollars of index equivalent trading volumes. Data as of June 30, 2019. Chart is for illustrative purposes only.

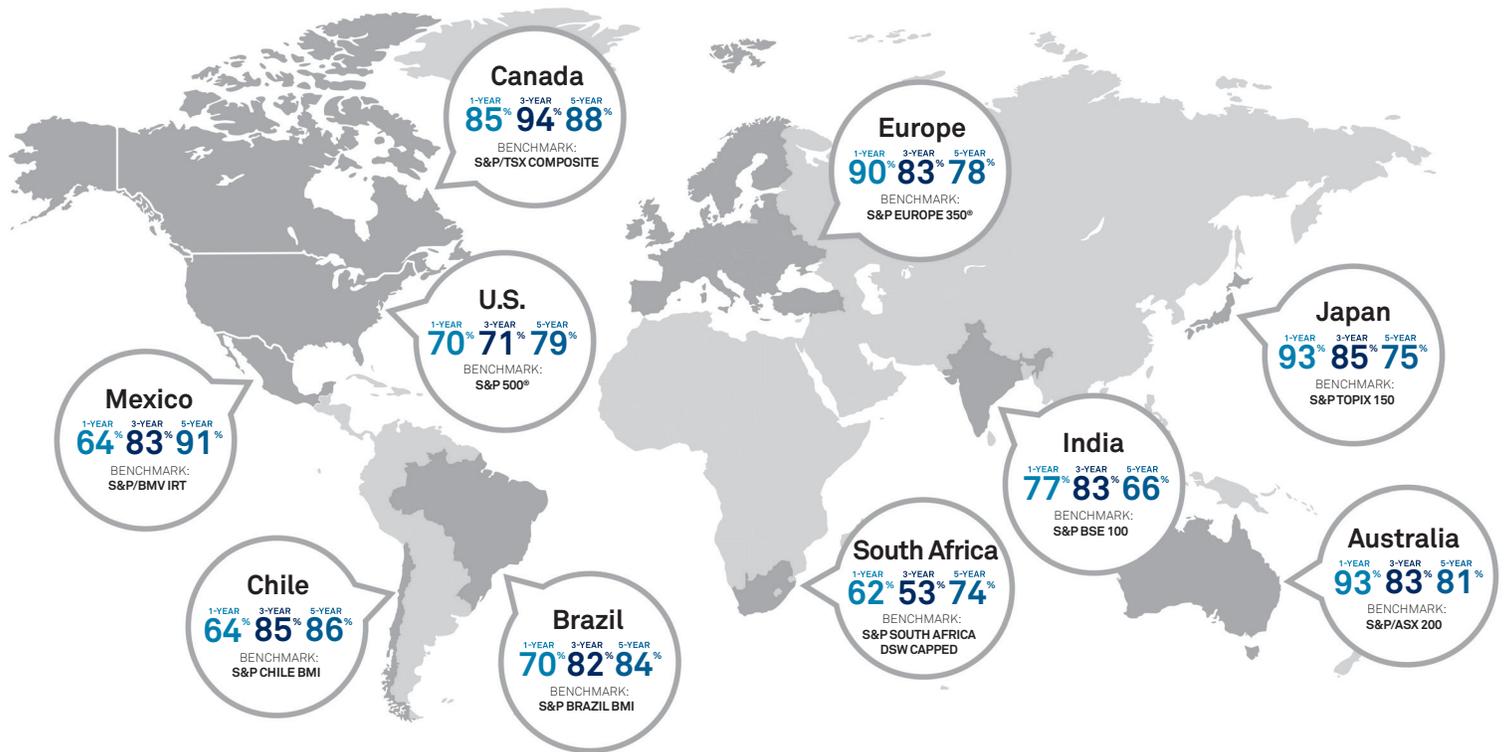
in one instrument without the need to worry about stock selection and trading. I can also change my mind tomorrow, and invest elsewhere with ease.

Finally, and most importantly, the active trading of index vehicles is a valid expression of investor sentiment and thus contributes directly to what market analysts call "price discovery." Thanks to arbitrageurs, that discovery is then reflected in the index's component

securities. In that sense, index vehicles help to set prices not only at a macroeconomic level, but also at an individual security level. Index trading thus improves market efficiency—and this, in turn, makes it even more difficult for active managers to outperform the index.■

SPIVA® Around the World

Percentage of active funds outperformed by benchmarks* over 1-, 3-, and 5-year periods



The SPIVA Difference

- 1 Accounts for the entire opportunity set—not just the survivors—thereby **eliminating survivorship bias**.
- 2 Applies an **apples-to-apples comparison** by measuring a fund's returns against the returns of a benchmark appropriate for that particular investment category.
- 3 Shows that **asset-weighting matters** by using both equal- and asset-weighted averages.
- 4 Uses only the share class with greater assets, which **avoids double counting** multiple share classes in all count-based calculations.

SPIVA: S&P Indices Versus Active
www.spdji.com/spiva

*Regional benchmarks included here are large-cap, with the exception of Brazil and Chile where SPIVA results displayed reflect regional broad market indices. Multiple benchmarks exist in all regions tracked by SPIVA. For more information on SPIVA methodology, including a full list of regional benchmarks and results, visit www.spdji.com/spiva

Source: S&P Dow Jones Indices LLC, Morningstar, Fundata, CRSP. Data as of June 30, 2019. Charts and tables are provided for illustrative purposes. Past performance is no guarantee of future results.

Three Strategies for Boosting Diversification



Rupert Watts, CFA, CAIA
Director
Strategy Indices
S&P Dow Jones Indices

While most market participants are well-acquainted with broad market indices, they are often less familiar with indices that may outperform during periods of negative equity market performance and increased volatility. We develop the latter group of indices in an attempt to help improve portfolio diversification, increase risk-adjusted returns, and reduce drawdowns.

Here, we'll highlight three diversification strategies that have seen increased adoption since the 2008 financial crisis—low volatility, risk parity, and alternative risk premia.

1. Low Volatility Indices

Factor investing involves targeting specific drivers of return, beyond market cap beta. Some factors have tended to be more cyclical (e.g. value) while others have proven more defensive. Defensive factor indices are designed to track what are perceived as lower-risk companies that tend to outperform in down markets (although at the expense of expected underperformance on the upside).

One factor that particularly stands out in terms of asset flow and defensive characteristics is low volatility. Indices focused on this factor track stocks with lower realized volatility, exploiting what is known as the low volatility anomaly. While seemingly contradictory to modern portfolio theory, favoring low-volatility stocks over high-volatility stocks has historically yielded higher risk-adjusted returns in the long term. Furthermore, low volatility indices can help minimize downside risk by avoiding highly volatile stocks and favoring those with more stable performance.

Exhibit 1 shows that the S&P 500 Low Volatility Index achieved a higher risk-adjusted return than the S&P 500 over the long term. Confirming its defensive nature, it consistently beat the S&P 500 during periods of large equity market drawdowns and outperformed about 83% of the time when the S&P 500 recorded a down month.

Exhibit 1: Long Term Statistics – S&P 500 Low Volatility Index

Statistic	S&P 500	S&P 500 Low Volatility Index
Annualized Return (%)	9.9	10.7
Annualized Volatility (%)	17.4	12.9
Risk-Adjusted Return	0.57	0.83
Maximum Drawdown (%)	-55.3	-40.4
Up-Month Outperformance (%)	–	31.8
Down-Month Outperformance (%)	–	82.5
Return in Periods of Large Equity Market Drawdowns (%)		
Global Financial Crisis (October 2007 – February 2009)	-50.2	-33.4
Europe/Greece Debt Crisis (April – June 2010)	-14.3	-6.9
Downgrade of U.S. Debt (August 2011)	-16.6	-11.6
China’s Black Monday (May – September 2015)	-7.1	-2.0
Inflation Fears (February 2018)	-8.5	-8.1
Q4 2018 (October – December 2018)	-13.5	-5.2

Source: S&P Dow Jones Indices LLC. Data from Jan. 2, 1990 to Dec. 31, 2019. 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.

2. Risk Parity Indices

Risk parity can be broadly defined as an asset allocation strategy that attempts to balance risk contribution across asset classes, thereby generating a portfolio that is more diversified and less vulnerable to market downturns. Having outperformed some traditional allocation approaches such as the 60/40 portfolio, risk parity attracted headlines and grew substantially in popularity following the 2008 financial crisis.

There is a growing realization that the efficacy of many active risk

parity strategies can be captured passively with more transparency and lower costs. Much like their active counterparts, risk parity indices are designed to generate stable returns across market climates (via appropriate asset class selection), maximize benefits of diversification (via appropriate weighting schemes), and achieve a stable risk profile (via risk targeting).

The S&P Risk Parity Indices allocate across three asset classes: equities, fixed income, and commodities. The allocation methodology is designed to equalize the volatility contribution of each asset class

in order to maximize the benefits of diversification and ensure no single asset class dominates the overall risk and return. The series includes indices with different volatility targets. As Exhibit 2 shows, the S&P Risk Parity Indices have historically exhibited outperforming long-term risk-adjusted returns and favorable performance during market downturns.

3. Alternative Risk Premia (ARP) Indices

Portfolios diversified across traditional asset class silos are often dominated by equity risk and

Exhibit 2: Long Term Statistics – S&P Risk Parity Indices

Statistic	S&P 500	S&P Risk Parity Index 10% Target Volatility	S&P Risk Parity Index 12% Target Volatility	S&P Risk Parity Index 15% Target Volatility
Annualized Return (%)	9.1	7.4	8.6	10.4
Annualized Volatility (%)	18.0	8.3	10.0	12.6
Risk-Adjusted Return	0.51	0.89	0.86	0.83
Maximum Drawdown (%)	-55.3	-30.1	-35.6	-43.3
Up-Month Outperformance (%)	–	21.1	24.8	32.3
Down-Month Outperformance (%)	–	83.1	78.0	74.6
Return in Periods of Large Equity Market Drawdowns (%)				
Global Financial Crisis (October 2007 – February 2009)	-50.2	-21.7	-26.1	-32.5
Europe/Greece Debt Crisis (April – June 2010)	-14.3	-0.4	-0.5	-0.7
Downgrade of U.S. Debt (August 2011)	-16.6	-1.7	-2.1	-2.6
China's Black Monday (May – September 2015)	-7.1	-5.8	-6.9	-8.5
Inflation Fears (February 2018)	-8.5	-3.5	-4.2	-5.2
Q4 2018 (October – December 2018)	-13.5	-4.4	-5.4	-6.8

S&P Dow Jones Indices LLC. Data from Dec. 31, 2003 to Dec. 31, 2019. 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.

can suffer significant losses during periods of large equity market drawdowns. This has led many investors to utilize a risk-based asset allocation framework where portfolios allocate to investments across unique risk sources in order to build a truly diversified portfolio.

ARP strategies attempt to harvest an underlying source of risk under the assumption that an investor should be compensated—over the long term—for assuming this risk. ARP strategies have historically exhibited low or negative correlations with traditional asset classes and investors are increasingly using them in an attempt

to improve portfolio diversification and reduce drawdowns.

ARP strategies exist in many asset classes and styles—such as carry, momentum, and value—and are typically constructed long-short to remove market beta and to isolate pure risk exposure. Examples include FX “Value” (which consists of going long undervalued currencies and short overvalued currencies) and Rates “Carry” (which consists of going long higher-yielding bonds and short lower-yielding bonds).

We are currently building out our suite of ARP indices across equities, fixed

income, currencies, and commodities. Exhibit 3 shows hypothetical performance statistics for two of our live ARP indices—FX Value and Rates Carry—illustrating the diversification potential that ARP offers.

Indices can take on a much more dynamic role than simply offering broad market exposure. When carefully evaluated on an individual basis and in the context of particular investment goals, low volatility, risk parity, and alternative risk premia passive strategies may serve as powerful tools for investors striving to build diversified portfolios. ■

Exhibit 3: Long Term Statistics – S&P Risk Premia Indices

Statistic	S&P 500 TR	S&P Risk Premia FX Value G10 Index TR (15% Target Volatility)	S&P Risk Premia Rates Carry Index TR (15% Target Volatility)
Annualized Return (%)	9.2	8.9	12.7
Annualized Volatility (%)	18.8	15.7	15.8
Risk-Adjusted Return	0.49	0.57	0.80
Maximum Drawdown (%)	-55.3	-32.1	-23.7
Up-Month Outperformance (%)	-	29.9	28.2
Down-Month Outperformance (%)	-	84.3	80.4
Return in Periods of Large Equity Market Drawdowns (%)			
Global Financial Crisis (October 2007 – February 2009)	-50.2	39.5	11.5
Europe/Greece Debt Crisis (April – June 2010)	-14.3	0.7	5.9
Downgrade of U.S. Debt (August 2011)	-16.6	-6.1	5.9
China's Black Monday (May – September 2015)	-7.1	12.0	4.1
Inflation Fears (February 2018)	-8.5	6.3	-0.3
Q4 2018 (October – December 2018)	-13.5	11.9	-2.6

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2003 to Dec. 31, 2019. 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



ESG Gets **the 500 Treatment**



Mona Naqvi
Senior Director
ESG Indices
S&P Dow Jones Indices

Once relegated to the fringes of thematic investing, ESG is coming into its own as a core equity strategy—spurred in part by the creation of the S&P 500 ESG Index. We chatted with Mona Naqvi, Senior Director at S&P Dow Jones Indices, to learn more about how the index bolsters exposure to ESG characteristics while trying not to stray too far from its iconic broad-market benchmark.

1. Why was the S&P 500 ESG Index created?

Mona: We designed the S&P 500 ESG Index to be a sustainable alternative to the S&P 500. By seeking to offer a level of broad market exposure that’s similar to the 500, it may be possible to get core U.S. exposure plus a meaningful boost in overall ESG representation. Investors who would typically look to the 500 can now use this version and make good on their values without having to necessarily compromise their investment objectives.

2. How does the index methodology work?

Mona: The S&P 500 ESG Index is part of our new ESG index series, where we first make some global exclusions that are generally considered to be unacceptable for a standard sustainable index. This means excluding companies with exposure to tobacco, controversial weapons, and those with a low U.N. global compact score. The latter is sort of a catch-all safety net measure for removing the most notable offenders in terms of things like human rights abuses, labor issues, corruption, and the environment. But we also remove companies that are in the bottom 25% of global ESG rankings within global GICS® industry groups using our new S&P DJI ESG Scores. And then based on the companies that remain after having made these exclusions, we can then create an ESG version of almost any one of our regional or country-specific headline indices.

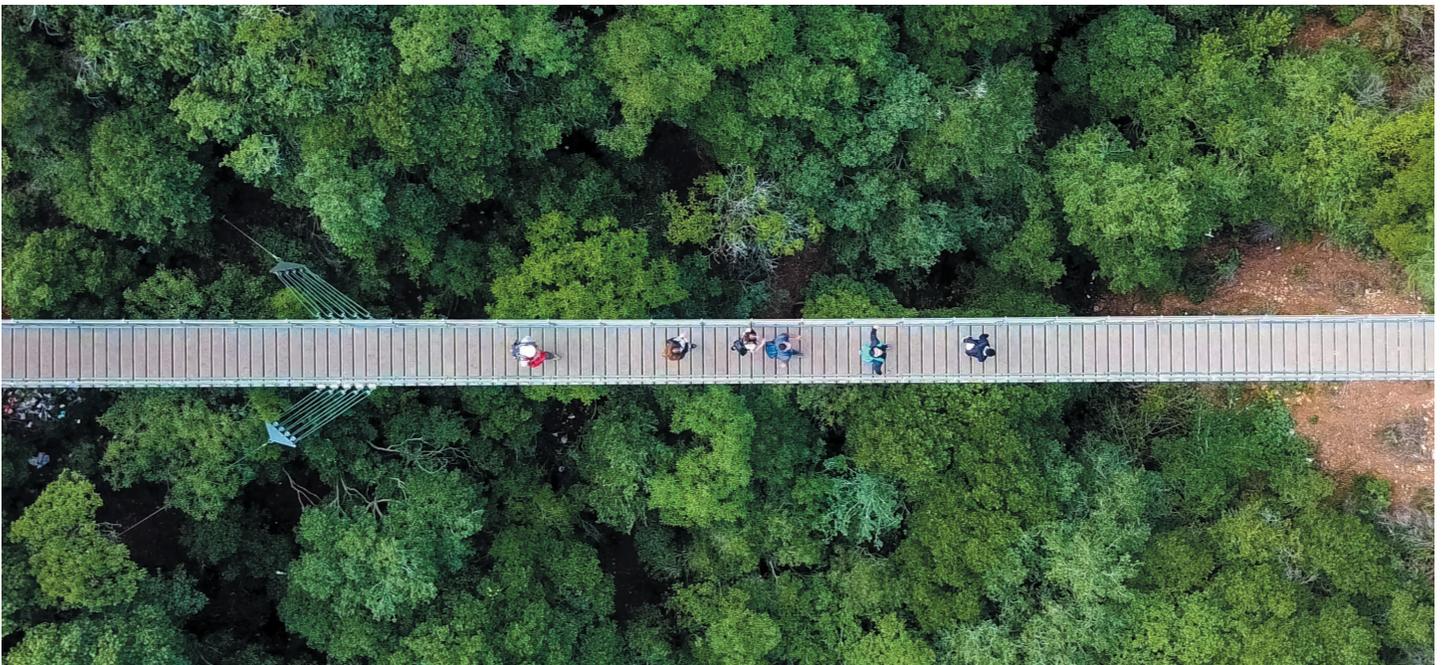
So in the case of the S&P 500 ESG Index, we start with the eligible stocks that remain in the S&P 500 after having made those exclusions and then we select the companies that go into the index by targeting the top 75% of market cap, ranked by S&P DJI ESG Scores, within index industry groups. By selecting companies in this way, we end up with a broadly sector-neutral sustainable version designed to closely track the underlying S&P 500 index.

3. Can you elaborate on what makes the S&P DJI ESG Scores different from other ESG datasets in the market?

Mona: S&P DJI ESG Scores are governed by S&P DJI and have the same level of technical oversight that you would expect from any of our datasets, but they're powered by two decades of research from ESG veteran, SAM, part of S&P Global. We've had a longstanding partnership with them since we launched the world's first-ever global sustainability benchmark, the Dow Jones Sustainability Index (DJSI), in 1999. Over the past 20 years, SAM has been issuing its renowned Corporate Sustainability Assessment (CSA) survey directly to companies. Compared with simply collecting data from companies' public reporting, it's an extremely robust and comprehensive endeavor that offers us a more timely and unparalleled level of insight into topics of growing importance to the sustainability landscape—often long before companies start to disclose on them.

S&P DJI ESG Scores are also industry-specific and focus on the most financially material and relevant ESG signals within specific industries, since not all ESG issues are relevant for all companies. For example, while cyber security might be a pertinent issue for a financial services firm, it might not be as relevant for determining the long-term success of a metals and mining company. And possibly vice versa for an issue like waste management. It's about identifying and taking an industry-specific lens on the issues that matter the most, through a robust process that has been fine-tuned over two decades with real-life investment performance data—as opposed to a purely theoretical or academic approach to ESG, as commonly found with other ESG datasets.

S&P DJI ESG Scores offer powerful insights available directly to the market or through our leading ESG indices including the S&P 500 ESG Index. We hope these tools empower investors to make ESG investing decisions with confidence.■



A New Home for ESG in Real Estate



Mike Orzano, CFA
Senior Director
Global Equities Indices
S&P Dow Jones Indices



Sander Paul van Tongeren
Managing Director,
Co-founder
GRESB

Given the growing popularity of ESG investing and the large size and specialized nature of real estate assets, the investment community needed a clearer way to identify real estate companies that own more sustainable properties. Enter the Dow Jones Green Real Estate Indices—the result of a collaboration between S&P DJI and GRESB, a leader in evaluating the ESG characteristics of real estate companies.

The indices were designed to approximate the investment characteristics of conventional real estate benchmarks, but with an improved sustainability profile. We talked to Mike Orzano, Senior Director at S&P DJI, and Sander Paul van Tongeren, Managing Director and Co-founder at GRESB, to learn more about the indices.

1. Why do real estate companies require a specialized approach to quantifying sustainability?

Sander: While sustainability considerations affect all industries, they are particularly relevant to the real estate sector. With an estimated 40% of all global carbon emissions being driven by the construction and operation of buildings, real estate is a particular industry of focus among ESG investors. Buildings are long-lived and typically cannot

be moved to another place, which leaves them exposed to the direct localized consequences posed by sustainability risks: more stringent regulatory requirements; changing societal preferences for places to work, live, and play; and exposure to climate-related events such as flooding, water scarcity, and extreme weather conditions.

There's a growing recognition by companies and investors that ESG matters are fundamental to business performance and should be disclosed in financial reports. Businesses are also coming to realize that integrating ESG concerns into core business and financial decisions will generate new streams of data that can be used to enhance growth and sustainability. Real estate is a complex business with varying degrees of control on construction quality and operational excellence. The GRESB framework is specifically tailored to real estate companies that seek to embrace



industry best practices on the full range of ESG issues that can be material to shareholders.

2. Why do investors have an appetite for gauging the ESG performance of real estate companies?

Mike: It is estimated that nearly 40% of global carbon emissions are driven by the construction and operation of buildings.¹ Therefore, commercial property owners clearly face material risks from climate change and potential future costs to reduce carbon emissions and other related environmental impacts. Given the challenges associated with measuring property-level sustainability and then aggregating individual properties to the corporate

real estate investment trust (REIT) level, real estate investors have historically lacked high-quality and efficient tools for integrating ESG risks into their investment strategies. These indices are designed to close that gap.

Sander: Concerns about ESG risks are increasingly critical to long-term investment outcomes. Investors need useful information on how real estate companies are navigating issues such as climate change, energy price volatility, water scarcity, changes in environmental legislation, evolving customer demands, and increasingly stringent governance requirements in order to make decisions. Integrating these ESG considerations into investment processes can drive positive results,

whether investors are implementing positive company screening strategies or deploying thematic investment mandates. Empirical studies and a wealth of academic research have also repeatedly demonstrated economically meaningful effects that result from the widespread diffusion of ESG data.

Although leading real estate companies work to actively manage ESG-related issues, including climate resilience and low-carbon economy transition risks, there remains a wide chasm between global ESG leaders and standard business practices. Investors continue to drive capital market demand for high-quality ESG performance data that helps inform portfolio risks and improvement opportunities.

1. Source: U.N. Environment Global Status Report 2017. Towards a zero-emission, efficient, and resilient buildings and construction sector. Estimate includes the construction and operation of buildings including upstream power generation. https://www.worldgbc.org/sites/default/files/UNEP%20188_GABC_en%20%28web%29.pdf

3. How do S&P DJI's and GRESB's capabilities complement each other to make these indices effective market gauges?

Mike: S&P DJI has a long history of creating innovative benchmarks across multiple asset classes and investment categories. The real estate and ESG spaces are no exception. The Dow Jones Select RESI was introduced in 1991, and the Dow Jones Sustainability Index, launched in 1999, was the world's first ESG index. We are excited to be able to partner with GRESB in order to bring this new index series to the investment community.

Sander: The GRESB framework benefits from a decade of industry input by leading institutional investors, real estate companies, REITs, academic advisors, and capital providers from around the world. GRESB provides standardized and validated ESG data to increase capital market transparency. With a governance structure that assures a by-industry, for-industry approach, GRESB is able to elevate global ESG best practices in the real asset sector. Benchmarking core corporate attributes alongside ESG performance metrics provides investors with insights not previously available.

4. How do these indices work?

Mike: The indices consist of all the companies included in the conventional Dow Jones Select Real Estate Securities Index (RESI). Constituent weights are adjusted based on sustainability performance as measured by GRESB. More specifically, all index constituents

are ranked from highest to lowest score, with non-disclosing companies ranked as zero. The weight of each company ranked below the 50th percentile is reduced by 30%, with the additional weight reallocated on a pro-rata basis to the companies ranking in the top 25%.

5. Why did you construct the indices in this way?

Mike: In the ESG space, we have generally found demand to be greatest for index solutions that improve overall sustainability characteristics without introducing significant biases along geographic or sector lines. The Dow Jones Green Real Estate Indices are designed to meet this need by retaining similar investment characteristics relative to conventional real estate benchmarks. The country and sector composition of the indices remains similar, which has historically led to relatively low tracking error to the benchmark Dow Jones Select RESI.

6. What are the most important elements affecting a company's ESG performance and how do the indices capture that?

Sander: GRESB evaluates ESG performance based on seven sustainability criteria, using approximately 50 indicators, such as energy consumption, GHG emissions, water consumption, and waste. The indicators follow a plan-do-check-act logic and are designed to encompass the wide variety of real estate companies and REITs included in the benchmark.

The methodology is consistent across different regions, investment vehicles, and property types, and

aligns with international reporting frameworks. The data are subjected to a multi-layer validation process, resulting in high-quality data that investors and participants can use in their investment and decision-making processes. Based on the assessment, GRESB provides an overall GRESB Score and GRESB Rating for each participant, as well as peer group comparisons that take into account country, region, and sector.

Generalized targets and well-intentioned corporate policies require an integrated action plan across multiple disciplines, or they risk falling short. The key to success is access to reliable data. Real estate companies that establish and track a full range of ESG metrics may end up achieving tangible business outcomes for shareholders.

7. How are the indices unique in the market?

Mike: The Dow Jones Green Real Estate Indices use real underlying property-level data as reported via GRESB's real estate assessment, and are built from a widely used conventional real estate benchmark. Other real-estate-focused ESG index offerings either use generalized ESG assessments that are not specific to real estate companies, use modeled data to estimate exposures, or do not have an established underlying real estate benchmark. Additionally, we have rolled out a complete global index along with key regional subsets in order to offer a more comprehensive index series—something not available previously in the market.■

S&P Dow Jones Indices

A Division of **S&P Global**

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+ Renowned Trucost® environmental metrics

+ Multidimensional analysis of up to 11,000 companies

THERE'S MORE TO IT

ESG DATA TO CLARIFY THE COMPLEX

S&P Dow Jones Indices provides
comprehensive and customizable solutions
for today's ESG marketplace.

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A Tale of Two **Small-Cap** Benchmarks

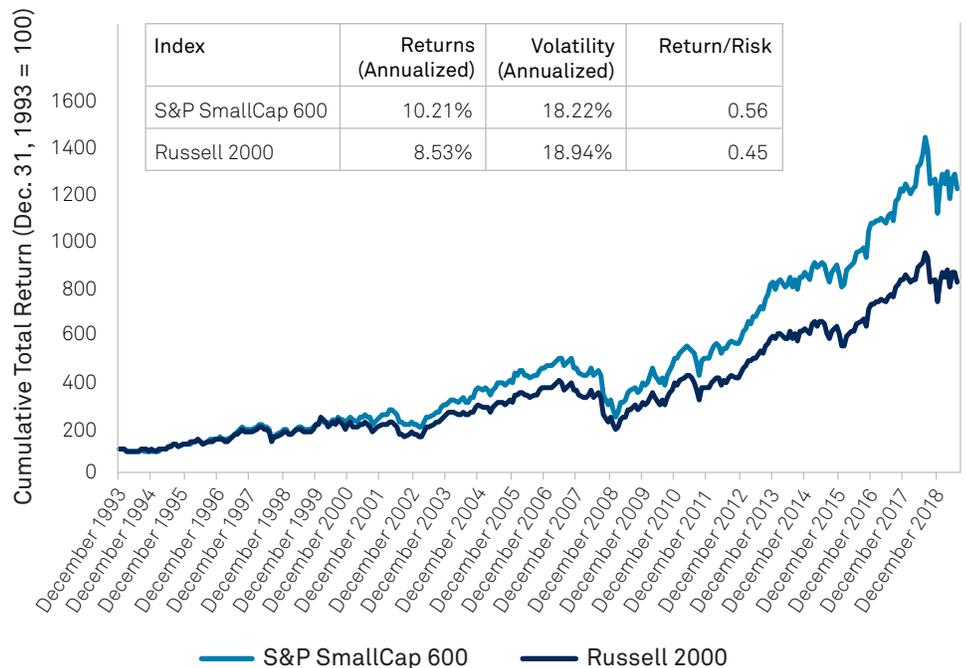


Aye M. Soe, CFA
Global Head
Product Management
S&P Dow Jones Indices

While market participants generally expect risk/return profiles to be similar across broad-market indices representing the same universe, exceptions to the rule do exist. The small-cap universe is one such exception, with notable performance differences between benchmarks.

Since year-end 1993, the S&P SmallCap 600 has returned 10.44% per year, while the Russell 2000 has returned 8.78%. And the differences aren't limited to returns—the S&P SmallCap 600 has also exhibited lower volatility (see Exhibit 1).

Exhibit 1: The S&P SmallCap 600 Outperformed the Russell 2000 over the Past 25 Years



Source: S&P Dow Jones Indices LLC, Factset. Index performance based on monthly total returns between Dec. 31, 1993, and Aug. 30, 2019. Past performance is no guarantee of future results. Charts are provided for illustrative purposes and reflect hypothetical historical performance. The S&P SmallCap 600 was launched October 28, 1994.

Exhibit 2: Index Inclusion Criteria for the S&P SmallCap 600 and the Russell 2000

Inclusion Criteria	S&P SmallCap 600	Russell 2000
Financial Viability	The sum of most of the recent four consecutive quarters' as-reported earnings should be positive, plus the most recent quarter ³	None
Liquidity	Requires annual trading turnover of at least 100% of shares outstanding and a minimum traded shares of 25,000 in each of the six months leading to the evaluation date	None
Public Float	At least 10% of shares publicly floated ⁴	At least 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.	
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.

So why is there a substantial risk/return gap between the two small-cap U.S. equity indices? In 2009, S&P Dow Jones Indices published a study that highlighted the impact of the S&P SmallCap 600's financial viability screen.¹ Requiring index constituents to have a history of positive earnings was meaningful in explaining the S&P SmallCap 600's outperformance and its quality bias compared with the Russell 2000.

A five-year update to the study confirmed these results: the S&P SmallCap 600 continued to outperform, driven predominantly by a quality premium.²

To celebrate the 10-year anniversary of the first study, we recently published another update to the research, looking into the differences in methodology between the S&P SmallCap 600 and the Russell 2000. In addition to

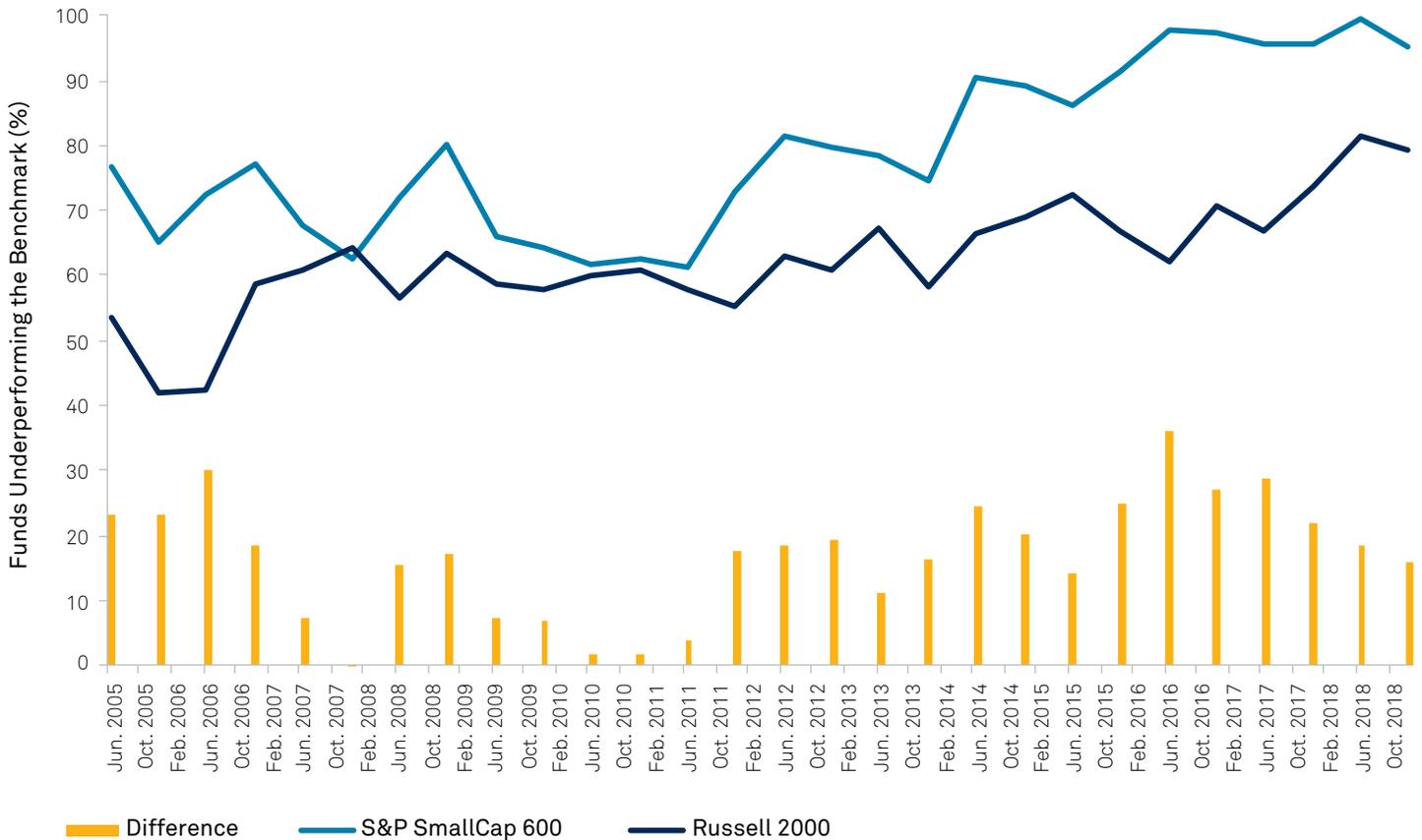
1. S&P Dow Jones Indices defines financial viability as when the sum of the four most recent consecutive quarters' reported earnings is positive, as well as those of the most recent quarter. Soe, Aye and Srikant Dash, "A Tale of Two Benchmarks." S&P Dow Jones Indices, July 2009.

2. Soe, Aye and Phillip Brzenk. "A Tale of Two Benchmarks: Five Years Later." S&P Dow Jones Indices, March 2015.

3. Prior to 2014, S&P Dow Jones Indices' financial viability criteria required four consecutive quarters of positive earnings, instead of the sum of the past four quarters being positive.

4. 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. S&P Dow Jones Indices' public float criteria prior to July 2019 was at least 50% of shares must be publicly floated.

Exhibit 3: Performance of Funds Underperforming the Benchmark Based on Five-Year Annualized Returns



Source: S&P Dow Jones Indices LLC, Factset, CRSP. Data from June 2005 through December 2018. Index performance based on total return in USD. Past performance is no guarantee of future results. Chart is for illustrative purposes.

the profitability criteria, we assessed the impact of two index inclusion criteria—liquidity and public float—that are present in the S&P SmallCap 600 but absent in the Russell 2000.

All else equal, domestic small-cap companies with higher profitability, higher liquidity, and higher investability have tended to earn higher returns than those with lower profitability, liquidity, and investability. These characteristics have helped to explain the S&P SmallCap 600’s historical performance advantage.

Given the performance difference between the S&P SmallCap 600 and the Russell 2000, it’s unsurprising that historically, the proportion of active small-cap managers underperforming the S&P SmallCap 600 has been greater than the proportion underperforming the

Russell 2000. For example, data from the SPIVA U.S. Year-End 2018 Scorecard shows that 78% of small-cap funds underperformed the S&P SmallCap 600 over three-year time horizons, on average. Compare this to 62% underperforming the Russell 2000, on average, over the same periods. Exhibit 3 shows that the results were similar using five-year annualized returns.

The S&P SmallCap 600’s outperformance over the past 25 years highlights the notion that index construction matters and not all benchmarks are created equal. Knowing the key return and risk drivers of the small-cap market segment may offer opportunities to capture broad market exposure while avoiding pitfalls inherent in the small-cap universe. ■

It's a Small-Cap World, After All

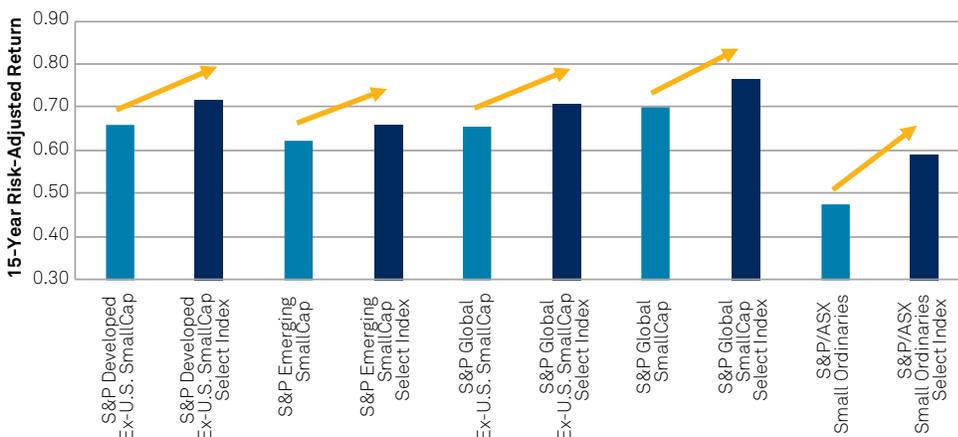


Mike Orzano, CFA
Senior Director
Global Equities Indices
S&P Dow Jones Indices

We've seen that profitability matters for small-cap companies in the U.S., and how it's helped to drive the S&P SmallCap 600 to outperform the Russell 2000. But does the same story hold true for small-caps around the world? Extending our research to global small-cap equity markets, we created the S&P Global SmallCap Select Index and found that a similar effect does in fact exist outside the U.S.

By screening out unprofitable small-cap companies, we have seen improved risk-adjusted returns vs. the benchmark historically, while introducing relatively minimal tracking error (see Exhibit 1).

Exhibit 1: S&P Global SmallCap Select Indices Offered Higher Risk-Adjusted Returns over the Past 15 Years



Source: S&P Dow Jones Indices LLC. Data as of March 29, 2019. 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 2: Underperformance among Active Managers Rose When Benchmarks Incorporated Earnings Screens

Index	Percentage Of Active Managers Underperforming (%)				
	1-Year	3-Year	5-Year	10-Year	15-Year
S&P Developed Ex-U.S. SmallCap	65.52	73.42	73.68	64.15	75.86
S&P Developed Ex-U.S. SmallCap Select Index	73.56	75.95	82.46	73.58	86.21

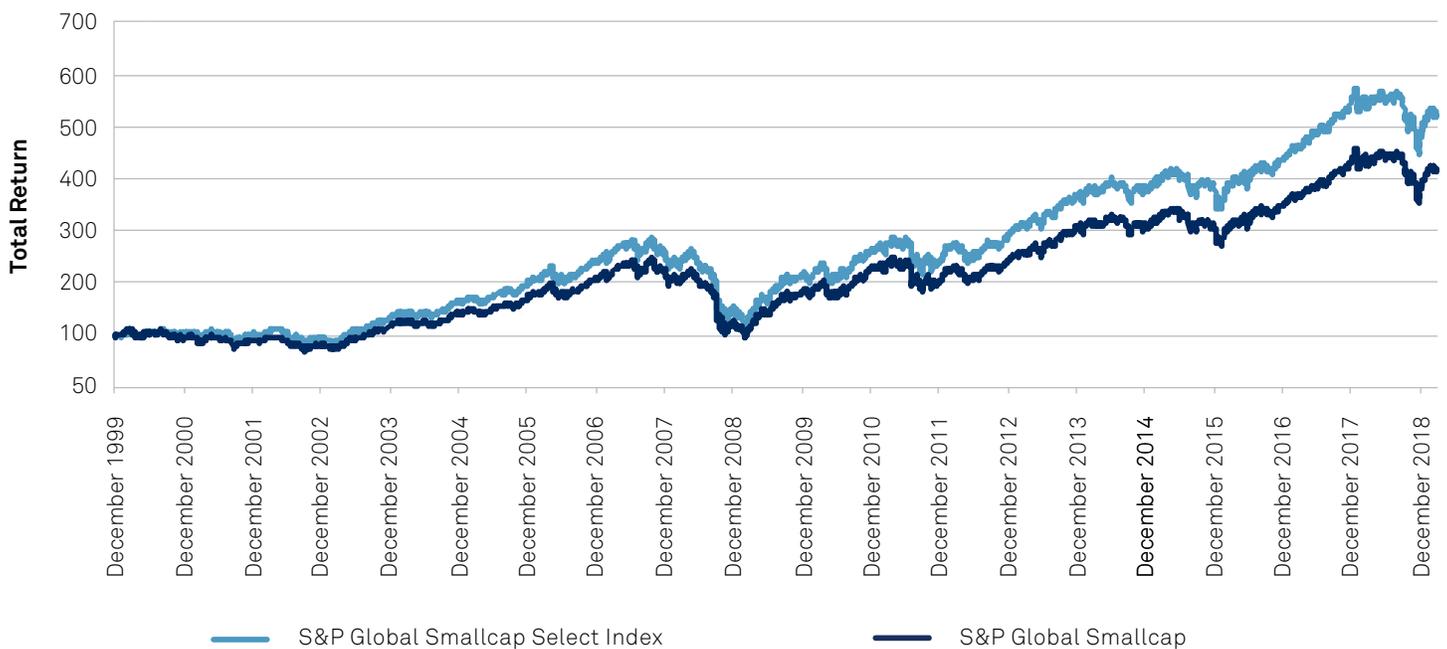
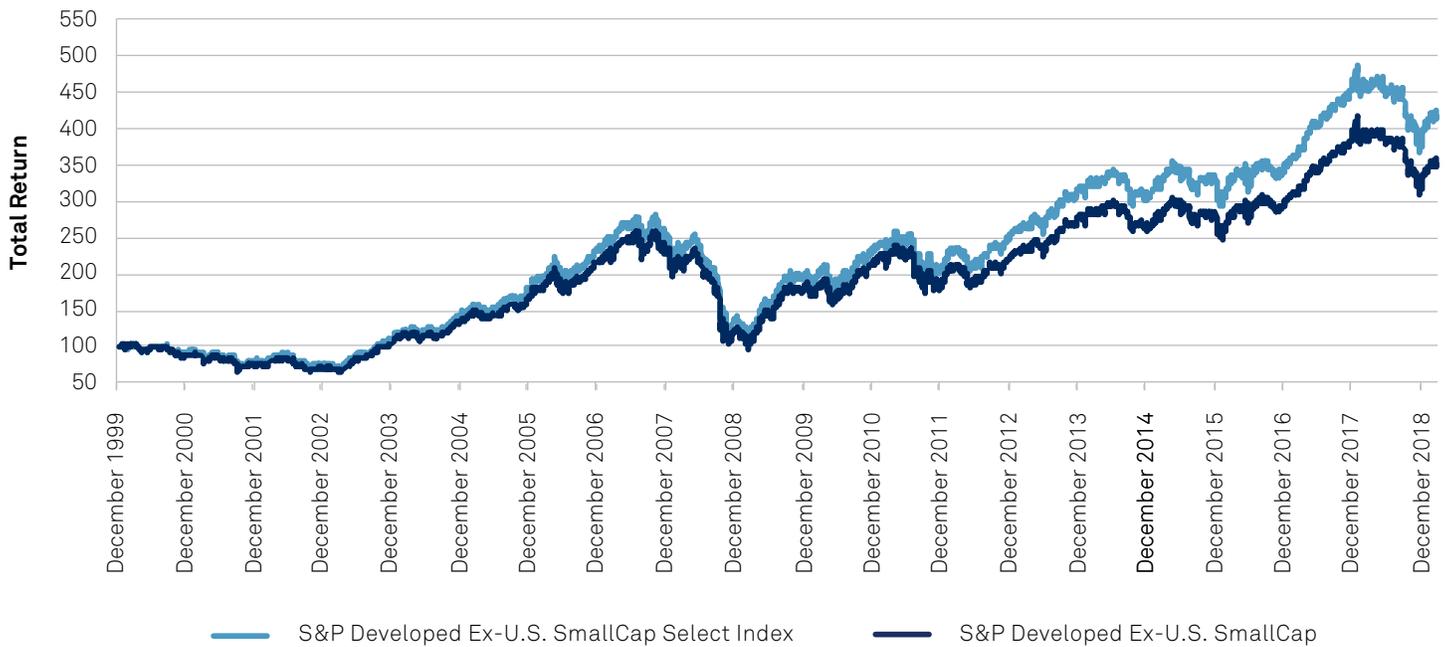
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 3: Risk/Return Comparison – Global and Developed Ex-U.S. Regional SmallCap Select Indices Versus Their Benchmarks

Period	S&P Developed Ex-U.S. SmallCap Select Index	S&P Developed Ex-U.S. SmallCap	S&P Global SmallCap Select Index	S&P Global SmallCap
Annualized Total Return (%)				
1-Year	-8.33	-9.16	-2.45	-2.59
3-Year	7.65	7.16	10.25	10.14
5-Year	4.88	4.06	6.76	5.78
10-Year	13.20	12.35	14.82	14.22
15-Year	8.44	7.57	9.09	8.32
Since Dec. 31, 1999	7.71	6.76	9.03	7.73
Annualized Volatility (%)				
3-Year	11.90	12.06	11.46	12.00
5-Year	12.01	12.31	11.83	12.49
10-Year	15.81	16.29	15.04	15.82
15-Year	17.33	17.81	16.53	17.26
Since Dec. 31, 1999	17.04	17.56	16.36	17.43
Return/Risk				
3-Year	0.64	0.59	0.89	0.85
5-Year	0.41	0.33	0.57	0.46
10-Year	0.84	0.76	0.99	0.90
15-Year	0.49	0.43	0.55	0.48
Since Dec. 31, 1999	0.45	0.38	0.55	0.44
Risk Statistics (Since Dec. 31, 1999)				
Maximum Drawdown (%)	-0.59	-0.60	-0.57	-0.58
Beta With Benchmark	0.97	-	0.93	-
Correlation With Benchmark	1.00	-	0.99	-
Monthly Tracking Error (%)	1.26	-	2.21	-
Sharpe Ratio	0.36	0.29	0.45	0.35

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 1999, to March 29, 2019. Past performance is no guarantee of future results. Table is provided for illustrate purposes and reflects hypothetical historical performance. Annualized volatility calculated as the standard deviation of monthly total returns. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 4: Cumulative Return Comparison—S&P Developed Ex-U.S. SmallCap Indices and S&P Global SmallCap Indices



Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 1999, to March 29, 2019. Indices were rebased to 100 in December 1999. Past performance is no guarantee of future results. Charts are provided for illustrate purposes and 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.

Our not-so-secret recipe entails requiring companies to post two consecutive years of positive earnings per share in order to be eligible for the index. Likewise, companies are dropped from the index after posting two consecutive years of negative earnings. In order to improve the replicability of the indices, we also eliminate the 20% smallest and 20% least liquid companies within each country, as ranked by float market cap and median daily value traded, respectively. The indices are weighted by float market cap and rebalanced twice a year.

The first thing that we've seen is that excluding companies without a track record of generating positive earnings has historically led to improved long-term performance in global small-cap equities.

Historically, the indices have typically outperformed in down cycles and underperformed slightly in up cycles. The indices have also provided a smoother ride than others in the small-cap space, and volatility, beta, and drawdowns have all been lower relative to conventional small cap benchmarks, with minimal tracking error. Finally, by eliminating the 20% least liquid and 20% smallest securities in each country, the index's liquidity profile has been improved without introducing any significant geographic biases.

Now that we've seen how the index compares to other global small-cap indices, we'll take a look at how it stacks up to active small-cap strategies. Contrary to conventional wisdom, active international small cap managers have generally not fared well relative to their

benchmarks. Adapted from the SPIVA U.S. Year-End 2018 Scorecard, Exhibit 2 illustrates that most international small-cap funds have historically underperformed the S&P Developed Ex-U.S. SmallCap. Unsurprisingly, the average active manager has fared even worse relative to the S&P Developed Ex-U.S. SmallCap Select Index.

Exhibits 3-5 demonstrate the performance and volatility advantages of the S&P Global SmallCap Select Index and the S&P Developed Ex-U.S. SmallCap Select Index, historically. These characteristics have proven consistent across all indices in our regional S&P Global SmallCap Select Index Series. Wherever we look around the world, good things seem to come in small, profitable packages. ■

Exhibit 5: Up and Down Market Comparison – S&P Global SmallCap Select Index and S&P Developed Ex-U.S. SmallCap Select Index

Period	S&P Developed Ex-U.S. SmallCap Select Index	S&P Global SmallCap Select Index
Hit Rate: % of Months the Index Outperformed the Benchmark		
All Months	58.01	54.11
Up Months	45.52	35.21
Down Months	75.26	84.27
Average Monthly Excess Return Versus Benchmark (%)		
All Months	0.07	0.09
Up Months	0.21	0.27
Down Months	0.36	0.57
Market Capture Ratios (%)		
Up Months	99.02	96.62
Down Months	94.37	89.49

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 1999, to March 29, 2019. Past performance is no guarantee of future results. Table is provided for illustrate 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.

It's An Election Year—What Does This Mean For the Market?

In presidential election years since 1945...

The S&P 500® rose in

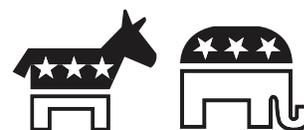
78%
of these years*

and gained an average of

6.3%**

* The S&P 500 has risen in 71% of years since 1945, including election and non-election years.

** The S&P 500 has risen 8.9% on average in the years since 1945, including election and non-election years.



For election years falling at the end of a second term...

The S&P 500 rose only 63% of the time and gained an average of only

1.1%

Why? In general, Wall Street hates uncertainty, and since WWII, incumbents running for reelection were approved **80% of the time**. Without an incumbent in the race, both candidates are **unknown quantities**.

But it doesn't have to be that way.

The S&P 500 did do well in some election years falling at the end of a second term, **gaining...**

11.8% **12.4%** **9.5%**

in 1952. Departing: President Harry S. Truman

in 1988. Departing: President Ronald Reagan

in 2016. Departing: President Barack Obama



Since 1945 once a president is in office, the average return of the S&P 500 has been:

6.9%

if they're Republican

11.1%

if they're Democrat

(Many variables besides party affiliation affect these average returns, so we present this data without drawing conclusions.)



Can the stock market predict who the next president will be?

Past performance is never an indicator of future performance, but looking at the data for every election since 1944...

If the S&P 500 posted gains over the period from July 31 to October 31, **the party currently controlling the White House won the election**

82% of the time.

If the S&P 500 declined, the opposing party won

88% of the time.

Source: Sam Stovall, CFRA Research, S&P Dow Jones Indices. Data: 12/31/45-12/31/19, with the exception of data following "Can the stock market predict who the next president will be?" which spans 7/31/44-12/31/19. Infographic is provided for illustrative purposes. The launch date of the S&P 500 was Mar. 4, 1957. 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 when the index was officially launched. Past performance is not an indication or guarantee of future results. It is not possible to invest directly in an index. Please see the Performance Disclosure at <http://www.spindices.com/regulatory-affairs-disclaimers/> for more information regarding the inherent limitations associated with back-tested performance. Copyright (C) 2020 Dow Jones Indices LLC, a division of S&P Global. All rights reserved. Infographic is provided for illustrative purposes and may reflect hypothetical historical performance. The materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable.

Emerging Markets: Why **China** is Still One to Watch



Sherifa Issifu
Analyst
Index Investment Strategy
S&P Dow Jones Indices

The 2010s proved to be a disappointing decade for the S&P Emerging BMI, at least in relative terms. Over the course of the decade, the index had a total return of 52% in U.S. dollars, compared with 161% for the S&P Developed BMI.

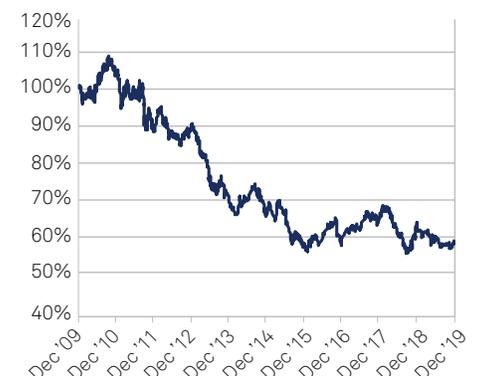
Although emerging markets did show signs of catching up in 2016 and 2017, as Exhibit 1 shows, overall the ratio between the two indices plotted a steady underperformance over the last 10 years. In the early 2000s, the BRICs (Brazil, Russia, India, and China) were viewed as the emerging economies to watch over the coming decades. However, only China has consolidated its place as a true heavyweight, with the underperformance of other major developing markets acting as a drag on benchmark returns.

Exhibit 1: S&P Developed BMI and S&P Emerging BMI Total Returns and Total Return Ratio

Total Returns in U.S. Dollars



Total Return Ratio



— S&P Emerging BMI — S&P Developed BMI — Ratio

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



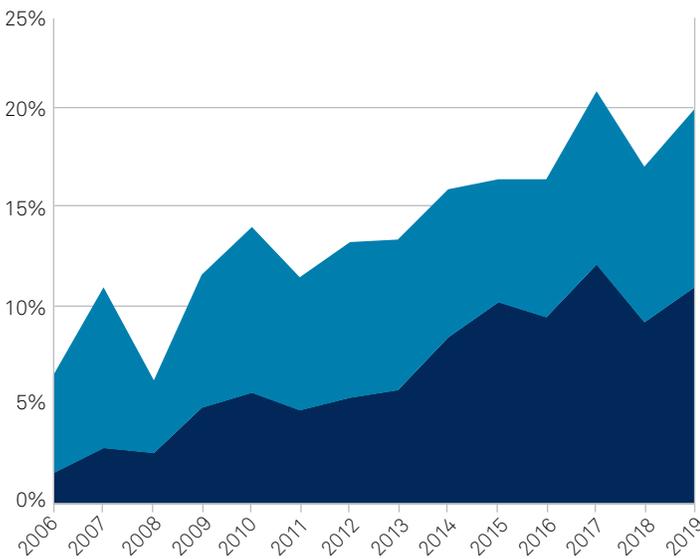
We can get a comprehensive view of the Chinese equity market by combining the S&P Total China Domestic BMI, which represents a broad universe of Chinese securities, with the S&P China A Venture Enterprises Index, which is composed of smaller Shenzhen-listed firms. Taking these indices together, the total capitalization of the Chinese equity market has grown seven-fold since 2006, while the number of listed stocks has quadrupled. Exhibit 2 shows the rise in number and capitalization of Chinese equities over the past 13 years.

Rather than price appreciation, the significant driver in the growth of China’s equity markets has been introductions of companies to list on the exchanges—particularly in the tech-heavy sectors. Evidencing this remarkable growth, as Exhibit 4 illustrates, there were more Chinese Information Technology and Communication Services stocks than U.S. ones at the end of the decade. As the new decade unfolds, unfortunately in the midst of health-related fears, China is worth watching. ■

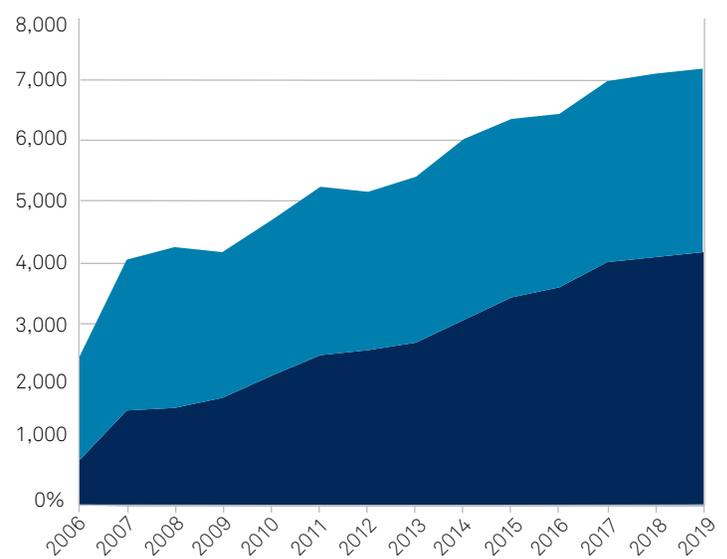
China is a special case in several respects. While banks, commodity-related firms, and local consumer champions have typically been the strongest drivers of performance in emerging markets, China’s boom in equities has encompassed a wider and more balanced range of sectors. The result is that the Chinese market has a more diversified sector mix than what is typical for emerging and frontier equity markets.

Exhibit 2: The Rise of China’s Equity Markets

Total Capitalization (USD Trillions)



Number of Stocks

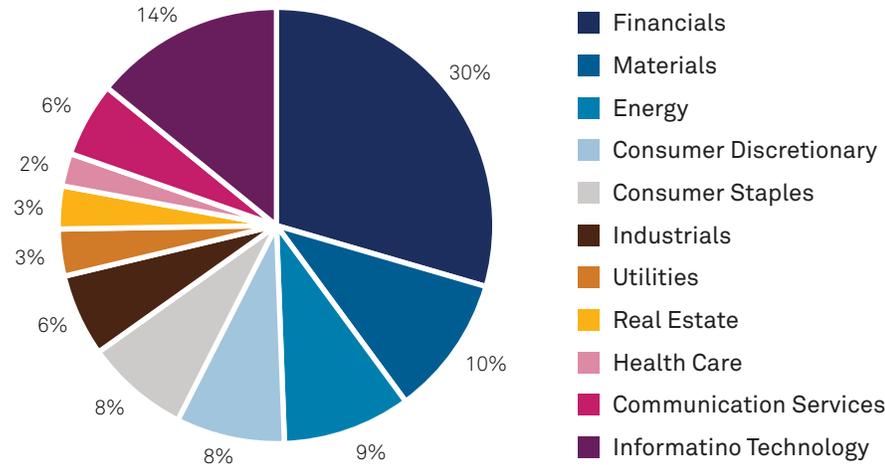


- S&P Total China Domestic BMI + S&P China Venture Enterprises
- S&P Emerging Ex-China BMI + S&P Frontier BMI

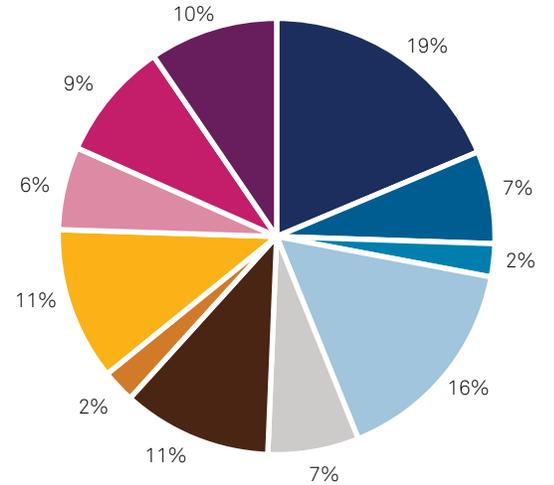
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Charts are provided for illustrative purposes and reflect hypothetical historical performance.

Exhibit 3: Sectoral Breakdowns in China and Emerging Market/Frontier Indices

S&P Emerging Ex-China BMI + S&P Frontier BMI



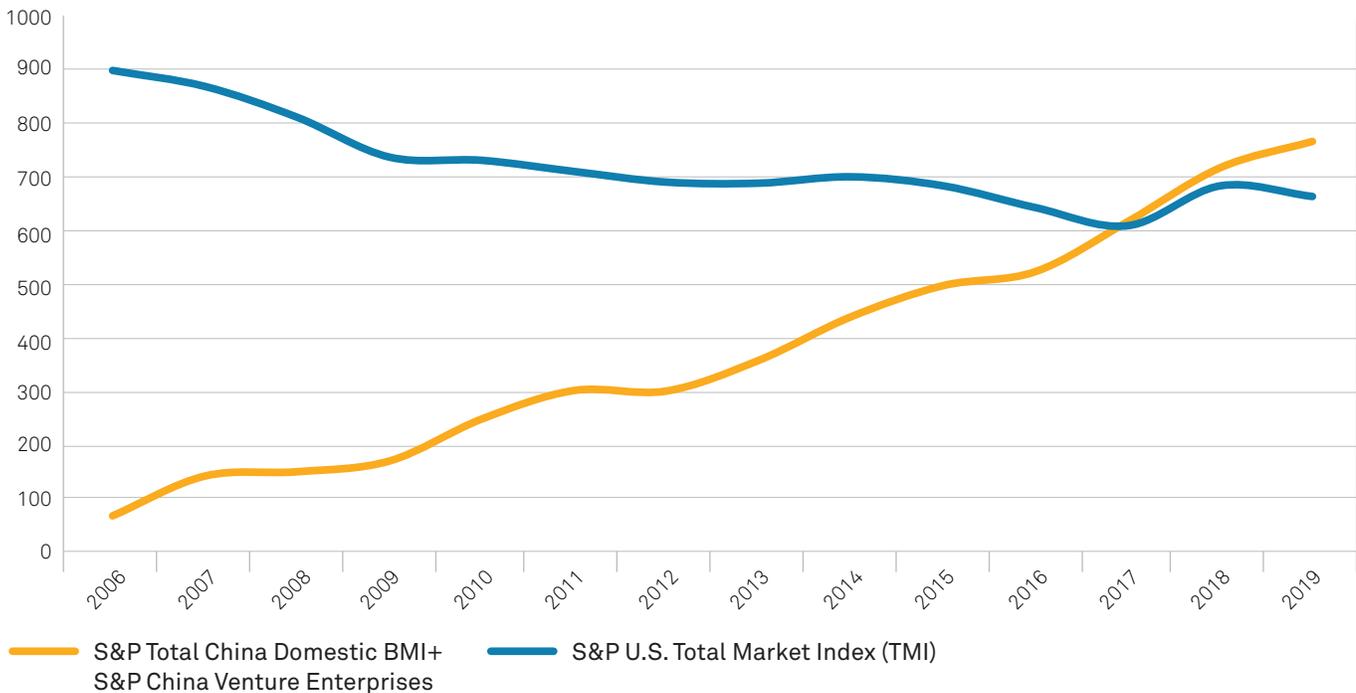
S&P Total China Domestic BMI + S&P China A Venture Enterprises



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Charts are provided for illustrative purposes.

Exhibit 4: The Growth of Chinese Stocks

Number of Stocks (Information Technology and Communication Services Sectors)



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

A Look Inside the Economic Indicator That Tracks Who's Hiring



Reid Steadman
Managing Director,
Global Head
ESG Indices
S&P Dow Jones Indices

As part of an ongoing effort to help investors better understand macroeconomic trends affecting U.S. and global markets, S&P Dow Jones Indices partnered with LinkUp, a leading data-driven job search company, to create the S&P 500 LinkUp Jobs Index Series. We sat down with Reid Steadman, Managing Director at S&P DJI, and Toby Dayton, President and CEO at LinkUp, to learn how these indices provide greater transparency into the hiring profiles of S&P 500 companies.

1. What prompted the development of an index tracking job postings?

Reid: The S&P 500 LinkUp Jobs Index offers unique insight into the market by helping investors understand whether companies are seeking to expand their labor forces and, if so, at what rate. This type of data has always been of interest; the U.S. Bureau of Labor Statistics' (BLS) monthly report on payrolls is among the most-watched economic indicators. The S&P 500 Linkup Jobs Index is similar to the BLS report but is more forward-looking, indicating which jobs are poised to be filled as opposed to which jobs were filled. This new index is also timelier, updating weekly instead of monthly, and with just a single-week lag.

S&P DJI has long produced these types of measures, and they tend to be popular with investors. The best example is the S&P CoreLogic Case-Shiller Home Price Indices—second only to the S&P 500 in terms of the amount of traffic we receive on our website. The S&P 500 LinkUp Jobs Index sits beside this renowned home price index series as an important economic indicator.

Toby: Before the launch of this index, index providers weren't measuring jobs; the S&P 500 LinkUp Jobs Index is the first and only index to provide insights into the health of the global labor market. These indices deliver predictive signals around specific events such as layoffs, closures, product launches and discontinuations, divestitures, and store/facility openings, as well as other talent management indicators such as turnover.



Toby Dayton
President & CEO
LinkUp

2. Who was your target audience in constructing these indices?

Reid: We had in mind a wide range of investors, including financial advisors, investment consultants, hedge funds, retail investors, and institutional investors. The indices will be useful in helping identify shifts in macroeconomic trends in sectors and in the U.S. and global economy more generally.

Because we will also provide open job counts for each company, we expect that investors will use this index as a filter device to find companies with strong hiring trends, indicating a greater commitment to building their businesses.

Toby: We're targeting companies and investment firms that are seeking insights into the global labor market to make better business decisions and investments. Such firms include systematic/quant, quantamental, fundamental, and discretionary.

3. How do S&P DJI's and LinkUp's capabilities complement each other to make these indices effective economic indicators?

Reid: LinkUp brings to the table the ability to collect jobs data at a mass scale on a daily basis,

“The S&P 500 LinkUp Jobs Index is different in that it provides information regarding hiring yet to be done. This gives the market a signal as to a company's investment in human capital.”

while S&P DJI brings the ability to consistently calculate leading benchmarks based on data.

Currently, LinkUp collects on a daily basis over 3.9 million jobs from over 50,000 companies, including those companies that make up the S&P 500. S&P DJI calculates over 700,000 indices daily, spanning every major asset class, including equity, bonds, commodities, and various economic indicators. Both companies have built up considerable data collection and processing expertise, but in complementary areas.

Toby: LinkUp stands as the only jobs data provider in the alternative data space that also operates in the human capital management industry. With a leading job search engine delivering a unique and compelling value proposition for job seekers and employers, LinkUp deeply understands the industry, its

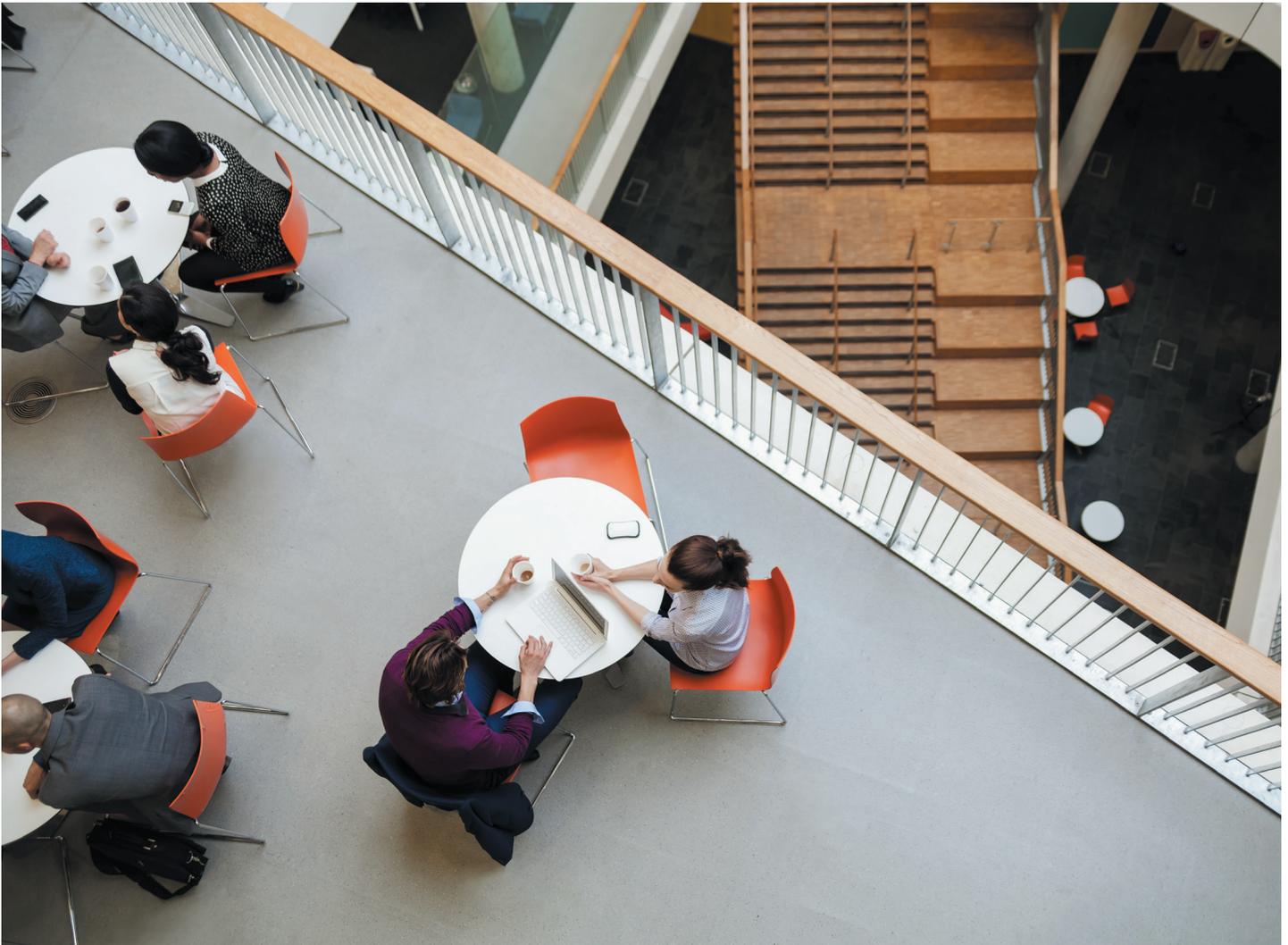
evolution, and the monumental disruption that is continually and materially impacting it.

LinkUp's job openings data accurately reflects the skills, talents, and human capital that employers are seeking at both a macro and micro level. Because of that, this data offers profound insight into the future of jobs, the labor market, and how companies are thinking strategically and tactically about their businesses.

4. What are the key benefits of these indices?

Reid: The three key benefits of these indices are their timeliness, simplicity, and forward-looking nature.

The S&P 500 LinkUp Jobs Indices are published weekly with only a one-week lag from the time LinkUp collects the data from company websites—as opposed to the



BLS report, which is published monthly three weeks after the reference period.

The indices are simple in their methodology and therefore easy to understand. Just as companies in equity indices are typically weighted by market capitalization, companies in these indices are weighted by current job count. This is the single input used in calculation of the indices. Like other indices, a divisor is used to ensure that changes in the constituents do not result in large or discrete changes in the index values.

Finally, the indices are forward-looking. Most leading employment figures provide information on hiring that has already taken place. The S&P 500 LinkUp Jobs Index is different in that it provides information regarding hiring yet to be done. This gives the market a signal as to a company's investment in human capital.

Toby: Five key benefits come to mind. First, it's a key economic indicator of the U.S. economy. Second, it's timely without reporting lags. Third, it uses direct data—open job listings are derived directly from company websites, eliminating self-reporting bias. Fourth is its predictive capacity,

given that the best indicator of a new hire being added to a company and a new job being added to the economy is a company posting an opening on its website. And finally, the index is unique in that no other index provider measures jobs or employment levels.

5. How can these indices be used as economic indicators?

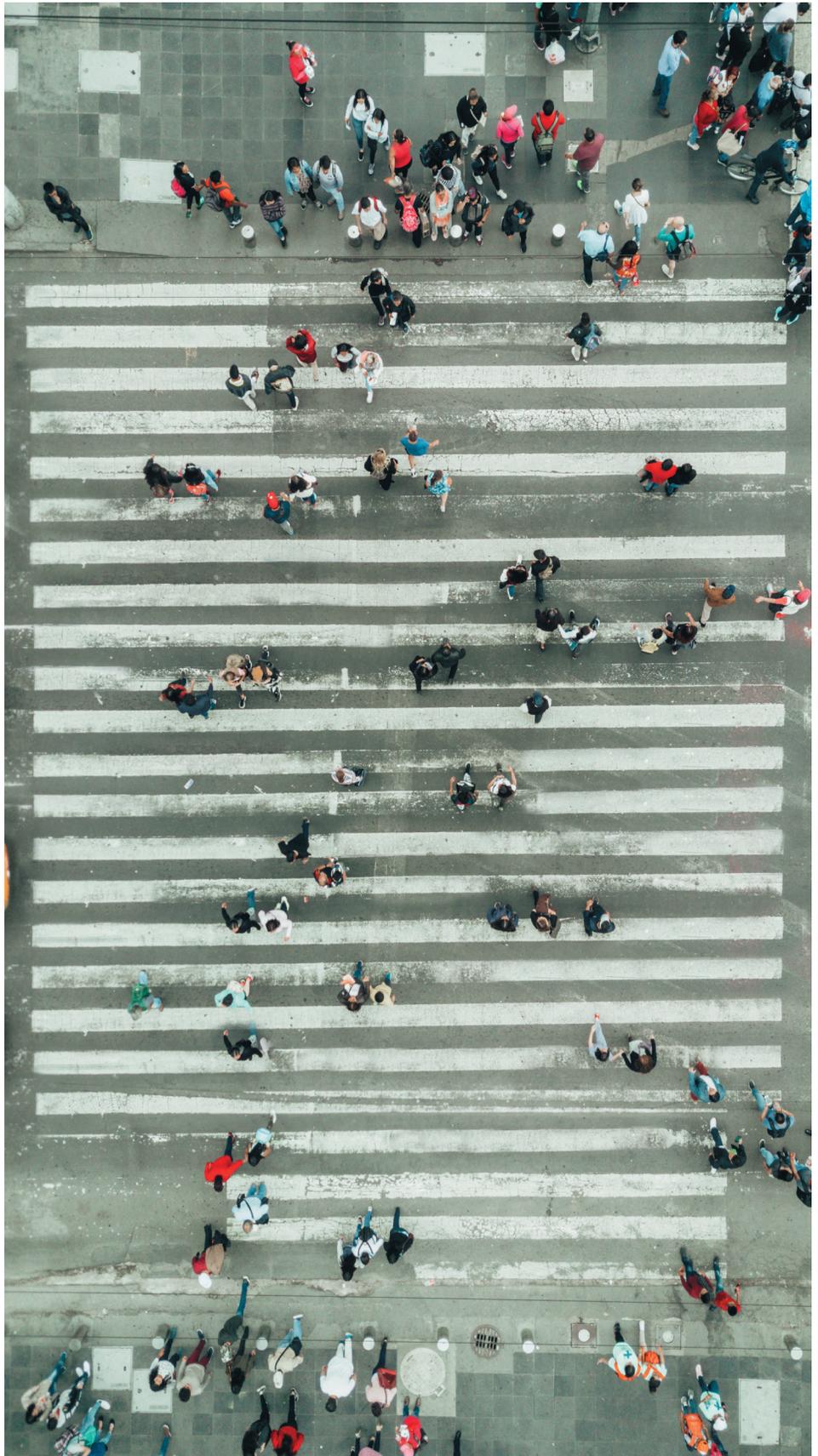
Reid: The S&P 500 LinkUp Jobs Indices are meant to be used with a mix of other economic indicators—including GDP, inflation measures, and home price indices—to help individuals and institutions better understand macroeconomic trends. The headline

index is a powerful indicator, but we also see opportunity for analysis at the sector level and in the data regarding individual companies. We expect that investors will look for sectors and individual companies with pronounced trends indicating strength or weakness and, of course, sectors and companies experiencing inflection points in trends.

Investors can use the information these indices provide in an opportunistic way to inform active management decisions or more systematically for passive management. Investors may eventually demand indices that increase or decrease allocation to certain companies or sectors based on their job posting trends.

Toby: These indices provide powerful insights into the performance of the companies and sectors represented by the S&P 500. Because job openings from the companies in the S&P 500 represent roughly 15% of the total job openings in the U.S., the index is highly correlated to and predictive of non-farm payrolls, unemployment, and the general health of the economy.

At a sector level, the S&P 500 LinkUp Jobs Indices deliver valuable insights into the underlying components of the economy and allow for a wide range of applications and use cases related to investment decisions, asset allocation, and sector rotation strategies.■



Will Companies Continue to Favor Buybacks Over Dividends in 2020?



Howard Silverblatt
Senior Index Analyst
Product Management
S&P Dow Jones Indices

Dividends are easily on track to set their ninth annual record of payment in 2020, with buybacks expected to make their way back to their 2018 tax-inspired levels, even if they don't beat 2018 (which would still be 36% higher than the pre-2018 annual record). The truth is, the question may not be whether companies will continue to favor buybacks over dividends in 2020, but by how much.

First the background and landscape, which are factual, and then the projections, which while hopefully sound, are just that—projections.

Exhibit 1: S&P 500 Buybacks and Dividends in USD Billions

	Buybacks (USD Billions)	Dividends (USD Billions)
2020 Est	803.73	525.00
2019 Est	736.36	485.48
2018	806.41	456.31
2017	519.40	419.77
2016	536.38	397.21
2015	572.16	382.32
2014	553.28	350.43
2013	475.59	311.77
2012	398.91	280.69
2011	405.08	240.20
2010	298.82	205.82
2009	137.64	195.61
2008	339.65	247.29
2007	589.11	246.58
2006	431.83	224.76

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



Dividends are actual cash payments to holders. Once a check is sent, it will be cashed, and there better be money in the bank to cover it (which is one reason we use As Reported GAAP earnings for payouts, as compared to non-defined Operating). The company cannot get the dividend money back (even if the holder uses a dividend reinvestment program), and they will expect another check in three months, with an eventual increase (greedy holders, bless them one-and-all). Historically, dividends have grown more slowly than earnings and cash flow, but have been more

secure, as companies seek to show stable payments, made in both good and bad times. Dividend increases are also measured, as they need to be worked into future cash flow, and are expected to continue past any current market cycle or management fiscal plan. When a company pays a regular dividend over several years, it becomes part of their “culture,” with management typically using it to relay stability and confidence to the market and its shareholders. When companies increase their dividends over several years, future dividend increases become expected, and built

into expectations. Over longer time periods of annual dividend increases, the increases are typically lower than other non-regular dividend issues, as the company now needs to increase its dividend in bad times, when others may not be increasing, and in some cases may be decreasing dividends, as recently seen in the 2007-2009 recession (see the constituents of the S&P 500 Dividend Aristocrats for a list of issues increasing their dividends for at least 25 years in a row).

Dividend initiation (going from no payment to any payment) is a major

Exhibit 2: S&P 500 Regular Cash Dividends in USD Millions

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Q1	58,530	62,043	51,870	48,938	56,051	64,150	71,052	82,082	93,551	96,666	100,862	109,183	117,328
Q2	59,756	61,889	47,443	50,395	59,105	67,337	76,766	87,023	94,698	98,305	104,010	111,603	118,680
Q3	61,212	61,458	46,972	51,265	59,025	70,208	79,276	89,033	95,247	98,427	105,426	115,718	123,117
Q4	67,086	62,496	49,937	54,748	66,198	79,927	84,745	93,062	99,962	103,816	109,456	119,811	126,353
Year	246,584	247,887	196,222	205,347	240,379	281,622	311,839	351,200	383,458	397,213	419,754	456,314	485,478

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



action, as it starts a policy the company will need to continue. In some situations, it can also start a debate if the company moves from growth to value, as Microsoft did in January 2003, when the software issue started to pay a dividend. History shows that companies' initial dividend rates often yield lower than the dividend rates of their competitors (this was true for Microsoft). As a result, companies often increase the rate within a year—justifying the company's decision to initiate a dividend policy and demonstrating its current strength via an increase (Microsoft increased in September 2003, and has increased every year since then). Apple's March 2012 initiation (initially set at USD 9.9 billion, a record initiation), however, was a notable exception, as it yielded within a few basis points of its competitors' yield (see the constituents of the S&P 500 Information Technology sector). Apple increased the next year, and has increased every year since then.

The bottom line for issues with continuing dividend payments is that absent an event, they are perceived as permanent, and must be built into a company's cash flow for both good and bad times. Hence companies typically are conservative regarding dividend increases, since once increased, they are difficult to pull back. Investors should note dividends are typically the last thing to go in bad times (index level dividends didn't decline until 2009), as the last thing a company wants to do is make a public statement that they have a cash flow issue, and that it is not short-term.

Buybacks are when a company goes into the open market (although some, under certain situations, can be done directly with large holders, or can be contractual in employment), and purchases its own common shares. This is typically considered a short-term win-win situation, as the additional buying supports their stock (even if the stock is declining, more buying helps). If a company does enough of it, the share count is reduced for the quarter, increasing

earnings-per-share. To illustrate, a company made USD 1 billion in Q3 2018 and then made the exact same amount in Q3 2019. Last year (Q3 2018) they had 1 billion shares outstanding, giving them an EPS of USD 1.00, but this year (Q3 2019) they reduced their shares by 4% to 0.96 billion, giving them an EPS of USD 1.04—a 4% increase, even as they made the same USD 1 billion.

For Q3 of 2019, 22.8% of the S&P 500 issues had at least a 4% share reduction (a level we view as significant since it increases EPS and reduces the P/E). For shareholders, it's important to know where the growth is coming from—investors would not want to pay the same P/E for an issue growing its earnings via buybacks as they would for an issue growing its earnings via increased business (and margins).

There are two types of buybacks companies do. The first is to cover employee options. To illustrate, a company may buy a stock at the market price of USD 50, and then



use it to satisfy an option with a strike price of USD 30; while they register the USD 50 cost, the net cash cost is USD 20. This type of buying is viewed as an inexpensive way to protect EPS from dilution, and historically companies have satisfied their option requirements even in recessions. The other type of buying is more discretionary (and typically controlled more by the board of directors), as it costs more (in this case the full USD 50 per share), and has the most impact (reducing share count and increasing EPS). These buybacks can easily be increased or decreased (all can, but as stated, the ones used for options cost less), typically via a phone call; therefore their level is more closely tied to the company's position, available cash resources, and market condition. Of note, within the S&P 500, cash remains plentiful (over USD 1.4 trillion is cash-on-hand in the Industrials alone), as does low-cost financing (some companies with an abundance of cash have used debt for buybacks based on their accountants' recommendation—though debt is still

Exhibit 3: Share Count and EPS Illustration

Period	Net Income (USD Millions)	Shares (Millions)	EPS
Q3 2018	1,000	1000	\$1.00
Q3 2019	1,000	960	\$1.04

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

debt), permitting companies to easily support discretionary buybacks.

Historically, companies have presented both dividends and buybacks together, labeling them as shareholder return, when in reality one (dividends) is cash in the pocket for holders, and the other (buybacks) speaks to stock and EPS support. Since dividends are more stable, and a pure cash flow item that is difficult to discontinue, companies have favored buybacks over time. Over the last 20 years (from Q4 1999 through Q3 2019), companies have spent 45.4% more on buybacks than dividends (USD 5.33 trillion on dividends and USD 7.74 trillion on buybacks), with the last 12 months (through September

2019) showing a 60.8% variance (USD 478.9 billion for dividends and USD 770.1 billion for buybacks).

In the current market environment, where significant buybacks have supported stock price and EPS growth (and, many would argue, have helped P/E expansion), buybacks have become a fundamental staple (some call it an addiction) of buying support, with most companies benefiting from it via higher EPS and the continuing bull market, which has made the repurchased shares look like a wise investment (as prices have increased).

For the recently closed Q4 2019 period (not yet reported), the trend is expected to continue, as Q4 2019 dividends come in at USD

Exhibit 4: Percentage of S&P 500 Issues Reducing Their Year-Over-Year Shares by at Least 4%

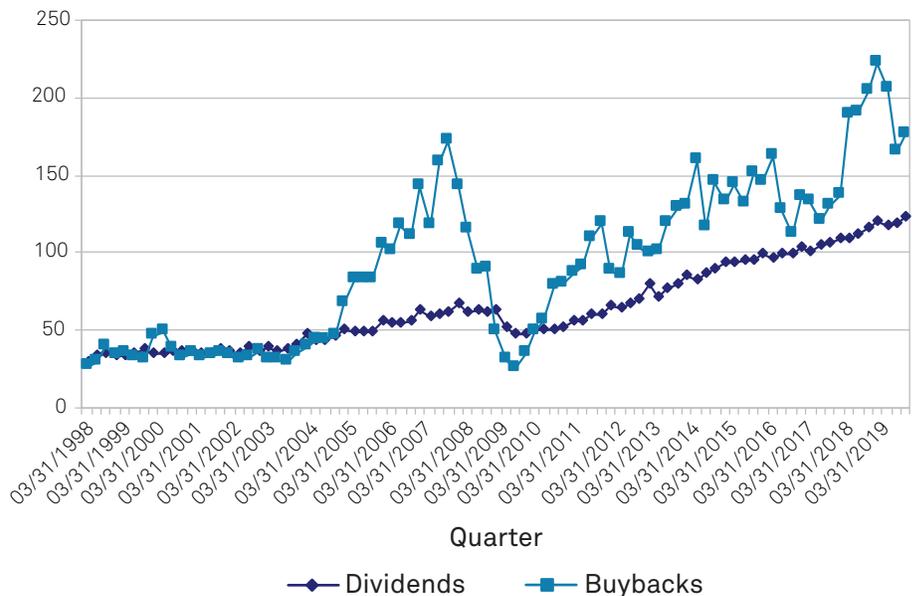
Q3 2019	22.85%
Q2 2019	24.15%
Q1 2019	24.90%
Q4 2018	18.71%
Q3 2018	17.67%
Q2 2018	15.60%
Q1 2018	13.63%
Q4 2017	15.06%
Q3 2017	14.23%
Q2 2017	14.00%
Q1 2017	14.80%

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

126.4 billion, with the current Q4 2019 buyback estimate being USD 189.2 billion. In 2020, the trend—absent an event or negative policy from Washington—is expected to continue, with companies favoring the short-term (and controllable) buybacks over the slower-moving, longer-term (commitment-based) dividends.

For the year 2020, dividends are expected to post their ninth consecutive year of record payments to shareholders, with an annual increase of over 9% (2019 posted an 8.36% payment increase over 2018), with the possibility of a return to double digits, last seen in 2015 at 10.0011%—a rate that is significantly higher than the last Fed wage rate of 2.9% (see the December 2019 report). Q1 is typically busy for dividend increases, as the year is over and shareholder meetings are being

Exhibit 5: S&P 500 Dividends vs. Buybacks in USD Billions



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

scheduled (decreases are event-driven), with increases starting in mid-to-late January, and February being the heaviest month of the year for increases. While many factors will impact dividends (Fed approval is required for both dividends and buybacks by many financial issues), at this point the actual cash payment is expected to exceed USD 525 billion (2019 came in at USD 485.4 billion), with well over 300 companies expected to increase their dividend.

Buybacks, at this point, appear to have a solid base in the number of shares needed to cover options (we'll know more after the 10Ks are filed), with the discretionary purchases being the key. Current programs (and resources) lean towards higher 2020 purchases, with investor (more institutional from my view) sentiment also calling for more. At this point, the 2020

estimate calls for USD 804 billion in buybacks (which would be slightly shy of the 2018 record 806.4 billion), compared to the 2019 estimate of USD 736 billion (Q1–Q3 2019 are reported, but Q4 2019 is open as of this writing), a 9.2% gain (2019 is estimated to post an 8.7% decline from 2018), which is in the area of the expected dividend increase. The dollar breakdown, however, would work out to a 53.5% favoring of buybacks over dividends, showing more short-term commitment to buybacks than long-term dividends. ■

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Global Index News Feed

U.S. AND GLOBAL

S&P DJI's latest Annual Survey of Assets showed that over USD 9.2 trillion was indexed or benchmarked to the **S&P 500** alone, with indexed (or passively managed) assets making up approximately USD 3.6 trillion of this total.*

The **DJSI (Dow Jones Sustainability Index) World**, the first global sustainability benchmark, celebrated its 20th anniversary.

The **S&P SmallCap 600** celebrated 25 years since its launch. Since then, the small-cap equity benchmark has delivered an annualized total return of nearly 11%.

S&P DJI introduced the **S&P DJI ESG Scores**, giving investment professionals, analysts, and corporations insight into companies' ESG performance. The scores leverage **industry-acclaimed assessment data from SAM**, part of S&P Global.

Drawing on two decades of pioneering ESG index innovation, S&P DJI launched the **S&P ESG Index Series**, based on the S&P DJI ESG Scores. The indices aim to provide performance profiles in line with their benchmark headline indices, including the S&P 500, S&P Global 1200, S&P Europe 350, S&P/ASX 200, and S&P Japan 500.

S&P DJI launched the **Dow Jones Green Real Estate Indices**, which are designed to track the performance of real estate companies with a strong track record of sustainability characteristics. The index series uses data from **GRESB**, a leader in evaluating ESG characteristics of real estate companies.

S&P DJI launched the **S&P/Drucker Institute Corporate Effectiveness Index**, which seeks to capture the non-financial "intangibles" of corporate performance that may speak to a company's management stability and overall health.

S&P DJI launched the **S&P 500 LinkUp Jobs Indices**, which show the weekly change in open jobs posted by S&P 500 companies and their subsidiaries. The index series also includes sector indices so investors can see which areas of the economy are adding jobs most quickly.

S&P DJI launched the **S&P GSCI Skim Milk Powder**, the first index of its kind in the commodities market. The index is designed to provide investors with a reliable and publicly available performance benchmark for the skim milk powder industry.

S&P DJI won **Best Index Provider** at the SRP Americas Indexed Insurance Awards 2019.

S&P DJI won **Best ESG Index Provider** at the Environmental Finance Sustainable Investment Awards 2019.

S&P DJI won **Most Innovative Iron Ore Index** at the SGX Commodities Awards 2019.

EUROPE, MIDDLE EAST, AND AFRICA

S&P DJI's iconic benchmarks, the **S&P 500** and the **Dow Jones Industrial Average**, were admitted to the **European Securities and Markets Authority's** register of third country benchmarks, under the European Union's Benchmark Regulation.

S&P DJI became the **leading index provider in South Africa**, with the largest number of JSE-listed ETFs tracking our indices.

S&P DJI launched the **S&P Europe 350 Economic Cycle Factor Rotator Index**, an innovative index designed to rotate into different factor exposures based on different phases of the business cycle.

S&P DJI launched the **S&P GCC Factor Indices**, which focus on factors including volatility, value, quality, and momentum. The indices take into account

*As of December 2018
The Global Index News Feed covers noteworthy news items from 2019.

the local market structure of securities domiciled in the Gulf region, including Saudi Arabia.

S&P DJI won **Best Index Provider** at the AGF Awards 2019.

S&P DJI was named **Best Index Provider** by SRP Africa.

S&P DJI was voted **Best Islamic Index Provider** by the readers of Islamic Finance News.

S&P DJI won **Best Islamic Index Provider** at The Asset Triple A Islamic Finance Awards 2019.

LATIN AMERICA

S&P DJI expanded its suite of cobranded indices with the **Mexican stock exchange (BMV)** by launching the **S&P/BMV IPC CompMX Factor Indices** and the **S&P/BMV IPC Equal Weight Index**.

In conjunction with **Argentina's stock exchange (BYMA)**, S&P DJI launched the Argentinian market's first suite of sector indices, the **S&P/BYMA Argentina General Sector Indices** and the **S&P/BYMA Domestic-Focus Sector Indices**.

S&P DJI expanded its factor offerings in Brazil, working with the **Brazilian stock exchange (B3)** to launch the **S&P/B3 High Beta Index** and the **S&P/B3 Low Volatility High Dividend Index**, a multi-factor index for the Brazilian market.

S&P DJI launched the **S&P Colombia Dividend Index**, the first dividend strategy index available in Colombia.

With the Santiago Stock Exchange, S&P DJI launched the **S&P/CLX Domestic-Focus Sector Indices**, which are designed to measure the eight primary Chilean industries.

S&P DJI launched the **S&P Latin America Ex-Mexico BMI**, which seeks to measure the performance of an S&P Latin America BMI subset that excludes members of the S&P Mexico BMI.

ASIA PACIFIC

Together with **New Zealand's stock exchange (NZX)**, S&P DJI launched the **S&P/NZX 50 Revenue Exposure Index** and **S&P/NZX 50 Foreign Revenue Exposure Index**, which seek to measure the performance of companies that have higher-than-average revenue exposures within and outside of New Zealand, respectively.

In conjunction with the **Japan Exchange Group (JPX)** and its group company **Osaka Exchange (OSE)**, S&P DJI launched the **S&P/JPX JGB VIX Real-time Index**, which seeks to reflect real-time intraday moves of the S&P/JPX JGB VIX.

S&P DJI won **ETF Index Provider of the Year, Asia** at the Asia Asset Management Best of the Best Awards 2019.

S&P DJI won **Index Provider of the Year, Asia** at the Asia Asset Management Best of the Best Awards 2019.

S&P DJI won **Index Provider of the Year, ASEAN** at the Asia Asset Management Best of the Best Awards 2019.

S&P DJI won **ETF Index Provider of the Year, ASEAN** at the Asia Asset Management Best of the Best Awards 2019.

S&P DJI won **Best Index Provider, Asia** at The Asset Private Banking and Wealth Management Awards 2019.

S&P DJI won **Index Provider of the Year** at the Asia Risk Awards 2019.

S&P DJI won **Best ETF Index Provider** at Insurance News Asia's Institutional Asset Management Awards 2019.

S&P DJI won **Best Smart Beta Index Provider** at the SRP Awards Asia 2019.

Complimentary Events & Webinars

10th Annual Australian Indexing & ETF Masterclass	March 3 and 5	Melbourne, Sydney
Passive Solutions for Investors Without a Crystal Ball	March 19	London
6th Annual Mexico Indexing & ETF Masterclass	March 26	Mexico City
Boston Financial Advisor Forum	April 22	Boston
4th Annual Insurance Investment Summit	May 7	New York

On-Demand

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Discover how ESG characteristics may complement earnings and other financial factors in assessing companies' long-term potential.

How do Fixed Income Strategies Fare in Periods of Crisis?

Explore how fixed income ETFs have performed in various market cycles and how that performance may help inform risk management decisions.

Reframing Retirement Goals: Look Beyond Accumulation

Learn more about the S&P STRIDE Index Series, an innovative risk management framework designed to address retirement income uncertainty by mitigating sequence-of-returns and inflation risk.

A Practitioner's Guide to Sector Rotation

Explore the ins and outs of rules-based sector strategies that have historically beaten the benchmarks.

A Renewed Focus on Income in Latin America

How can investors seamlessly incorporate income-driven approaches into their asset allocation strategies? Get a 360-degree view of the latest passive dividend strategies tailored for Latin American investors.

Is India's Future Passive?

As passive investing gains traction in India, see how market volatility and regulatory changes have influenced this shift in Indian investors' focus.

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Indexology Top Blog Posts

Four Decades of the Low Volatility Factor

Hamish Preston

Many financial theories are based on the idea that riskier investments should offer higher returns. However, there is a bank of evidence—accumulated since the 1970s—showing that less volatile stocks posted higher risk-adjusted returns across a number of time horizons, regions, and market segments, historically. [Read on...](#)

Are Active Funds Better at Managing Risks? Not Really.

Berlinda Liu

In investing, risk and return are two sides of the same coin; the expected returns of an asset must be accompanied by variation or uncertainty around the outcome of those returns. All else equal, higher-risk assets should be compensated, on average, by higher returns. The same philosophy applies to performance evaluation. The performance of both active and passive funds should be evaluated in proportion to the risks taken to achieve those returns. [Read on...](#)

Why Facebook Was Dropped from the S&P 500 ESG Index

Reid Steadman

When the S&P 500 ESG (Environmental, Social, and Governance) Index underwent its annual rebalance after markets closed on April 30, 2019, several notable companies were removed, including Wells Fargo, Oracle, and IBM. However, the largest component to be dropped was Facebook. A day before its exclusion, Facebook held a weight of 2.5% in the S&P 500 ESG Index. At that time, Facebook was the fourth-largest company in the S&P 500, the parent index for the S&P 500 ESG Index, with a weight of 1.9%. [Read on...](#)

What Mega Insurers' Turn to Passive Could Mean for Other Large Institutions

Kelsey Stokes

Of the more than USD 3.4 trillion invested in ETFs in the U.S., retail investors comprise the majority of the market. While pensions and endowments have been slow to use ETFs in their investment portfolios, one segment of the institutional market—insurance—has been steadily increasing their usage of ETFs. Earlier this year, S&P DJI analyzed the use of ETFs in the U.S. insurance industry, using regulatory data. These trends may offer insight for other institutional investors. [Read on...](#)

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Pop Quiz

1. It's estimated that the construction and operation of buildings is driving ___% of global carbon emissions.

- A 20
- B 30
- C 40

2. The substantial risk/return gap between the S&P SmallCap 600 and the Russell 2000 has been driven predominantly by a:

- A Value premium
- B Size premium
- C Quality premium

3. Active international small-cap managers have generally not fared well relative to their benchmarks.

- A True
- B False

4. Job openings from companies in the S&P 500 represent roughly ___% of the total job openings in the U.S.

- A 10
- B 15
- C 30

5. The sector make-up of the S&P 500 ESG Index depends solely on the sectors' ESG scores.

- A True
- B False

6. In election years since 1945, on average the S&P 500 has historically:

- A Posted a gain above the average of 8.9%.
- B Posted a gain below the average of 8.9%.

7. The S&P 500 Low Volatility Index has outperformed about ___% of the time when the S&P 500 has recorded a down month.

- A 12
- B 47
- C 83

8. The Chinese market has a ___ diversified sector mix than what is typical for emerging and frontier equity markets.

- A More
- B Less

9. Over the last 20 years, companies have spent:

- A 45.4% more on dividends than buybacks.
- B 45.4% more on buybacks than dividends.

-
- 1. C. 40
 - 2. C. Quality premium
 - 3. A. True
 - 4. B. 15
 - 5. B. False

- 6. B. Posted a gain below the average of 8.9%.
- 7. C. 83
- 8. A. More
- 9. B. 45.4% more on buybacks than dividends.

Soundbites



Not a single sovereign bond index we track ended in the red. Considering 42 central banks cut policy rates in 2019, this may have been expected, but we would have to go back to 2004 for the last time not a single S&P DJI sovereign bond index ended the year in the red.

Brian Luke, Global Head, Fixed Income Indices, S&P DJI, in the blog post “Bonds Saw Green in 2019, but They May Be Red in 2020”



A quarter of all professionally managed assets now incorporate ESG considerations, from the impact of climate change to equality and human rights.

Mona Naqvi, Senior Director, ESG Indices, S&P DJI, in the paper “Discover Materials Insights with ESG Data”



Quality was one of the few factors that managed to deliver higher returns than the S&P 500 in 2019. Upon deeper examination, we found that profitability was the biggest return contributor to the quality factor.

Aye Soe, Global Head, Product Management, S&P DJI, in the blog post “The Quality Factor Beat the S&P 500 in 2019”



There was a tremendous increase in S&P 500 sectoral dispersion around the 2016 U.S. presidential election as the anticipated policies from the incoming administration were expected to have varied impacts on companies in different market segments.

Hamish Preston, Associate Director, U.S. Equity Indices, S&P DJI, in the blog post “What’s Your U.S. View?”



Financials and Consumer Discretionary—the two largest sectors of the S&P China 500 by weight—contributed the most to the index’s positive performance in 2019.

John Welling, Associate Director, Global Equity Indices, S&P DJI, in the blog post “S&P China 500 Ignores Trade Tensions to End the Year on a High Note”

S&P Dow Jones Indices

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PERFORMANCE DISCLOSURE

The S&P Total China Domestic BMI was launched November 27, 2013. The S&P China A Venture Enterprises Index was launched August 3, 2017. The S&P Global SmallCap Select Index, S&P Global Ex-U.S. SmallCap Select Index, S&P Developed Ex-U.S. SmallCap Select Index, S&P Emerging SmallCap Select Index, and S&P/ASX Small Ordinaries Select Index were launched December 21, 2018. The S&P Global SmallCap was launched October 1, 2008. The S&P 500 was launched March 4, 1957. The S&P Total China Domestic BMI was launched November 27, 2013. The S&P Risk Parity Index – 10% Target Volatility, S&P Risk Parity Index – 12% Target Volatility, and S&P Risk Parity Index – 15% Target Volatility were launched July 9, 2018. The S&P China A Venture Enterprises Index was launched August 3, 2017. The S&P SmallCap 600 was launched October 28, 1994. The S&P Risk Premia FX Value G10 Index TR (15% Target Volatility) was launched February 10, 2020. The S&P Risk Premia Rates Carry Index TR (15% Target Volatility) was launched February 10, 2020. 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. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spdji.com. 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.

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.

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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