S&P Dow Jones Indices

A Division of S&P Global

Index Education

The S&P Quality FCF Aristocrats® Indices – Exploring the Principles of Consistency and Efficiency in Free Cash Flow Metrics

Contributors

Elizabeth Bebb, CFA
Director
Factor & Dividend Indices
elizabeth.bebb@spglobal.com

Rupert Watts, CFA, CAIA
Head of Factors and Dividends
rupert.watts@spglobal.com

Wenli Bill Hao
Director, Factors and Dividends Indices
Product Management and Development
Wenli.Hao@spglobal.com

George Valantasis, CFA
Associate Director
Factors and Dividends
george.valantasis@spglobal.com

Kevin Multhaup, CFA, CIPM
Senior Analyst,
Factors and
Dividends Indices
kevin.multhaup@spglobal.com

"Quality is not an act, it is a habit."–Aristotle

Introduction

Aristotle's quote captures the essence of "quality" investing, highlighting the benefits of consistent and virtuous behaviors over occasional acts of brilliance. While the quality factor lacks a universally accepted definition, high quality companies tend to exhibit similar characteristics that persist over the long term. These companies often have resilient and evolving business strategies, robust operating models, strong balance sheets and the ability to generate repeatable cash flows consistently. Over time, we see these characteristics demonstrated in financial metrics via stable cash flows, strong profitability and high efficiency.

The S&P Quality FCF Aristocrats Indices were launched on Sept. 23, 2024, to track high quality companies that emphasize consistent and efficient free cash flow (FCF) generation. To qualify, companies must first demonstrate a minimum of 10 years of continuous positive FCF. Their profitability and efficiency are then assessed using two FCF-based metrics: FCF Margin and FCF return on invested capital (ROIC). These indices have tended to show a factor tilt toward quality and growth while maintaining a defensive stance.

Sign up to receive our latest research, education, and commentary at on.spdji.com/SignUp.

This paper delves into the construction approach, back-tested performance and attribution of the S&P Quality FCF Aristocrats Indices. A follow-up paper will compare these indices to the broader S&P Dividend Aristocrats® Series and examine their performance across economic cycles.

Free Cash Flow: A Barometer of Company Quality

FCF represents the amount of cash generated by a business after accounting for cash outflows necessary to support operations, maintain capital assets and pursue organic growth. Simply put, it is the excess cash a company produces after covering its operational costs and capital expenditures. Firms with a high level of FCF tend to have greater financial flexibility, allowing them to pay dividends, repurchase stock, pay down debt or reinvest in growth opportunities. An important metric for analyzing the potential of a company, it is a cornerstone for discounted cash flow (DCF) valuation, reflecting the operational competence of management and signaling flexibility within internal financing.

The FCF calculation used in this methodology utilizes the generally accepted accounting principles (GAAP) financial measure of net cash provided by operating activities but then subtracts capital expenditures, resulting in a non-GAAP financial measure.

Evaluating a company's FCF over multiple years is crucial, as it offers a clearer assessment of its financial health and durability. Consequently, these indices emphasize consistency, which aligns with the S&P Aristocrats approach. The three core metrics for evaluating quality through FCF are:

1. **Consistent Positive FCF:** 10 years of consistent positive FCF;
2. **Sustained High FCF Margins:** FCF divided by revenue, averaged over the past five years; and
3. **Repeated High FCF ROIC:** FCF divided by the sum of total shareholder equity and total debt, also averaged over the past five years.

Metric 1: Positive FCF for 10 Consecutive Years

The initial inclusion criterion for the S&P Quality FCF Aristocrats is the requirement for 10 consecutive years of positive FCF. This criterion indicates that a company is generating sufficient cash flow over the long term to sustain or grow its operations, managing revenues and expenses efficiently and maintaining sufficient liquidity to meet its short-term obligations.

To analyze the FCF-generation metric, we compared the performance of companies that met the criterion versus the total underlying universe. The analysis shows that, across both

For use with institutions only, not for use with retail investors.

geographical regions, the consistent generation of positive FCF for 10 years drove higher absolute and risk-adjusted returns for companies meeting the standard versus the benchmark.

Exhibit 1: Efficacy of 10 Years of Positive FCF Screen

Metric	S&P 500® with 10 Years of Positive FCF	S&P 500	S&P Developed LargeMidCap with 10 Years of Positive FCF	S&P Developed LargeMidCap
Annualized Return (%)	10.60	8.82	9.13	8.01
Annualized Volatility (%)	15.65	15.06	14.81	15.94
Risk-Adjusted Return	0.68	0.59	0.62	0.50

Indices with 10 years of positive FCF are hypothetical compositions.
Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on monthly 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.

Metric 2: FCF Margin

$$FCF\ Margin = \frac{FCF}{Total\ Revenue}$$

$$Average\ over\ Past\ Five\ Years$$

The FCF margin measures how efficiently a company converts its revenue into FCF, expressed as a percentage of total revenue. Unlike operating margin, which focuses on core operating profit, the FCF margin emphasizes cash generation. A higher FCF margin indicates a stronger capacity to generate cash, often referred to as a "cash cow," which can contribute to a healthier financial position. To minimize short-term fluctuations, we utilize a five-year average for the metric. The FCF margin metric aligns with quality, distinguishing it from FCF yield or dividend yield strategies such as the S&P High Yield Dividend Aristocrats Indices, which tend to tilt to value.

Our analysis compares the top quintile of companies with the highest FCF margins against the bottom quintile. Quintile 1, which consists of companies with higher margins, showed significantly higher absolute and risk-adjusted returns compared to lower-margin quintiles. This indicates that companies with higher margins tended to outperform and experienced less volatility.

For use with institutions only, not for use with retail investors.

Exhibit 2: Efficacy of FCF Margin Metric

Metric	Quintile 1 (Highest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (Lowest)
S&P 500					
Annualized Return (%)	11.67	9.49	10.46	10.50	8.27
Annualized Volatility (%)	16.68	15.40	17.51	18.48	20.14
Risk-Adjusted Return	0.70	0.62	0.60	0.57	0.41
S&P Developed LargeMidCap					
Annualized Return (%)	9.74	8.06	7.16	5.81	2.36
Annualized Volatility (%)	15.87	15.42	16.90	16.36	19.22
Risk-Adjusted Return	0.61	0.52	0.42	0.36	0.12

Quintiles 1-5 are hypothetical compositions.
Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on monthly 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.

Metric 3: FCF ROIC

$$FCF\ ROIC = \frac{FCF}{Total\ Equity + Total\ Debt}$$

Average over last five years.

The FCF ROIC is a key profitability measure of a business; it assesses how efficiently a company is utilizing each unit of invested capital to generate FCF. It serves as a indicator of business quality and is commonly used to identify companies with competitive advantages, providing insights into the health of both the balance sheet and the cash flow financial statement. Utilizing a five-year average for the ratio removes short-term funding anomalies alongside capital expenditure and FCF "noise," generating a more normalized measure and indicating which businesses are generating sustainable FCF benefits from a well-resourced, strong balance sheet positioning.

Our quintile analysis (see Exhibit 3) confirms this, showing that companies in the top quintiles, with higher sustained FCF ROIC, achieved stronger annualized returns. Conversely, lower FCF ROIC levels were associated with increased volatility and diminished risk-adjusted returns.

For use with institutions only, not for use with retail investors.

Exhibit 3: Efficacy of FCF ROIC Metric

Metric	Quintile 1 (Highest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (Lowest)
S&P 500					
Annualized Return (%)	11.65	11.27	9.64	10.65	7.27
Annualized Volatility (%)	16.21	16.53	17.32	17.90	20.10
Risk-Adjusted Return	0.72	0.68	0.56	0.59	0.36
S&P Developed LargeMidCap					
Annualized Return (%)	10.67	7.75	6.99	5.05	2.69
Annualized Volatility (%)	15.98	16.29	15.94	16.65	19.02
Risk-Adjusted Return	0.67	0.48	0.44	0.30	0.14

Quintiles 1-5 are hypothetical compositions.
Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on monthly 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.

Metrics Working Together

While each metric seemed effective on its own, together these three fundamentals tended to more accurately identify high quality companies and enhance risk-adjusted performance. This multi-metric approach mitigates the risk of reliance on a single metric and provides a more comprehensive evaluation of a company's financial health. Exhibit 4 highlights the enhanced risk-adjusted returns and improved defensive characteristics, including lower volatility, reduced drawdowns and better downside capture.

For use with institutions only, not for use with retail investors.

Exhibit 4: Metrics in Combination

Metric	S&P 500	S&P 500 with 10 Years of Positive FCF	S&P 500 Top Quintile FCF Margin	S&P 500 Top Quintile FCF ROIC	S&P 500 Quality FCF Aristocrats Index
Annualized Return (%)	8.82	10.60	11.67	11.65	10.73
Annualized Volatility (%)	15.06	15.65	16.68	16.21	14.49
Risk-Adjusted Return	0.59	0.68	0.70	0.72	0.74
Upside Capture	-	104.23	113.03	109.19	98.34
Downside Capture	-	96.07	101.34	96.81	87.83
Maximum Drawdown	55.25	51.91	51.98	46.73	41.85
Metric	**S&P Developed LargeMidCap**	**S&P Developed LargeMidCap with 10 Years of Positive FCF**	**S&P Developed LargeMidCap Top Quintile FCF Margin**	**S&P Developed LargeMidCap Top Quintile FCF ROIC**	**S&P Developed Quality FCF Aristocrats Index**
Annualized Return (%)	8.01	9.13	9.74	10.67	12.46
Annualized Volatility (%)	15.64	14.81	15.87	15.98	14.78
Risk-Adjusted Return	0.50	0.62	0.61	0.67	0.84
Upside Capture	-	93.74	101.15	104.23	103.12
Downside Capture	-	87.22	93.08	92.26	82.16
Maximum Drawdown	57.53	48.95	50.29	46.85	42.00

Indices with FCF screens applied are hypothetical compositions.
Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on monthly 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.

The initial FCF screen requires 10 years of consecutive positive cash flows, yielding a subset of companies that reliably generated surplus cash, with the other two metrics pinpointing those with the highest quality by considering the efficiency of FCF generation. Pairing FCF margin with FCF ROIC offers a more balanced assessment by integrating profitability with capital efficiency. A company may exhibit a high FCF margin but demonstrate poor capital efficiency, indicating challenges in effectively reinvesting cash. Conversely, a company may achieve a high FCF ROIC but possess a weak FCF margin, suggesting a lack of true cash flow strength. Therefore, collectively, these metrics seek to ensure that a company is not only generating cash but also utilizing its capital wisely.

Full Construction Approach

The initial inclusion screen for the S&P Quality FCF Aristocrats Indices targets companies with a minimum of 10 consecutive years of positive FCF. The methodology then selects the top 100 companies based on an FCF score that is calculated as the average of the FCF margin and FCF ROIC, both averaged over five years. Selected constituents are then weighted

For use with institutions only, not for use with retail investors.

proportionately to their float market capitalization (FMC) multiplied by the FCF score, favoring those with the strongest FCF-generation capabilities.

This methodology has been applied to the S&P 500 universe (U.S. large-cap companies) as well as the S&P Developed LargeMidCap universe, which tracks the top 85% of market capitalization per country across 25 developed markets.

Exhibit 5: S&P Quality FCF Aristocrats Indices Methodology

Criteria	Details
Universe	– S&P 500 – S&P Developed LargeMidCap
Eligibility Criteria	Companies must have generated positive FCF for at least 10 consecutive years
Selection Metrics	– FCF Margin (FCF / Revenue) – FCF ROIC (FCF / [Total Debt + Total Equity])
FCF Score	Five-year average of FCF margin and FCF ROIC
Target Stock Count	100 highest-ranked eligible companies by FCF score
Weighting	FMC * FCF Score
Rebalancing	Semiannual in April and October

Source: S&P Dow Jones Indices LLC. Data as of December 2024. Table is provided for illustrative purposes.

Historical Performance Characteristics

Companies with strong quality FCF characteristics tended to achieve higher risk-adjusted returns and exhibit defensive traits relative to their benchmarks. Exhibit 6 shows the back-tested risk/return statistics for the S&P 500 Quality FCF Aristocrats Index and the S&P Developed Quality FCF Aristocrats Index starting from April 30, 2001, and April 30, 2006, respectively.

For both universes, the historical back-tested performance showed that the S&P Quality FCF Aristocrats Indices have significantly outperformed their respective benchmarks while maintaining lower volatility, which resulted in higher risk-adjusted returns. Specifically, the risk-adjusted return for the S&P 500 Quality FCF Aristocrats Index was 0.74 for the entire period, compared to 0.58 for the S&P 500. The S&P Developed Quality FCF Aristocrats Index had a risk-adjusted return of 0.84, versus 0.50 for the benchmark.

These defensive qualities are further highlighted by the downside capture ratios, with the S&P 500 Quality FCF Aristocrats Index at 88% and the S&P Developed Quality FCF Aristocrats Index at 82%.

For use with institutions only, not for use with retail investors.

Exhibit 6: Performance Statistics

Period	S&P 500	S&P 500 Quality FCF Aristocrats Index	S&P Developed LargeMidCap	S&P Developed Quality FCF Aristocrats Index
Annualized Return (%)				
Full Period	8.79	10.73	7.98	12.46
1-Year	25.02	30.09	18.77	21.73
3-Year	8.94	13.18	6.53	9.59
5-Year	14.53	18.59	11.43	16.42
10-Year	13.10	16.04	10.33	14.67
15- Year	13.88	16.21	10.44	14.83
Annualized Volatility (%)				
Full Period	15.08	14.49	15.95	14.78
Risk-Adjusted Return				
Full Period	0.58	0.74	0.50	0.84
Maximum Drawdown (%)				
Full Period	-50.95	-41.85	-53.82	-42.00
Capture Ratio (%, Full Period)				
Upside	-	98.34	-	103.12
Downside	-	87.83	-	82.16
One-Way Turnover (%, Full Period)				
Turnover	-	19.94	-	28.90

Source: S&P Dow Jones Indices LLC. U.S. data from April 30, 2001, to Dec. 31, 2024. Developed markets data from April 30, 2006, to Dec. 31, 2024. The S&P 500 Quality FCF Aristocrats Index and the S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. Index performance based on monthly total returns 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 linked at the end of this post for more information regarding the inherent limitations associated with back-tested performance.

Defensive Characteristics

Exhibit 7 illustrates the defensive characteristics of the S&P Quality FCF Aristocrats Indices by demonstrating the reduced drawdowns of these indices in times of market stress compared to the benchmarks. These findings confirmed our expectations that companies with strong FCF characteristics were typically of higher quality and possessed traits that enabled them to withstand market stress and uncertainty during economic contractions.

For use with institutions only, not for use with retail investors.

Exhibit 7: Downside Event Impact

Downside Event	Maximum Drawdown (%)			
	S&P 500	S&P 500 Quality FCF Aristocrats Index	S&P Developed LargeMidCap	S&P Developed Quality FCF Aristocrats Index
Global Financial Crisis (Oct. 31, 2007, to Feb. 28, 2009	-50.9	-43.8	-53.8	-42.0
Europe/Greece Debt Crisis (March 31, 2010, to June 30, 2010	-11.4	-9.8	-12.3	-11.7
China's Black Monday (May 31, 2015, to Sept. 30, 2015)	-8.2	-6.6	-10.6	-6.7
Inflation Fears (Jan. 31, 2018, to March 31, 2018)	-6.1	-4.1	-6.0	-4.7
Q4 2018 (Sept. 30, 2018, to Dec. 31, 2018	-13.5	-14.7	-13.2	-12.6
March 2020 (Feb. 29, 2020, to March 31, 2020)	-12.4	-11.4	-12.9	-8.4

Source: S&P Dow Jones Indices LLC. Data from April 30, 2001, to March 31, 2020. The S&P 500 Quality FCF Aristocrats Index and the S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. Index performance based on monthly 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.

The S&P 500 Quality FCF Aristocrats Index has historically provided a buffer against volatility in most high volatility regimes. The index outperformed by around 85 bps on average when the VIX® level was above 30 and it outperformed by an average of 11 bps when the VIX level was between >20-25 and <=15 (see Exhibit 8).

Exhibit 8: Average Monthly Performance in Relation to VIX Level.

VIX Level	Average Monthly Performance (%)	
	S&P 500	S&P 500 Quality FCF Aristocrats Index
>30	-3.74	-2.87
>25-30	-0.05	-0.05
>20-25	0.31	0.42
>15-20	1.07	1.07
>=15	2.48	2.59

Source: S&P Dow Jones Indices LLC. Data from April 30, 2001, to Dec. 31, 2024. The S&P 500 Quality FCF Aristocrats Index was launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. Index performance based on monthly 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.

Quality Metric Exposures

Exhibits 9 and 10 indicate that both S&P Quality FCF Indices have strong return on equity (ROE) and operating margins, highlighting the characteristics of the quality factor. Additionally, both indices also have lower financial leverage than their respective benchmarks.

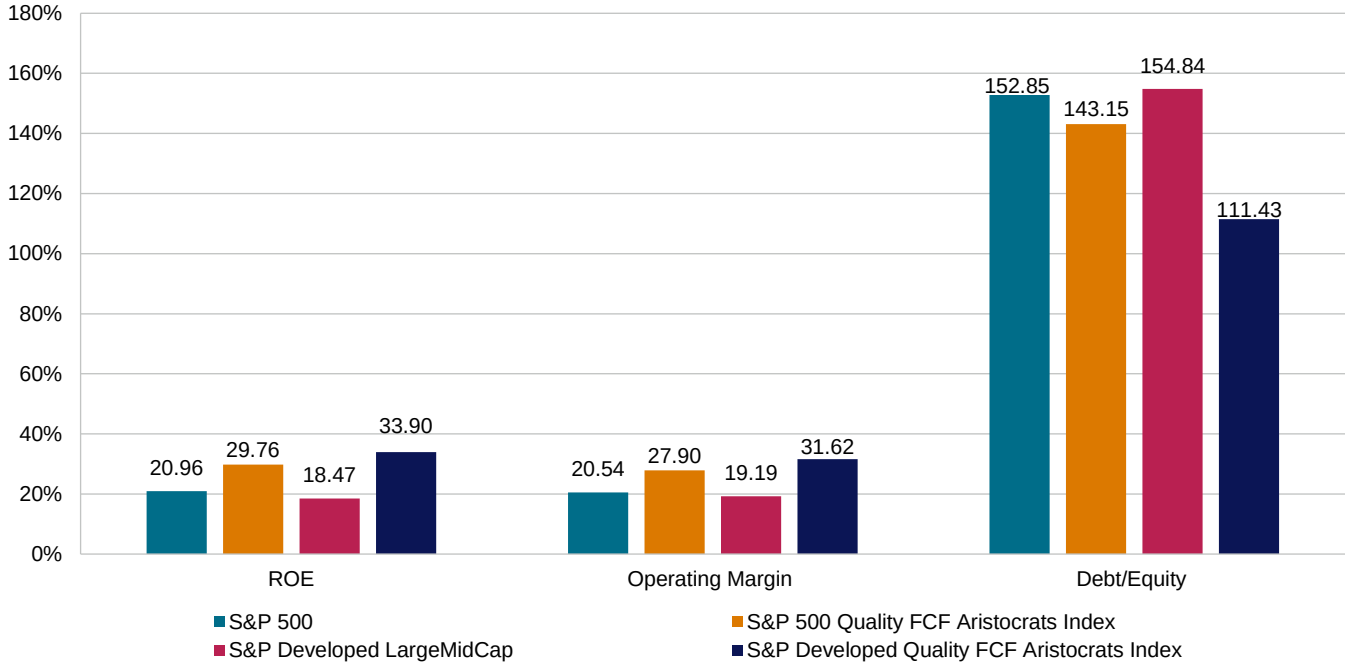
For use with institutions only, not for use with retail investors.

Exhibit 9: Fundamentals

Category	S&P 500	S&P 500 Quality FCF Aristocrats Index	S&P Developed LargeMidCap	S&P Developed Quality FCF Aristocrat Index
Dividend Yield (%)	1.84	1.77	2.36	2.09
Price/Earnings	19.33	21.46	16.83	20.99
Price/Book	2.94	5.35	2.20	5.54
Price/Sales	1.82	3.51	1.46	4.22
ROE (%)	15.96	13.58	14.82	13.87
Historical 3-Year EPS Growth (%)	10.20	9.66	9.36	10.30
Historical 3-Year Sales Growth (%)	20.96	29.76	18.47	33.90
Operating Margin (%)	20.54	27.90	19.19	31.62
Debt/Equity (%)	152.85	143.15	154.84	111.43

Source: S&P Dow Jones Indices LLC. U.S. data from April 30, 2001, to Dec. 31, 2024. Developed markets data from April 30, 2006, to Dec. 31, 2024. The S&P 500 Quality FCF Aristocrats Index and the S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. Index performance based on monthly total returns in USD. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 10: Profitability and Leverage Comparison



Source: S&P Dow Jones Indices LLC. U.S. data from April 30, 2001, to Dec. 31, 2024. Developed markets data from April 30, 2006, to Dec. 31, 2024. The S&P 500 Quality FCF Aristocrats Index and the S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. Index performance based on monthly total returns in USD. 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.

For use with institutions only, not for use with retail investors.

Performance Attribution

Exhibit 11 shows the full period performance attribution for both the S&P Quality FCF Aristocrats indices versus their respective benchmarks. For the S&P 500 Quality FCF Aristocrats Index, sector effects played a significant role, contributing 363.56% from allocation effect and 37.14% from selection effect. The Information Technology and the Communication Services sectors were the two largest contributors, accounting for 218.31% and 79.50%, respectively. This is consistent with their high-margin business models, scalable revenue streams and relatively low capital expenditure requirements. Information Technology contributed a large proportion of the sector benefit from allocation effect, at 149.37%, while both sectors demonstrated outperformance from a selection perspective, with contributions of 68.94% from Information Technology and 65.01% from Communication Services. Conversely, the Consumer Discretionary and Industrials sectors were the largest detractors, with a total effect of -42.38% and -30.16%, respectively.

Similarly for the S&P Developed Quality FCF Aristocrats Index, of the total 483.24% outperformance, 364.24% was driven by the allocation (sector) effect, with 119.00% driven by stock selection. As with the S&P 500 version, the Information Technology sector was a major contributor, adding 263.51%. Additionally, the Consumer Staples, Health Care and Financials sectors also drove strong performance. The Consumer Discretionary sector had a negative total effect of -14.97%, driven by both allocation and stock selection, while Industrials faced a -14.42% impact from stock selection.

For use with institutions only, not for use with retail investors.

Exhibit 11: S&P Quality FCF Aristocrats Index Sector Attribution Analysis

Sector	Benchmark Weight (%)	S&P Quality FCF Aristocrats Index Weight (%)	Allocation Effect (%)	Selection Effect (%)	Total Effect (%)
S&P 500 Quality FCF Aristocrats Index					
Total	100	100	363.56	37.14	400.70
Communication Services	4.84	1.28	14.49	65.01	79.50
Consumer Discretionary	11.4	11.89	-13.44	-28.94	-42.38
Consumer Staples	9.24	15.1	30.20	24.23	54.43
Energy	7.8	7.31	51.37	-7.04	44.33
Financials	15.81	6.06	70.36	-14.67	55.69
Health Care	13.41	16.05	22.74	-39.54	-16.80
Industrials	9.98	11.5	4.17	-34.33	-30.16
Information Technology	20.38	26.48	149.37	68.94	218.31
Materials	2.99	3.7	4.38	1.69	6.07
Real Estate	0.94	0.27	17.28	-	17.28
Utilities	3.19	0.35	12.16	1.78	13.95
S&P Developed Quality FCF Aristocrats Index					
Total	100	100	364.24	119.00	483.24
Communication Services	5.03	2.66	-1.24	25.01	23.76
Consumer Discretionary	10.88	7.81	-7.94	-7.03	-14.97
Consumer Staples	9.14	11.15	29.25	28.72	57.97
Energy	7.70	1.42	35.45	0.09	35.54
Financials	18.79	5.31	64.78	-12.89	51.89
Health Care	11.51	26.74	33.70	20.28	53.98
Industrials	10.77	3.50	4.91	-19.33	-14.42
Information Technology	15.89	38.65	177.27	86.24	263.51
Materials	5.47	1.69	3.87	-3.83	0.05
Real Estate	1.21	0.00	13.90	-	13.90
Utilities	3.55	1.06	10.00	1.75	11.74

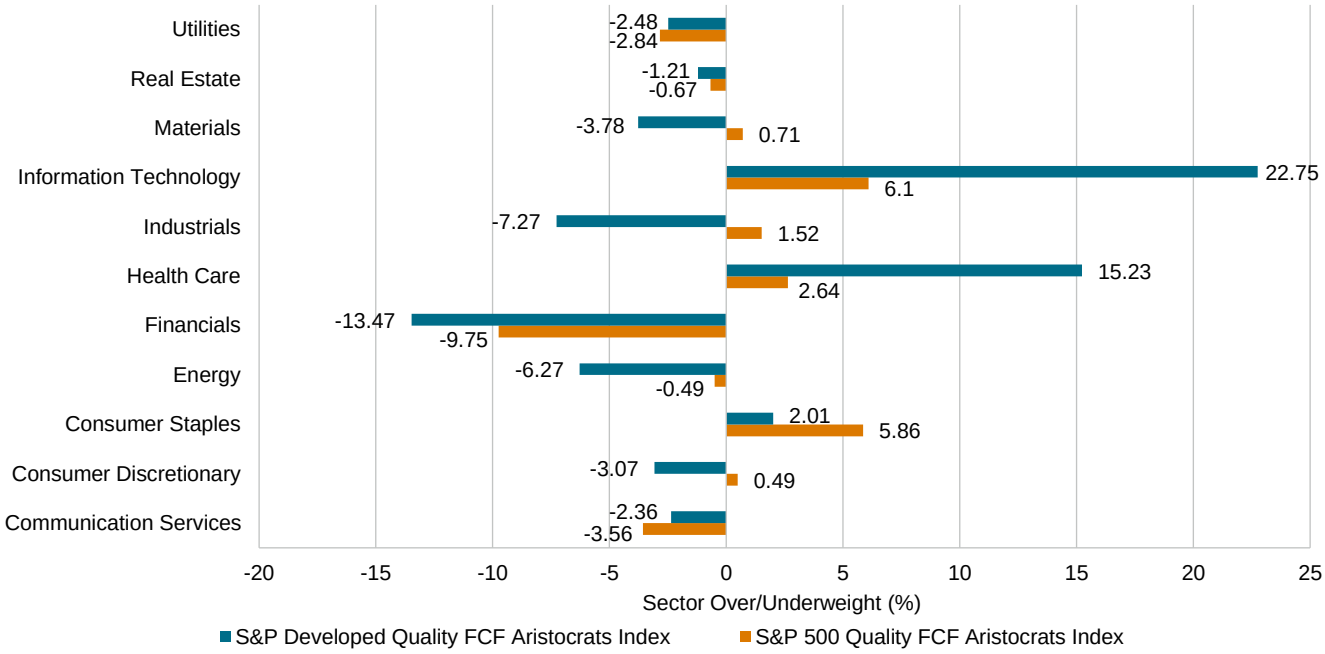
Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on total return in USD. The S&P 500 Quality FCF Aristocrats Index and the S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. 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.

For use with institutions only, not for use with retail investors.

Sector Weightings

Exhibit 12 displays the long-term sector weights in the S&P Quality FCF Aristocrats Indices. It demonstrates that the indices had a notable overweight in consumer-oriented sectors such as Information Technology and Consumer Staples, which may benefit from strong brand power, robust cash flow generation and the ability to reinvest in profitability. The indices are underweighted in sectors like Financials, Real Estate,[1] Utilities and Communication Services, which may face high capital expenditure needs or inconsistent FCF. Sector weights may drift during market cycles.

Exhibit 12: Sector Weight Differentials – S&P Quality FCF Aristocrats Indices versus Respective Benchmarks



Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on total return in USD. The S&P 500 Quality FCF Aristocrats Index and S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. 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.

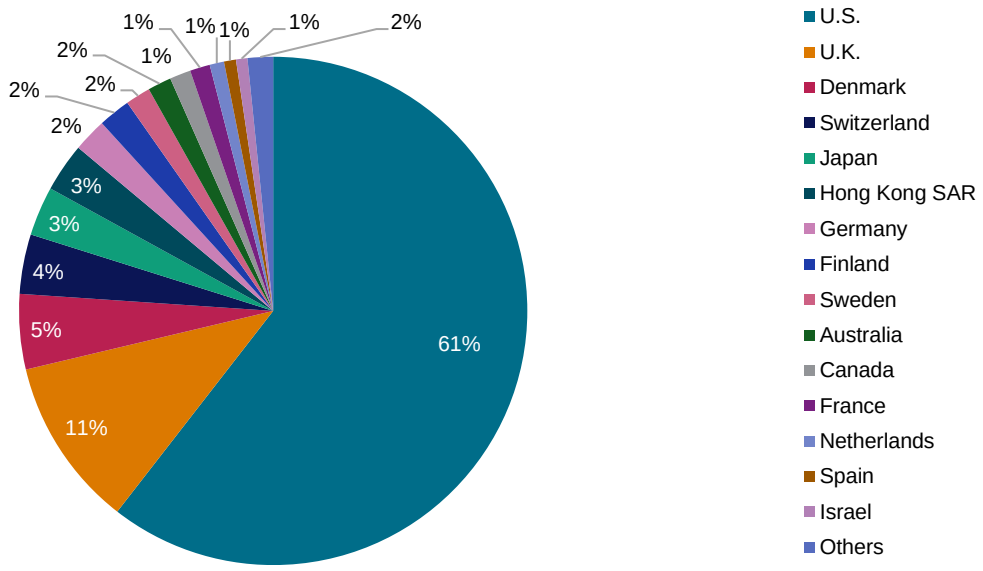
Geographical Weightings

The S&P Developed Quality FCF Aristocrats Index encompasses 26 different developed market countries in its universe. Countries with more than 1% average index weight over the period studied are shown in Exhibit 13.

[1] The Financials underweight is due to banks and insurers being excluded. These types of industries tend to suffer, as their balance sheets can experience large yearly fluctuations in net working capital, which may be difficult to integrate into the FCF calculation. These companies may also not have revenue metrics. Additionally, complex debt structures may complicate the calculation of ROIC. Real Estate is also excluded, as the FCF metric is easily distorted by the volume and magnitude of real estate transactions.

For use with institutions only, not for use with retail investors.

Exhibit 13: Average Country Weights in the S&P Developed Quality FCF Aristocrats Index

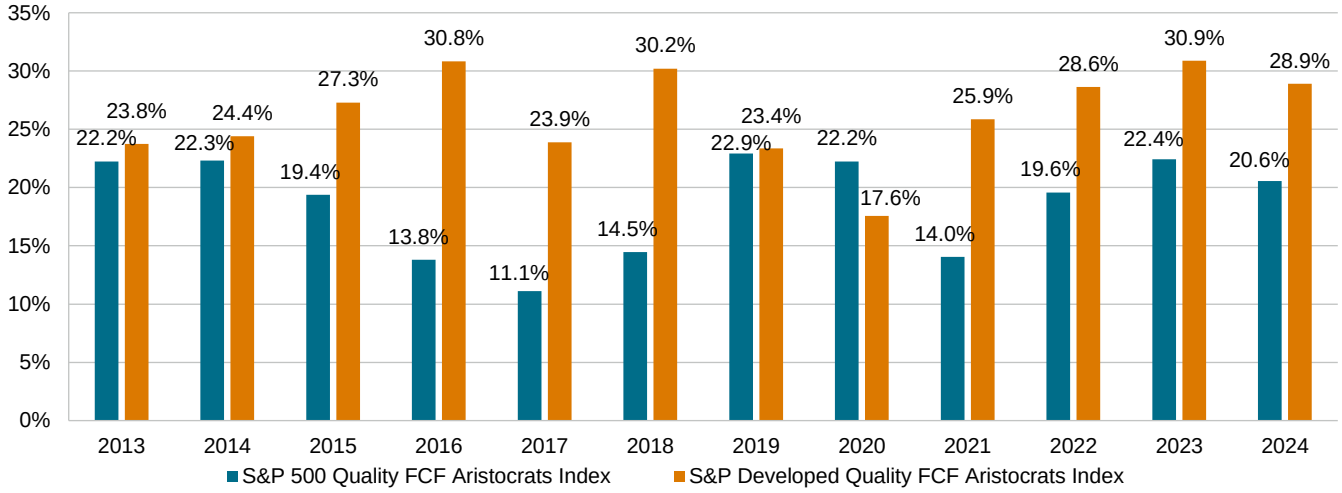


Source: S&P Dow Jones Indices LLC. Data from May 31, 2006, to Dec. 31, 2024. The S&P Developed Quality FCF Aristocrats Index was launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative 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.

Turnover

The S&P Quality FCF Aristocrats Indices exhibited low turnover in both universes compared to other factor indices. The average turnover for the S&P Developed Quality FCF Aristocrats Index was 28.90%, and 19.58% for the S&P 500 Quality FCF Aristocrats Index.

Exhibit 14: One-Way Turnover



Source: S&P Dow Jones Indices LLC. Data from Oct. 31, 2012, to Dec. 31, 2024. The S&P 500 Quality FCF Aristocrats Index and the S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. Index performance based on total return in USD. 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.

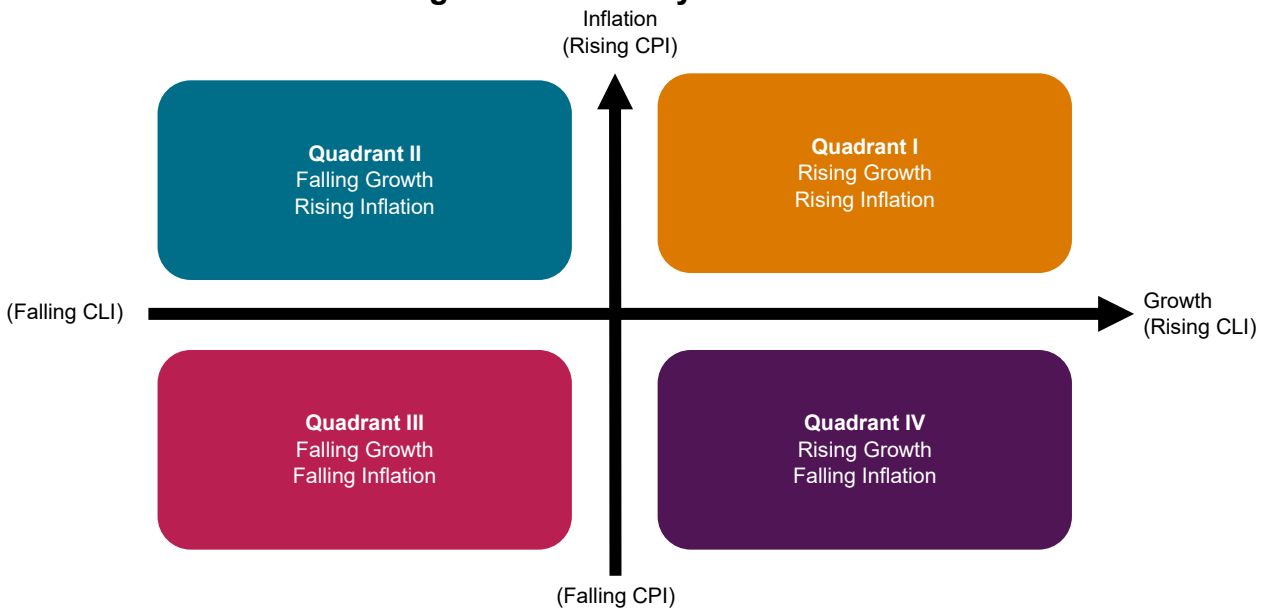
For use with institutions only, not for use with retail investors.

Performance across Macroeconomic Regimes

One consideration in selecting a strategy is understanding how it is expected to perform across different economic regimes. To analyze this, we evaluated the performance of these indices across four regimes[2] characterized by rising and falling growth and inflation, as illustrated in Exhibit 15. The four quadrants below represent each of the four regimes.

- **Quadrant I**: Rising growth and rising inflation
- **Quadrant II**: Falling growth and rising inflation
- **Quadrant III**: Falling growth and falling inflation
- **Quadrant IV**: Rising growth and falling inflation[3]

Exhibit 15: Macroeconomic Regimes Defined by Growth and Inflation



Source: S&P Dow Jones Indices LLC, OECD, U.S. Bureau of Labor Statistics and Federal Reserve Bank of St. Louis. Chart is provided for illustrative purposes.

[2] For more information on these regimes, please see Hao, Wenli Bill and Watts, Rupert, "A Historical Perspective on Factor Index Performance across Macroeconomic Cycles," S&P Dow Jones Indices LLC. Nov. 14, 2024.

[3] "Rising Growth" is defined as a positive monthly change in the U.S. Composite Leading Indicator (CLI) compared to the previous month, while "Falling Growth" is defined as negative monthly change. "Rising Inflation" is defined as when the three-month U.S. Consumer Price Index (CPI) average exceeds that of the three-year moving average, while "Falling Inflation" is defined as the three-month CPI average falling below the three-year moving average.

For use with institutions only, not for use with retail investors.

Historic Economic Regimes

Due to the longer back-testing history available for the S&P 500 Quality FCF Aristocrats Index compared to the S&P Developed Quality FCF Aristocrats Index, we present two distinct time horizons in our analysis (see Exhibit 16). For the S&P 500 Quality FCF Aristocrats Index, we use 284 calendar months, from June 30, 2001, to Dec. 31, 2024, while for the S&P Developed Quality FCF Aristocrats Index, we use 224 calendar months, from May 31, 2006, to Dec. 31, 2024.

Exhibit 16: Distribution of Historic Economic Regimes

Economic Regimes	May 2001-December 2024		May 2006-December 2024	
	Frequency	Relative Frequency (%)	Frequency	Relative Frequency (%)
Rising Growth and Falling Inflation	104	37	85	38
Rising Growth and Rising Inflation	48	17	38	17
Falling Growth and Falling Inflation	59	21	47	21
Falling Growth and Rising Inflation	73	26	54	24
Total	**284**	**100**	**224**	**100**

Source: S&P Dow Jones Indices LLC, OECD, U.S. Bureau of Labor Statistics and Federal Reserve Bank of St. Louis. Data from May 31, 2001, to Dec. 31, 2024. Table is provided for illustrative purposes.

Performance in Four Economic Regimes

Exhibit 17 presents the historical risk/return characteristics of the S&P Quality FCF Aristocrats Indices and their corresponding benchmarks across the four economic regimes.

For use with institutions only, not for use with retail investors.

Exhibit 17: Performance in Different Economic Regimes

Category	S&P 500 Quality FCF Aristocrats Index	S&P 500	S&P Developed Quality FCF Aristocrats Index	S&P Developed LargeMidCap
Entire Period				
Annualized Return (%)	10.73	8.79	12.46	7.98
Annualized Volatility (%)	14.49	15.08	14.78	15.95
Risk adjusted Return	0.74	0.58	0.84	0.50
Rising Growth and Falling Inflation Regime				
Annualized Return (%)	25.97	26.16	28.26	27.46
Annualized Volatility (%)	12.95	13.20	12.93	14.12
Risk-Adjusted Return	2.01	1.98	2.19	1.94
Rising Growth and Rising Inflation Regime				
Annualized Return (%)	13.19	16.28	13.02	12.21
Annualized Volatility (%)	10.74	10.90	12.40	12.70
Risk-Adjusted Return	1.23	1.49	1.05	0.96
Falling Growth and Rising Inflation Regime				
Annualized Return (%)	5.73	1.34	11.11	4.93
Annualized Volatility (%)	16.36	16.91	14.30	15.48
Risk-Adjusted Return	0.35	0.08	0.78	0.32
Falling Growth and Falling Inflation Regime				
Annualized Return (%)	-5.58	-10.60	-7.74	-16.89
Annualized Volatility (%)	15.78	16.45	17.70	18.42
Risk-Adjusted Return	-0.35	-0.64	-0.44	-0.92

Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on total return in USD. The S&P 500 Quality FCF Aristocrats Index and S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. 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.

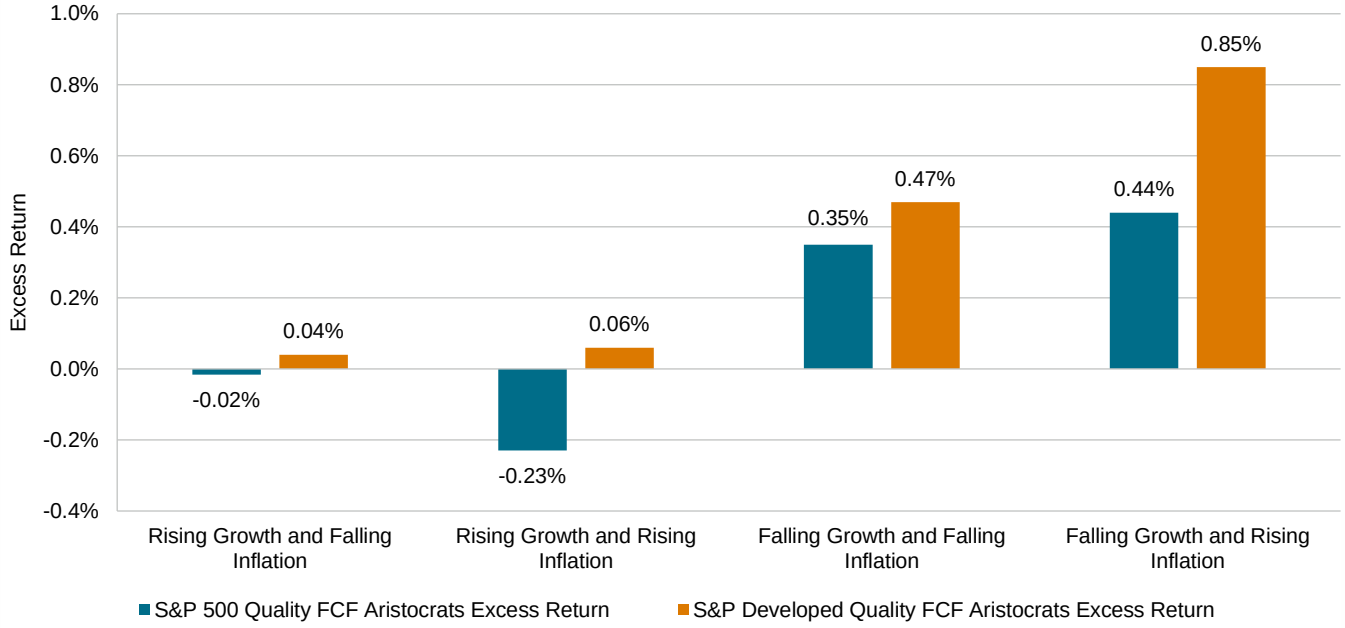
The S&P 500 Quality FCF Aristocrats Index consistently outperformed the S&P 500 in a Falling Growth environment, regardless of inflation trends. Its performance was comparable to the S&P 500 during the Rising Growth and Falling Inflation regime. However, it underperformed in the Rising Growth and Rising Inflation regime. This behavior indicates that the S&P Quality FCF Aristocrats Index exhibited defensive characteristics while still participating in market upside. Exhibit 18 shows the excess returns of the indices in each economic regime.

Similarly, the S&P Developed Quality FCF Aristocrats Index consistently outperformed the S&P Developed LargeMidCap index in a Falling Growth environment, irrespective of inflation trends. In a Rising Growth regime, its performance was in line with the benchmark. This behavior

For use with institutions only, not for use with retail investors.

indicates that the S&P Developed Quality FCF Aristocrats Index also possessed defensive characteristics while fully participating in market upside.

Exhibit 18: Excess Returns[4] for the S&P Quality FCF Aristocrats Indices versus Their Benchmarks



Source: S&P Dow Jones Indices LLC. U.S. data from May 31, 2001, to Dec. 31, 2024. Developed markets data from May 31, 2006, to Dec. 31, 2024. Index performance based on total return in USD. The S&P 500 Quality FCF Aristocrats Index and S&P Developed Quality FCF Aristocrats Index were launched Sept. 23, 2024. All data prior to such date is back-tested hypothetical data. 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.

Conclusion

While there are various metrics that can be used to evaluate a company, FCF has been historically effective for identifying high quality companies. The S&P Quality FCF Aristocrats Indices apply the principles of consistency and efficiency to FCF by requiring companies to demonstrate 10 consecutive years of positive FCF, along with a high FCF margin and FCF ROIC. Over the long term back-tested period, this approach showed strong absolute and risk-adjusted returns, as well as defensive traits, such as lower downside capture and outperformance during periods of falling growth. Furthermore, it has produced characteristics consistent with quality, including robust fundamentals, while maintaining low turnover.

[4] Excess return measures how much the average monthly total return of each S&P Quality FCF Aristocrats Index exceeds that of their corresponding benchmark in each regime.

For use with institutions only, not for use with retail investors.

Performance Disclosure/Back-Tested Data

The S&P 500 Quality FCF Aristocrats Index and S&P Developed Quality FCF Aristocrats Index were launched September 23, 2024. The S&P 500 was launched on March 4, 1957. The S&P Developed LargeMidCap index was launched on December 31, 1992. 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.spglobal.com/spdji. Past performance of the Index is not an indication of future results. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results. Please refer to the methodology for the Index 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. Back-tested performance is for use with institutions only; not for use with retail investors.

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 to a fixed value for calculation purposes. The Launch Date designates the date when 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 data feed 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.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices 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).

General Disclaimer

© 2025 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, SPX, SPY, The 500, US500 , US 30, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, DIVIDEND MONARCHS, BUYBACK ARISTOCRATS, SELECT SECTOR, S&P MAESTRO, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR, INDEXOLOGY, iTraxx, iBoxx, ABX, ADBI, CDX, CMBX, LCDX, MBX, MCDX, PRIMEX, TABX, HHPI, IRXX, I-SYND, SOVX, CRITS, CRITR are registered trademarks of S&P Global, Inc. (“S&P Global”) or its affiliates. DOW JONES, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are trademarks of Dow Jones Trademark Holdings LLC (“Dow Jones”). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, S&P Global, Dow Jones or their respective affiliates (collectively “S&P Dow Jones Indices”) do not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. Index performance does not reflect trading costs, management fees or expenses. S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. S&P Dow Jones Indices is not an investment adviser, commodity trading advisor, commodity pool operator, broker dealer, fiduciary, promoter” (as defined in the Investment Company Act of 1940, as amended), “expert” as enumerated within 15 U.S.C. § 77k(a) or tax advisor. Inclusion of a security, commodity, crypto currency or other asset within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, commodity, crypto currency or other asset, nor is it considered to be investment advice or commodity trading advice.

Closing prices for S&P Dow Jones Indices’ US benchmark indices are calculated by S&P Dow Jones Indices based on the closing price of the individual constituents of the index as set by their primary exchange. Closing prices are received by S&P Dow Jones Indices from one of its third party vendors and verified by comparing them with prices from an alternative vendor. The vendors receive the closing price from the primary exchanges. Real-time intraday prices are calculated similarly without a second verification

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof (“Content”) may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively “S&P Dow Jones Indices Parties”) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN “AS IS” BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT’S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Global keeps certain activities of its various divisions and business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.

The Global Industry Classification Standard (GICS®) was developed by and is the exclusive property and a trademark of S&P and MSCI. Neither MSCI, S&P nor any other party involved in making or compiling any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, any of their affiliates or any third party involved in making or compiling any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.