

S&P 500[®] Dividend Aristocrats[®]: The Importance of Stable Dividend Income

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Executive Summary

- Dividends play an important role in generating equity total return. Since 1926, dividends have contributed approximately 31% of total return for the [S&P 500](#), while capital appreciations have contributed 69%. Therefore, sustainable dividend income and capital appreciation potential are important factors for total return expectations.
- Companies use stable and increasing dividends as a signal of confidence in their firm's prospects, while market participants consider such track records as a sign of corporate maturity and balance sheet strength.
- The [S&P 500 Dividend Aristocrats](#) measures the performance of S&P 500 constituents that have followed a policy of increasing dividends every year for at least 25 consecutive years.
- The S&P 500 Dividend Aristocrats exhibits both capital growth and dividend income characteristics, as opposed to alternative income strategies that may be pure yield or pure capital-appreciation oriented.
- Over the long term, the S&P 500 Dividend Aristocrats exhibited higher returns with lower volatility compared with the S&P 500, resulting in higher risk-adjusted returns.

- As of 2025, S&P 500 Dividend Aristocrats constituents included 69 securities, diversified across 10 sectors (see Exhibit 13 in the Appendix).
 - The constituents have both growth and value characteristics.
- The composition of the S&P 500 Dividend Aristocrats contrasts with that of traditional dividend-oriented benchmarks that have a steep value bias and have high exposure to the Financials and Utilities sectors. At each rebalancing, a 30% sector cap is imposed to ensure sector diversification.
- The S&P 500 Dividend Aristocrats follows an equal weight methodology.
 - This treats each company as a distinct entity, regardless of market capitalization.
 - This also eliminates single-stock concentration risk.

Introduction

Dividends have interested market participants and theorists since the origins of modern financial theory. As such, many researchers have investigated the various topics related to dividends and dividend-paying firms. Previous studies by S&P Dow Jones Indices have shown that over a long-term investment horizon, dividend-paying constituents of the S&P 500 have outperformed the non-payers of dividends and the overall broad market on a risk-adjusted basis.¹

In recent years, the increasing amount of academic and practitioner research demonstrates that dividend yield is a compensated risk factor and has historically earned excess returns over a market-cap-weighted benchmark. When combined with other factors such as volatility, quality, momentum, value and size, dividend yield strategies can potentially offer exposure to systematic sources of return.

In this paper, we show that dividend yield is an important component of total return. We also highlight pertinent characteristics of the S&P 500 Dividend Aristocrats, an index that measures the performance of the S&P 500 constituents that have increased their dividend payouts for 25 consecutive years. We show that the S&P 500 Dividend Aristocrats has historically possessed desirable risk/return characteristics, offering higher risk-adjusted returns and downside protection than the broad-based benchmark. In addition, our analysis shows that the S&P 500 Dividend Aristocrats is sector diversified and displays growth and value characteristics.

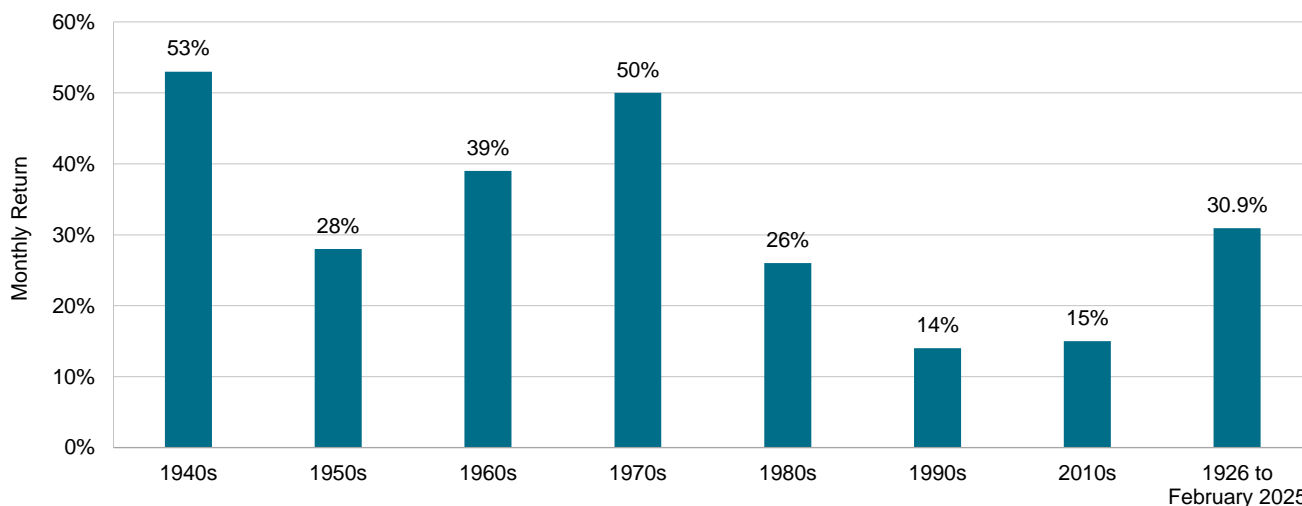
¹ Soe, Aye, "[Dividend Investing and a Look Inside the S&P Dow Jones Dividend Indices](#)," September 2013, S&P Dow Jones Indices.

Importance of Dividends

Dividends Contributed 31% of Long-Term Total Return from Equity

Historically, dividends have contributed approximately 31% of total return for the S&P 500. Exhibit 1 shows the contribution of dividends to the average monthly total return of the S&P 500 throughout several decades. From 1926 to February 2025, dividend income constituted 31% of the monthly total return of the S&P 500, with the remaining portion coming from capital appreciation.² In some decades, such as the 1940s and 1970s, dividend income accounted for more than one-half of total return, whereas during the 1990s, dividends accounted for as little as 14%. Exhibit 1 excludes dividend income during the 2000s, during which it comprised about 68% of total return.

Exhibit 1: Dividend Income as a Percent of Monthly Total Return of the S&P 500



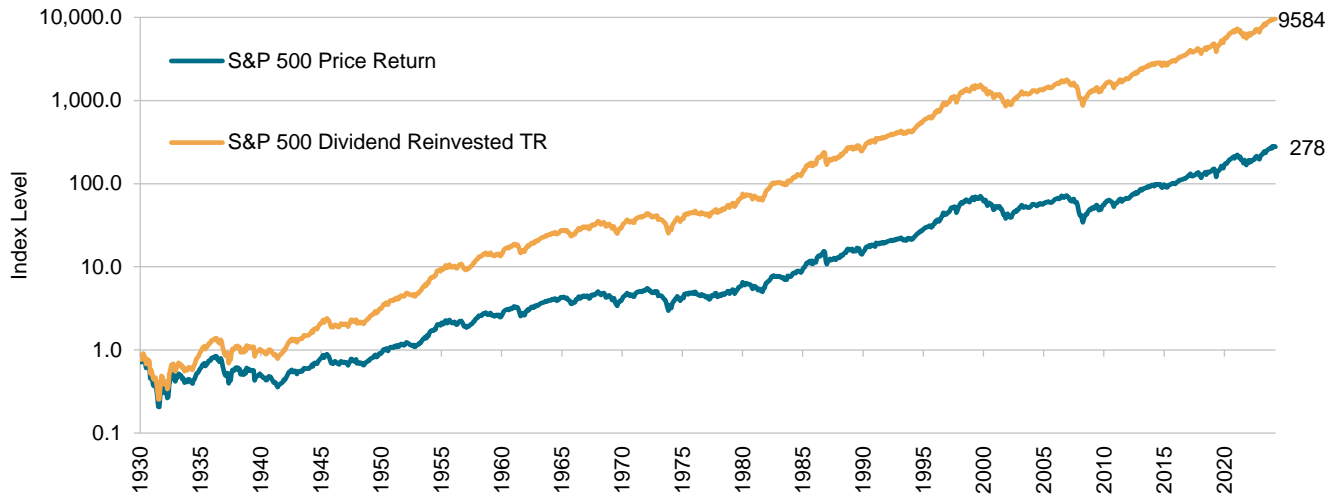
Source: S&P Dow Jones Indices LLC. Data from December 1926 to February 2025. The S&P 500 was launched March 4, 1957. All data prior to index launch date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical 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.

Compounding Effect of Dividend Income

Another important aspect of dividends can be observed through the effect of compounding, as illustrated in Exhibits 2 and 3. Excluding dividends, the return of the S&P 500 on Jan. 1, 1930, would have grown to 278 by the end of February 2025. During the same period, the return of the S&P 500 with dividends reinvested would have been 9,584.

² The S&P 500 did not actually have 500 stocks prior to 1957, and it was known as the S&P Composite Index. However, for simplicity's sake, we use the term "S&P 500" throughout this paper.

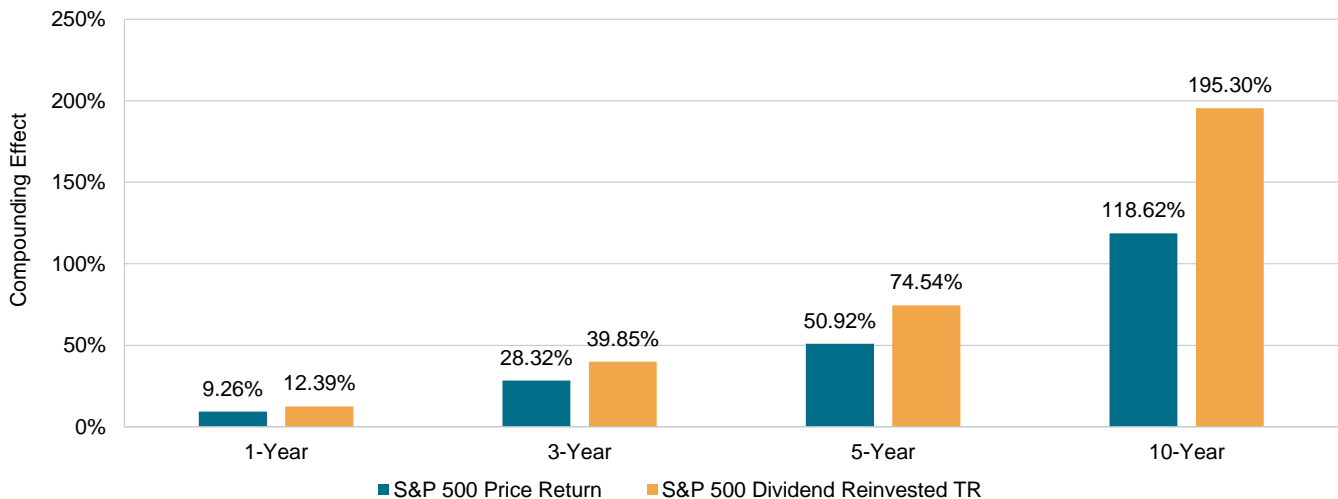
Exhibit 2: S&P 500 Cumulative Growth



Source: S&P Dow Jones Indices LLC. Data from January 1930 to February 2025. Index performance based on price return and total return in USD. The S&P 500 was launched March 4, 1957. All data prior to index launch 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.

Exhibit 3 plots this compounding effect for the S&P 500 over several time horizons. The plotted figures are averages for every continuous horizon, based on monthly data for the over 50-year period ending Feb. 28, 2025. It can be observed that the compounding effect increased as the time horizon lengthened, exhibiting a positive relationship between the two. For example, the annualized difference between the price return and the total return of the S&P 500 over every 10-year horizon, on average, amounted to 77%.

Exhibit 3: Compounding Effect



Source: S&P Dow Jones Indices LLC. Data from May 1971 to February 2025. Index performance based on price return and total return in USD. The S&P 500 was launched March 4, 1957. All data prior to index launch 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.

The S&P 500 Dividend Aristocrats

Dividend growth has been intricately linked to equity valuation since John Burr Williams' Dividend Discount Model of the late 1930s. As noted, managers use stable and increasing dividends as a signal of their confidence in a firm's prospects. S&P Dow Jones Indices has been identifying stocks with a long history of consistent dividend increases (which it terms "dividend aristocrats") since the early 1970s. The S&P 500 Dividend Aristocrats is designed to measure stocks with a long track record of dividend growth. To be eligible, securities must meet the following criteria.

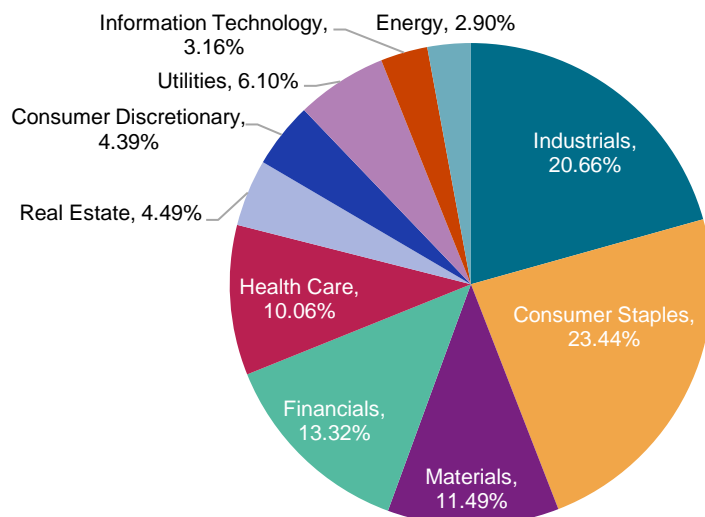
- Be members of the S&P 500.
- Have increased dividends for at least 25 consecutive years.

Constituents are equal weighted and re-weighted on a quarterly basis.

Sector Diversification

As of 2025, the S&P 500 Dividend Aristocrats constituents consisted of 69 securities, diversified across 10 sectors. Unlike many dividend-yield strategies, which tend to be concentrated in the Financials and Utilities sectors to achieve high yield, the S&P 500 Dividend Aristocrats is well diversified, without any sector weighing more than 30% at the time of rebalance.³ Exhibit 4 illustrates the sector diversification of the S&P 500 Dividend Aristocrats as of Feb. 28, 2025.

Exhibit 4: Sector Diversification of the S&P 500 Dividend Aristocrats

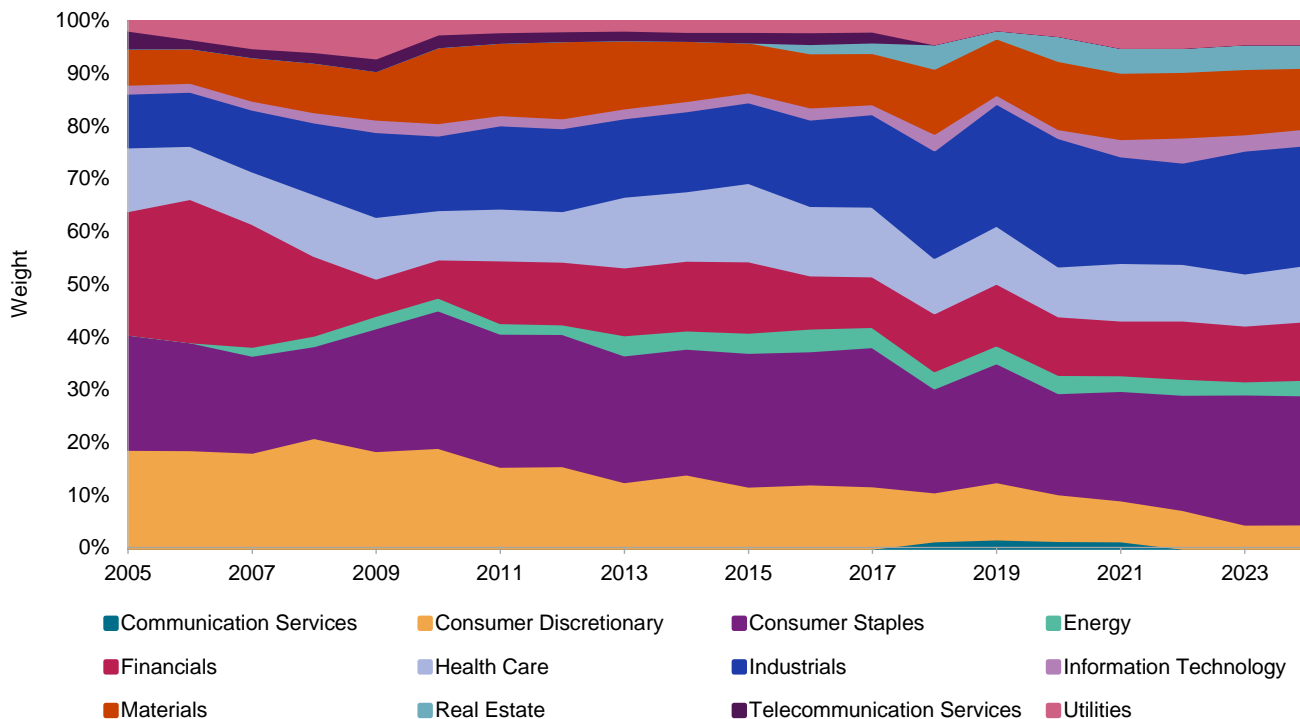


Source: S&P Dow Jones Indices LLC. Data as of Feb. 28, 2025. Chart is provided for illustrative purposes.

³ For further information about the rebalancing of the S&P Dividend Aristocrats, please see the [S&P 500 Dividend Aristocrats Methodology](#).

As companies across sectors can exhibit a long track record of consistent dividend growth, the S&P 500 Dividend Aristocrats has drawn its constituents from a broad range of sectors throughout its history. Exhibit 5 charts the sector composition of the S&P 500 Dividend Aristocrats from December 2005 to December 2024.

Exhibit 5: Sector Composition of the S&P 500 Dividend Aristocrats



Source: S&P Dow Jones Indices LLC. Data from December 2005 to December 2024. Chart is provided for illustrative purposes.

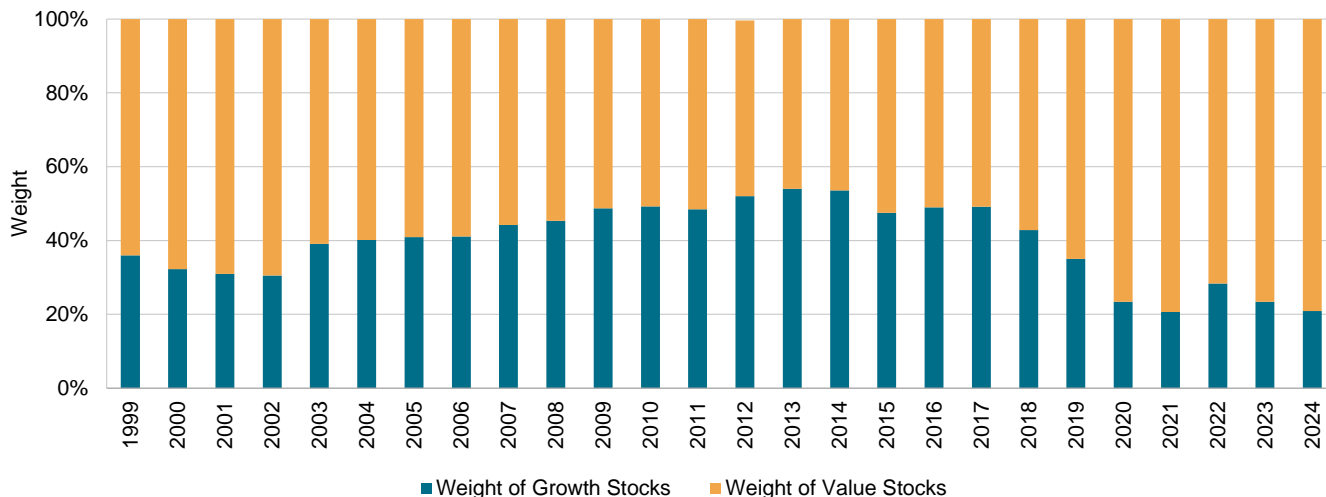
The S&P 500 Dividend Aristocrats Has Shown Growth and Value Characteristics

Traditionally, income-seeking strategies tend to have heavy value characteristics, as market participants tend to seek securities with high dividend yield and lower price multiples. The S&P 500 Dividend Aristocrats, on the other hand, has exhibited both growth⁴ and value⁵ characteristics without any persistent heavy tilt toward a single style. Exhibit 6 illustrates the style breakdown of the index composition since 1999. On average, the index has 60.49% exposure to value and 39.50% exposure to growth.

⁴ The growth score is computed using the following three factors: 1) The three-year change in earnings per share over price per share; 2) The three-year sales per share growth rate; 3) Momentum (12-month percent of price change). The growth score for each company is computed as the average of the standardized values of the three growth factors.

⁵ The value score is computed using the following three factors: 1) Price/book ratio; 2) Price/earnings ratio; 3) Price/sales ratio. The value score for each company is computed as the average of the standardized values of the three value factors.

Exhibit 6: The Growth and Value Characteristics of the S&P 500 Dividend Aristocrats from 1999 to 2024

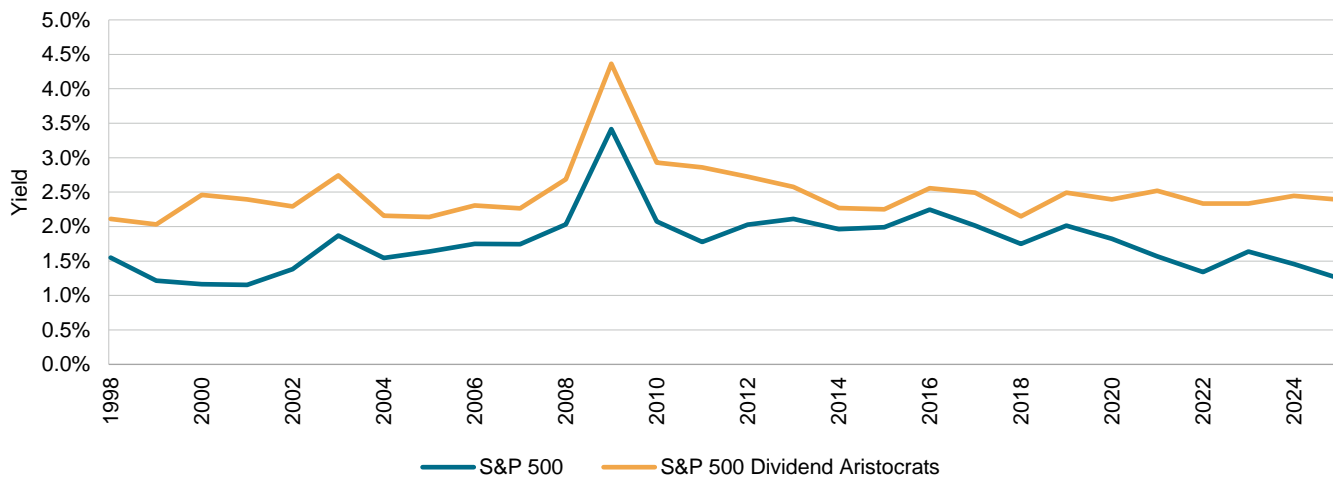


Source: S&P Dow Jones Indices LLC. Growth and value characteristics based on the style weights for the S&P Global BMI Americas from year-end 1999 to December 2024. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch date is back-tested hypothetical data. Past 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.

Current and Historical Yield

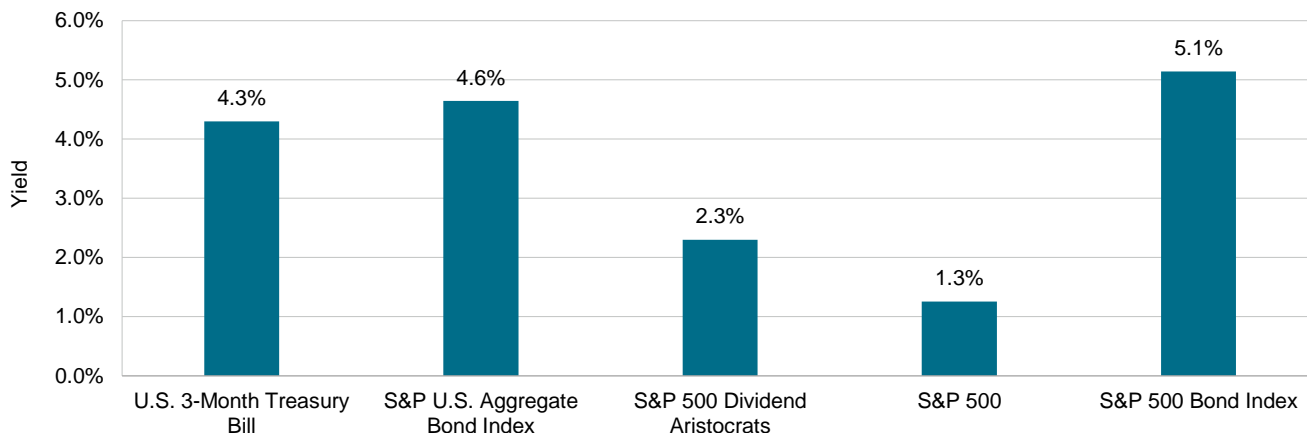
The ability to increase dividends for 25 consecutive years does not come at the expense of lower yield. The S&P 500 Dividend Aristocrats has consistently delivered higher yields than its benchmark, the S&P 500, with yields usually in the range of 2.0%-2.9% over the 28-year period, as shown in Exhibit 7. The average yield of the index was 2.5%, while that of the S&P 500 was 1.8%.

Exhibit 7: Historical Yield of the S&P 500 Dividend Aristocrats versus the S&P 500



Source: S&P Dow Jones Indices LLC, FactSet. Data from January 1998 to January 2025. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch 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.

Exhibit 8: Current Yields



Source: S&P Dow Jones Indices LLC, FactSet. Data as of Feb. 28, 2025. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Risk/Return Profile of the S&P 500 Dividend Aristocrats

Over the long term, the S&P 500 Dividend Aristocrats has outperformed the S&P 500 with lower volatility, as shown by higher risk-adjusted returns. Exhibit 9 compares the performance characteristics of the S&P 500 Dividend Aristocrats against those of the S&P 500. Exhibit 10 plots the historical annual performance of the S&P 500 Dividend Aristocrats against the S&P 500.

The ability of the S&P 500 Dividend Aristocrats to provide downside protection can be seen in the upside and downside capture ratios. The S&P 500 Dividend Aristocrats has outperformed the S&P 500 66.67% of the time in down months⁶ and 43.88% of the time in up months⁷. It should also be noted that the S&P 500 Dividend Aristocrats had a lower drawdown level compared with the benchmark index.

Exhibit 9a: Average Outperformance over the S&P 500

Period	Outperformance (%)
All Months	51.66
Up Months	43.88
Down Months	66.67

Source: S&P Dow Jones Indices LLC. Data from Dec. 29, 1989, to Feb. 28, 2025. Index performance based on total return in USD. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch 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.

⁶ Down months are defined as months when the return of the S&P 500 was negative.

⁷ Up months are defined as months when the return of the S&P 500 was positive.

Further, the S&P 500 Dividend Aristocrats provided an average excess return of 0.87% in down months over the broad-based benchmark. We have observed that the S&P 500 Dividend Aristocrats had a market beta of 0.8 in the analysis period from Dec. 29, 1989, to Feb. 28, 2025.

Exhibit 9b: Average Excess Return over the S&P 500

Period	Excess Return (%)
All Months	0.11
Up Months	-0.39
Down Months	0.87

Source: S&P Dow Jones Indices LLC. Data from Dec. 29, 1989, to Feb. 28, 2025. Index performance based on total return in USD. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch 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.

Exhibit 9c: Risk/Return Characteristics

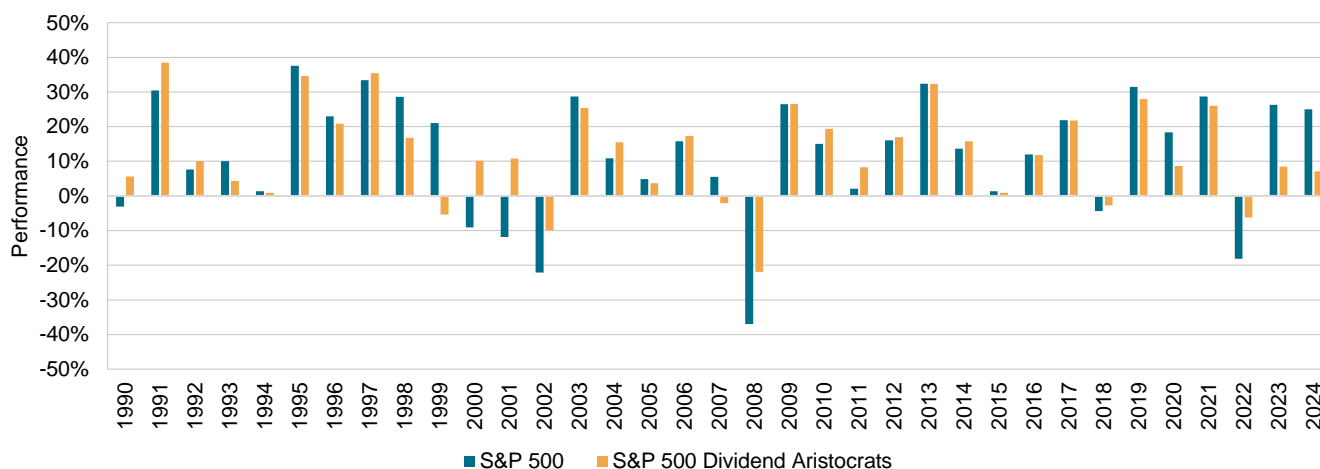
Period	S&P 500 Dividend Aristocrats	S&P 500
Annual Return (%)		
1-Year	9.5	18.4
3-Year	6.8	12.6
5-Year	11.9	16.9
10-Year	10.1	13.0
15-Year	12.8	14.0
20-Year	10.4	10.5
Since Inception	11.6	10.6
Annual Volatility (%)		
3-Year	16.8	16.9
5-Year	17.7	17.7
10-Year	15.0	15.3
15-Year	13.9	14.5
20-Year	14.3	15.0
Since Inception	14.0	14.8
Risk-Adjusted Return		
3-Year	0.4	0.7
5-Year	0.7	1.0
10-Year	0.7	0.9
15-Year	0.9	1.0
20-Year	0.7	0.7
Since Inception	0.8	0.7

Source: S&P Dow Jones Indices LLC. Data from Dec. 29, 1989, to Feb. 28, 2025. Index performance based on total return in USD. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch 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.

Exhibit 9d: Risk/Return Characteristics

Metric	S&P 500 Dividend Aristocrats	S&P 500
Maximum Drawdown (%)	-44.1	-50.9
Best Monthly Return (%)	14.4	12.8
Worst Monthly Return (%)	-13.7	-16.8
Average Monthly Return (%)	1.0	0.9
Minimum Rolling 12-Month Return (%)	-34.9	-43.3
Maximum Rolling 12-Month Return (%)	62.6	56.4
Beta With Benchmark	0.8	1.0
Correlation With Benchmark	0.9	1.0
Risk-Adjusted Return	0.8	0.7

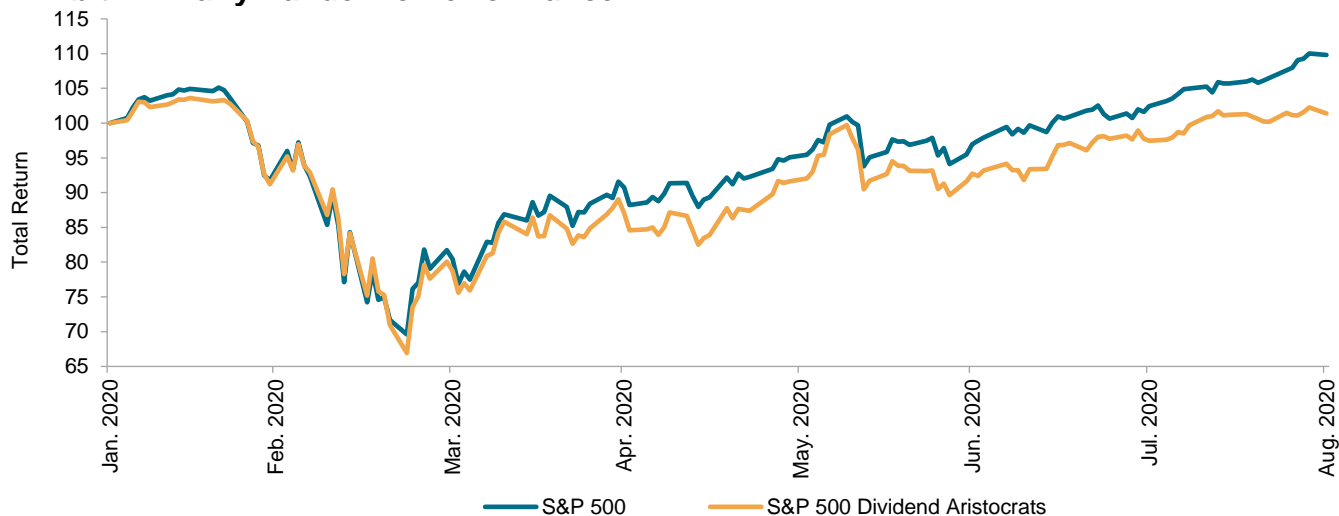
Source: S&P Dow Jones Indices LLC. Data from Dec. 29, 1989, to Feb. 28, 2025. Index performance based on total return in USD. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch date is back-tested hypothetical data. Past performance is no guarantee of future 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.

Exhibit 10: Historical Annual Performance

Source: S&P Dow Jones Indices LLC. Data from Dec. 29, 1989, to Dec. 31, 2024. Past performance is no guarantee of future results. Index performance based on total return in USD. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch date is back-tested hypothetical data. 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.

Performance during COVID-19-Induced Market Plunge

The S&P 500 dropped 33.8% from its peak on Feb. 19, 2020, to reach a low point on March 23, 2020, due to the COVID-19 pandemic. The S&P 500 Dividend Aristocrats dropped 35.2% during the same period. The S&P 500 gained 52.2% from March 23, 2020, to Aug. 12, 2020, surpassing the previous high reached on Feb. 19, 2020, while the S&P 500 Dividend Aristocrats also gained 52.0% during the same period.

Exhibit 11: Early Pandemic Performance

Source: S&P Dow Jones Indices LLC. Data from Jan. 31, 2020, to Aug. 31, 2020. Past performance is no guarantee of future results. Index performance based on total return in USD. Chart is provided for illustrative purposes.

Decomposition of Excess Returns

Performance attribution attempts to explain the sources of a strategy's performance relative to its benchmark over a specified period of time. An attribution analysis typically breaks down the sources of a strategy's returns into three components: the allocation effect, the selection effect and the interaction effect.⁸

In order to understand the return drivers behind the excess returns of the S&P 500 Dividend Aristocrats relative to its benchmark, we performed a holdings-based attribution analysis using the 25-year period from January 2000 to February 2025.⁹

Our analysis shows that the S&P 500 Dividend Aristocrats outperformed its benchmark, the S&P 500, by an average of 1.59% per year. The majority of the outperformance stemmed from the security selection plus the interaction effect, at 1.87%, and the remaining -0.27% comes from the allocation effect. The results confirm that the fundamental characteristics of the constituents have been the major driver behind the outperformance.

⁸ The allocation effect is the portion of a strategy's excess return attributable to the over- or underweighting of securities in a particular grouping (country, sector, beta, etc.) relative to the benchmark. The selection effect is the portion of a strategy's excess return attributable to selecting different securities within each group from the benchmark. The interaction effect is the portion of a strategy's excess return attributable to combining the allocation effect with the selection effect.

⁹ We used the Portfolio Analysis tool from FactSet for the attribution analysis. The holdings data in FactSet matched with that of the S&P Dow Jones Indices since 2000.

Exhibit 12: Attribution Analysis

Year	Allocation (%)	Selection + Interaction (%)	Total (%)
2000	14.57	4.68	19.25
2001	9.53	13.18	22.71
2002	2.25	9.97	12.22
2003	-3.49	0.32	-3.17
2004	0.02	4.57	4.58
2005	-1.74	0.55	-1.19
2006	0.67	0.94	1.61
2007	-4.99	-3.07	-8.06
2008	-0.95	16.63	15.67
2009	2.21	-2.22	-0.02
2010	2.60	1.64	4.24
2011	0.99	5.22	6.21
2012	1.15	-0.21	0.94
2013	0.65	-0.84	-0.19
2014	-0.22	2.52	2.30
2015	0.12	-0.55	-0.43
2016	-1.32	1.18	-0.14
2017	-1.99	1.89	-0.10
2018	-3.04	5.05	1.65
2019	-3.54	0.03	-3.51
2020	-6.76	-2.96	-9.72
2021	-2.75	0.03	-2.72
2022	9.92	1.99	11.91
2023	-14.94	-2.90	-17.84
2024	-9.77	-8.17	-17.94
2025	3.91	-0.76	3.15
Average	-0.27	1.87	1.59

Source: S&P Dow Jones Indices LLC, FactSet. Data from Jan. 1, 2000, to Feb. 28, 2025. Index performance based on total return in USD. Past performance is no guarantee of future results. The S&P 500 Dividend Aristocrats Index was launched May 2, 2005. All data prior to index launch date is back-tested hypothetical data. 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.

Conclusion

Dividends have been an important contributor to total return, in addition to providing a cushion during down markets. The S&P 500 Dividend Aristocrats, which is designed to measure the performance of blue chip, high quality companies that have increased their dividends for 25 consecutive years, has delivered higher returns than the broad-based, large-cap equity market, and it has done so with lower volatility. The decomposition of the index's excess returns over those of the benchmark also shows that a high percentage of the outperformance comes from security selection, highlighting that the fundamental characteristics of the index are the major return drivers.

Appendix

Exhibit 13: S&P 500 Dividend Aristocrats Constituents in 2025

Number	Ticker	Company	Sector
1	AOS	A.O. Smith Corp	Industrials
2	ABT	Abbott Laboratories	Health Care
3	ABBV	AbbVie Inc.	Health Care
4	AFL	AFLAC Inc	Financials
5	APD	Air Products & Chemicals Inc	Materials
6	ALB	Albemarle Corp	Materials
7	AMCR	Amcor plc	Materials
8	ADM	Archer-Daniels-Midland Co	Consumer Staples
9	ATO	Atmos Energy Corp	Utilities
10	ADP	Automatic Data Processing	Industrials
11	BDX	Becton Dickinson & Co	Health Care
12	BRO	Brown & Brown Inc	Financials
13	BF.B	Brown-Forman Corp B	Consumer Staples
14	CAH	Cardinal Health Inc	Health Care
15	CAT	Caterpillar Inc	Industrials
16	CHRW	CH Robinson Worldwide Inc	Industrials
17	CVX	Chevron Corp	Energy
18	CB	Chubb Limited	Financials
19	CHD	Church & Dwight Co	Consumer Staples
20	CINF	Cincinnati Financial Corp	Financials
21	CTAS	Cintas Corp	Industrials
22	CLX	Clorox Co	Consumer Staples
23	KO	Coca-Cola Co	Consumer Staples
24	CL	Colgate-Palmolive Co	Consumer Staples
25	ED	Consolidated Edison Inc	Utilities
26	DOV	Dover Corp	Industrials
27	ECL	Ecolab Inc	Materials
28	EMR	Emerson Electric Co	Industrials
29	ERIE	Erie Indemnity Co A	Financials
30	ESS	Essex Property Trust	Real Estate
31	ES	Eversource Energy	Utilities
32	EXPD	Expeditors Intl of WA Inc	Industrials
33	XOM	Exxon Mobil Corp	Energy
34	FDS	FactSet Research System Inc	Financials

Source: S&P Dow Jones Indices LLC. Data as of Feb. 28, 2025. Table is provided for illustrative purposes.

Exhibit 13: S&P 500 Dividend Aristocrats Constituents in 2025 (cont.)

Number	Ticker	Company	Sector
35	FAST	Fastenal Co	Industrials
36	FRT	Federal Realty Invt Trust	Real Estate
37	BEN	Franklin Resources Inc	Financials
38	GD	General Dynamics	Industrials
39	GPC	Genuine Parts Co	Consumer Discretionary
40	HRL	Hormel Foods Corp	Consumer Staples
41	ITW	Illinois Tool Works Inc	Industrials
42	IBM	Intl Business Machines Corp	Information Technology
43	SJM	J.M. Smucker Co	Consumer Staples
44	JNJ	Johnson & Johnson	Health Care
45	KVUE	Kenvue Inc.	Consumer Staples
46	KMB	Kimberly-Clark	Consumer Staples
47	LIN	Linde plc	Materials
48	LOW	Lowe's Cos Inc	Consumer Discretionary
49	MKC	McCormick & Co	Consumer Staples
50	MCD	McDonald's Corp	Consumer Discretionary
51	MDT	Medtronic plc	Health Care
52	NEE	NextEra Energy Inc	Utilities
53	NDSN	Nordson Corp	Industrials
54	NUE	Nucor Corp	Materials
55	PNR	Pentair PLC	Industrials
56	PEP	PepsiCo Inc	Consumer Staples
57	PPG	PPG Industries Inc	Materials
58	PG	Procter & Gamble	Consumer Staples
59	O	Realty Income Corp	Real Estate
60	ROP	Roper Technologies, Inc	Information Technology
61	SPGI	S&P Global Inc	Financials
62	SHW	Sherwin-Williams Co	Materials
63	SWK	Stanley Black & Decker	Industrials
64	SYY	Sysco Corp	Consumer Staples
65	TROW	T Rowe Price Group Inc	Financials
66	TGT	Target Corp	Consumer Staples
67	GWW	W.W. Grainger Inc	Industrials
68	WMT	Walmart Inc.	Consumer Staples
69	WST	West Pharmaceutical Services Inc	Health Care

Source: S&P Dow Jones Indices LLC. Data as of Feb. 28, 2025. Table is provided for illustrative purposes.

Performance Disclosure/Back-Tested Data

The S&P 500 was launched March 4, 1957. S&P 500 Dividend Aristocrats Index was launched May. 2, 2005. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance, and is based on the index methodology 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. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. Complete index methodology details are available at www.spglobal.com/spdji. 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.

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