

# **Do Stocks with Dividends Outperform the Market during Recessions?**

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*This study compared the returns of stocks with dividends with the returns of the market. It compared the S&P 500 Dividend Aristocrat Index with the S&P 500 Index. Results showed that over the recovery and recessionary phases of the last two business cycles, the S&P 500 Dividend Aristocrat Index outperformed the S&P 500 Index by 6.45 percent per annum. This implies that stocks with dividends outperformed the market in recessions.*

## **INTRODUCTION**

After the major recession of 2008, investors are more concerned about their investment strategies. How should one's investment portfolio change in the new world order of increased uncertainty? A current common recommendation is for investors to purchase dividend-paying stocks, knowing that regular dividend returns will reduce the risk of the portfolio – even portfolios with tax consequences. The combined effect of economic, political, and financial environment uncertainty is driving investors to find alternative investment strategies that may provide a decent return without out excessive risk.

This paper compares the returns of dividend-paying stocks with the return of the market. It tries to answer the question, “Have stocks with dividends outperformed the market during the last two recessions? To answer this research question, the returns of the S&P Dividend Aristocrat Index, representing stocks with dividends, and the returns of the S&P 500 Index, representing the overall market, will be compared. Comparisons will be analyzed for the recovery and recessionary periods of 2001 and 2008.

## **LITERATURE REVIEW**

The idea that changes in dividends have information content is an old one. Lintner's (1956) famous investigation of dividend policy stressed that firms only increased dividends when management believed earnings had permanently increased and that dividend increases are sustainable over the long term.

Modigliani and Miller (1958) demonstrated, under the illogical assumptions of perfect capital markets, rational behavior, and zero taxes, that the value of the firm does not depend on the firm's dividend payout rate. Durand (1959) questioned whether Modigliani and Miller's conclusion was consistent with the then-existing empirical evidence which consisted of strong positive studies involving correlations of price with dividends and current earnings data collected at a defined time. Post Modigliani

Miller, the information hypothesis has been frequently cited in both financial management articles and texts as a possible explanation of observed relationships between dividends and stock prices.

Miller and Modigliani (1961) explicitly suggested that dividends conveyed information about future cash flows when markets were incomplete. The effect of a firm's dividend policy on its current share price is a matter of considerable importance to corporate governing boards responsible for setting the firm's dividend policy, and to investors planning portfolios and economists seeking to understand and appraise the functioning of capital markets. The authors questioned if companies with generous distribution policies consistently sold at a premium over those with lesser dividend payouts. Miller and Modigliani queried if there was an optimal payout ratio or range of ratios that maximized the current share price. Their paper attempted to fill the existing gap in the theoretical literature on valuation.

The authors began their research by examining the effects of differences in firms' dividend policies on the current price of shares in a theoretical economy characterized by perfect capital markets, rational behavior, and perfect certainty. Where imperfections were found that bias individual preferences—such as the existence of brokerage fees which tended to make young 'accumulators' prefer low-payout shares and retired persons lean toward 'income stocks—such imperfections were not sufficient conditions for chosen dividend policies to command a permanent premium in the market. Of the detailed market imperfections, the one that seemed to be capable of producing such a concentration was the substantial advantage accorded to capital gains compared with dividends under the personal income tax.

It should be remembered that the motivation for capital gains for high-income individuals, however, represents a growing and substantial fraction of the total outstanding shares currently held by investors for whom there was no tax differential; the clientele effect was at work. Modigliani and Miller concluded that since the capital gains tax differential was undoubtedly the major systematic imperfection in the market, one clearly would not invoke 'imperfections' to account for the difference between the irrelevance proposition and the standard view as to the role of dividend policy found in the literature of finance.

With respect to dividend theory, there are two central competing hypotheses: the tax-effect hypothesis and the dividend-neutrality hypothesis. The tax-effect hypothesis proposed by Brennan (1970) postulates that investors receive higher before-tax, risk-adjusted returns on stocks with higher anticipated dividend yields to compensate for the historically high taxation of dividend income relative to capital gains income. Contrasting Brennan's tax-effect hypothesis, the dividend-neutrality hypothesis proposed by Black and Scholes (1974) suggests that if investors required higher returns for holding high-yield stocks, corporations would adjust their dividend policy to restrict the quantity of dividends paid, lower their cost of capital, and increase their share price. Similarly, if investors required a lower return on high-yield stocks, value-maximizing firms would increase their dividend payouts to increase their share price. In a market in equilibrium, value-maximizing behavior would lead to an aggregate supply of dividends that meets the aggregate demand for dividend income from investors valuing dividends as highly as capital gains. As a result, there would be no predictable relation between anticipated dividend yields and risk-adjusted stock returns.

Watts (1973) found that on average the relationship between future earnings changes and current unexpected dividend changes is positive, and thus consistent with the information hypothesis. The statistical tests conducted by Watts suggested that the average size of future earnings changes conveyed by unexpected dividend changes was very small.

Asquith and Mullins, Jr. (1983) investigated the impact of dividends on stockholders' wealth by analyzing 168 firms that either paid its first corporate dividend or initiated dividends after a ten-year hiatus. The empirical results of the authors' investigation exhibited larger positive excess returns than any previous dividend study. Compared with initiating a dividend policy, the results suggest that subsequent dividend increases may produce a larger positive impact on shareholder wealth. The authors' study results also suggest that other studies underestimated the effect of dividend increases. Asquith and Mullins' findings for both the initial and subsequent dividends were consistent with the view that dividends conveyed unique, valuable information to investors.

Miller and Rock (1985), found that the dividend decision revealed information about a firm's current earnings compared to the market. John and Williams' (1985) extended Miller and Rock's findings, concluding that dividend changes were explicit, intentional signals about future earnings conveyed to the investment community and the firm's shareholders at a discrete management opportunity cost.

Healy and Palepu (1988) examined a sample of a 131 firms that paid dividends for the first time or that paid a dividend after a 10-year hiatus compared with a sample of 172 firms that omitted dividends for the first time or after continuously paying dividends for at least 10 years. The authors found significant earnings increases/decreases for at least one year before dividend initiation/omission announcements. Healy and Palepu observed that firms in their sample had earnings increases for the year of, and two years following, a dividend initiation resulting in permanent dividends. Firms that omitted dividends had earnings declines for only one year prior to the dividend date; subsequently, firms that omitted dividends saw their earnings recover.

The abnormal stock price reactions to the dividend initiations or omissions were correlated with the firm's earnings changes in the year of and the year after the dividend announcements. Dividend initiations and omissions seemed to provide incremental information on the firm's future earnings performance. The market reaction to earnings changes was less than usual in the year following dividend initiation announcements, and for five years following announcements of dividend omissions. This was consistent with the hypothesis that dividend initiation or omission announcements anticipated subsequent earnings changes.

Venkatesh (1989) found a decrease in overall return volatility and diminished market reactions to subsequent earnings announcements once firms began paying cash dividends. He attributed this decrease in risk to investors focusing more on the information content of the firm's dividend policy and less on other firm-specific news events such as earnings announcements. The decrease in return volatility and the market's diminished reaction to earnings announcements were also consistent with firms having fewer earnings surprises following the initiation of dividends.

Chang and Rhee's (1990) study found wide research method variations in their observations of corporate financial leverage and dividend policy. They extended Miller's equilibrium model to obtain a theoretical prediction of a positive relation between financial leverage and dividend policy measures. The author's analysis integrated two separate notions: the tax-induced dividend clientele effect and financial leverage clientele effect. Under the financial leverage clientele effect, an inverse relationship also existed between shareholder tax rates and financial leverage. The empirical results of Chang and Rhee's study supported the hypothesized relationship between leverage and dividend ratios.

Impson and Karafiath (1992) uncovered additional evidence on the stock market's reaction to dividend announcements. Based on the results obtained, dividend increases were not associated with significant share price reaction, whether the payout ratio increased or decreased. Similarly, the study's results provided no evidence that, for dividend decreases, payout ratio increases had a greater impact the share value than payout ratio decreases. A consistent investor interpretation to the negative information related to dividend increases dominated any signaling or tax effect of the payout ratio change. Based on the possible transmission mechanisms dividend announcements can have on stock prices (tax and managerial signaling effects), the authors formulated two hypotheses about the stock market's reaction to dividend announcements.

Impson and Karafiath expected security abnormal returns to be positively correlated with dividend changes and negatively correlated with payout ratio changes. Secondly, when dividends decrease, the authors expected more negative abnormal returns for payout ratio increases than for payout ratio decreases. Given the strong negative investor reaction to dividend decreases, a consistent interpretation was that the negative information released in the dividend announcement dominated any signaling or tax effect of the payout ratio change. Payout ratio changes appeared to be only an artifact of an earnings stream that was more variable than the dividend stream, rather than revealing significant shifts in managerial policy.

Benartzi, Michaely, and Thaler's (1997) study offered limited support for the information content about future returns of dividend changes. They found that firms that increased dividends in year zero had

experienced significant earnings increases in years -1 and 0, but showed no subsequent unexpected earnings. As well, the size of the dividend increase did not predict future earnings.

Naranjo, Nimalendran, and Ryngaert's (1998) study, using an improved measure of a common stock's annualized dividend yield, observed that risk-adjusted NYSE stock returns increased in dividend yield during the period 1963-1994. They wanted to know if stocks with higher anticipated dividend yields earned higher risk adjusted returns. The authors documented a consistent positive relationship between returns and current yields that was too large to be explained entirely by taxes. A significant contribution of the paper was to explore possible explanations for the yield effect. The authors found that the size of the yield effect appeared to be unrelated to the level of implied tax rate, and hence to the potential tax liability from receiving dividend income.

Fama and French (2001) found that the proportion of U.S. firms paying dividends dropped sharply during the 1980s and 1990s. The decline after 1978 in the percent of firms paying dividends raised three questions: 1) what were the characteristics of dividend payers? 2) was the decline in the percentage of payers due to a decline in the prevalence of these characteristics among publicly-traded firms, or 3) had firms with the characteristics typical of dividend payers become less likely to pay? Their research suggested that three characteristics tended to affect the likelihood that a firm would pay dividends: profitability; growth; and size. Larger, more profitable firms were more likely to pay dividends, and high-growth firms were less likely to do so. The decline after 1978 in the percentage of firms paying dividends was due in part to an increasing number of small, publicly traded firms with low reported earnings and high growth.

Fama and French noted that from a post-1972 peak of 66.5 percent in 1978, the proportion of dividend payers among NYSE, AMEX, and NASDAQ firms fell to 20.8 percent in 1999. The change in the characteristics of publicly traded firms only partially explained the declining incidence of dividend payers. The more interesting result was that, whatever their characteristics, firms had simply become less likely to pay dividends. The evidence that firms had become less likely to pay dividends, even after controlling for characteristics, suggested that the perceived benefits of dividends had declined through time. The rationale and logic may be due to lower transaction costs for selling stocks, more sophisticated corporate governance techniques (reducing the reliance on dividends as a means of corporate discipline), and larger holdings of stock options by managers who preferred capital gains to dividends.

Grullon and Michaely (2002) showed that share repurchases not only become an important form of payout for U.S. corporations, but that firms financed their share repurchases with funds that otherwise could have been used to increase dividends. The paper provided evidence that corporations had been substituting share repurchases for dividends, suggesting that many firms returning capital to shareholders did so through share repurchases to augment their dividend policies.

DeAngelo, DeAngelo, and Skinner's study (2003) offered evidence that industrial firms' dividends were highly concentrated, and that dividend concentration had increased over the past two decades. The authors observed that aggregate dividends paid by industrial firms increased over the past two decades even though the number of dividend payers had decreased by more than half. The logic for this finding was that the reduction in payers occurred predominantly among firms that paid very small dividends. The findings on dividend concentration cast doubt on the empirical importance of the dividend clientele and signaling hypotheses. Clientele theories attributed heterogeneity in dividend policies to the demand of different investors who, for tax or behavioral reasons, preferred either to hold or to avoid dividend-paying stocks.

The evidence offered by DeAngelo, DeAngelo, and Skinner's study revealed that publicly traded industrial firms exhibited a two-tier structure based on dollar earnings. The first tier contained a few dividend-paying high earners; these firms' dividends collectively dominated the aggregate supply. The second tier contained many firms which, individually and jointly, had modest earnings and which collectively contributed little to the aggregate dividend supply. In sum, the differing behavior of first-and second-tier firms explained why aggregate dividends increased as the number of payers declined over the past two decades. The authors' evidence added to a growing body of empirical research that documents major changes in corporate payout practices over the last 25-50 years.

Contrary to Miller and Modigliani (1961), DeAngelo and DeAngelo (2006), found that payout policy was not irrelevant and investment policy was not the sole determinant of value in frictionless markets, a theoretical environment where all costs and constraints associated with transactions are non-existent. Miller and Modigliani's assumptions forced one hundred percent free cash flow payout, thereby restricting the feasible set of payout policies to those that were optimal and eliminating the value-relevance payout/retention decision from consideration. Payout policy inherently affected stockholder wealth, and not only when it affected project choice or because of market imperfections such as personal taxes.

### **S&P 500 Dividend Aristocrat Index**

According to S&P 500, since 1926, dividends have contributed one third of total return, while capital appreciation contributed two thirds. Sustainable dividend income and capital appreciation have both been important to total return expectations. Managers used stable and increasing dividends as a sign of confidence in the firm's prospects, while investors considered such track records a sign of corporate maturity and strength. The S&P 500 Dividend Aristocrat Index measures the performance of the S&P 500 Index constituents that have followed a policy of consistently increasing dividends every year for at least 25 consecutive years. The S&P 500 Dividend Aristocrat Index for 2009 included 52 securities diversified across ten sectors. The S&P 500 Dividend Aristocrat Index constituents possess both growth and value characteristics. Dividend income, reinvested in additional shares, compounds through time, creating a geometric growth phenomenon, a critically important aspect of dividends.

Aristocrats have growth and income characteristics, and are selected not only based on their consistent dividend payout level, but also on long-term dividend and earnings growth rates, as well as on profitability measures. The S&P Dividend Aristocrats Index has consistently delivered yields in the range of 1.98 percent to 4 percent over the last 10 years. The risk-return profile of the S&P 500 Dividend Aristocrats shows that the S&P 500 Dividend Aristocrats have outperformed the S&P 500.

In terms of diversification, the Aristocrats span ten different sectors with both growth and value holdings. This composition contrasts with most other dividend-yield based portfolios, which tend to be heavily weighted toward financials and utilities, and often have a strong value bias. As of March 2011, there were 42 corporations in the S&P Dividend Aristocrat Index with a market capitalization of 1.8 trillion dollars. The top 10 holdings account for 26 percent of total market capitalization and include: Stanley Black & Decker, Archer-Daniels-Midland, Exxon Mobile, Dover, Clorox, Walgreens, Hormel Foods, PPG Industrials, Automatic Data Processing, and McGraw Hill Companies, Inc. ([www2.standardandpoors.com/spf/pdf/index/SP500](http://www2.standardandpoors.com/spf/pdf/index/SP500)).

An investor building a stock portfolio to provide passive income depends on these high-performing dividend stocks to continue paying monthly or quarterly payments. Not only can an investor depend on the checks to keep coming, the investor can also expect them to increase each year. The growing dividend feature makes the Dividend Aristocrat stocks a good way to protect investments from inflation. In addition to the dividend payments, the price of these stocks remains stable compared to other options. Over time, dividends can pay for the investor's initial investment, while the investor retains the original stock available for sale if the need arises ([www.dividendstocksonline.com/2010/07/what-are-dividend](http://www.dividendstocksonline.com/2010/07/what-are-dividend)).

### **RESEARCH HYPOTHESIS**

The recovery and recessionary periods of the past two business cycles were identified by the National Bureau of Economic Research ([www.nber.org/cycles.html](http://www.nber.org/cycles.html)). This paper considered the following six hypotheses:

1. Recovery Period (1990 – 2001)

*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the recovery period from January 1990 to March 2001.*

2. Recessionary Period (2001)  
*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the recessionary period from April 2001 to November 2001.*
3. Recovery Period (2001 – 2007)  
*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the recovery period from December 2001 to December 2007.*
4. Recessionary Period (2008 – 2009)  
*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the recessionary period from April 2001 to November 2001.*
5. Recovery Period (2009 – 2010)  
*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the recovery period from July 2009 to December 2010.*
6. Business Cycle One (January 1990 – November 2001)  
*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the period from January 1990 to November 2001.*
7. Business Cycle Two (December 2001 to December 2010)  
*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the period from December 2001 to December 2010.*
8. Whole Period – Two business cycles (1990 – 2010)  
*H<sub>1</sub>: The average daily returns of the Aristocrat Index was significantly greater than the average daily returns of the S&P 500 Index for the period from January 1990 to December 2010.*

## METHODOLOGY

Daily close values for both the S&P Dividend Aristocrat Index and the S&P 500 Index from January 1990 to December 2010 were utilized in this study. This period included 5,287 trading days. The data set was analyzed based on the recovery and recessionary phases of the two business cycles that occurred in 2001 and 2008. Daily returns were calculated for both indices. The returns from the S&P 500 Index were subtracted from the returns from the S&P 500 Dividend Aristocrat Index. Using one-tailed t-tests, this difference was tested to see it was significantly greater than zero. The whole two business cycles were also tested to see if the returns for the S&P 500 Dividend Index outperformed the S&P 500 Index.

## RESULTS

### Descriptive Statistics

For the recovery period from January 1990 to March 2001 (2,842 trading days), the daily mean returns for the S&P Dividend Aristocrat Index and the S&P 500 Index were 0.06 percent and 0.05 percent, respectively. The corresponding equivalent annual rates were 22.82 percent, 18.48 percent, respectively. The average daily mean difference was 0.01 percent (3.66 percent annualized), implying that, on average, the Aristocrat Index got a higher daily return than the S&P 500 Index for this recovery period. The correlation of the two indices for this period was positive and significant ( $\rho = 0.86$ ).

For the recessionary period from April 2001 to November 2001 (166 trading days), the daily mean returns for the Aristocrat Index and the S&P 500 Index were 0.07 percent and -0.002 percent, respectively. The corresponding equivalent annual rates were 28.86 percent and -0.78 percent, respectively. The average daily mean difference was 0.07 percent (29.88 percent annualized), implying that, on average, the Aristocrat Index got a higher daily return than the S&P 500 Index for this recessionary period. The correlation of the two indices for this period was positive and highly significant ( $\rho = 0.88$ ).

For the recovery period from December 2001 to December 2007 (1,530 trading days), the daily mean returns for the Aristocrat Index and the S&P 500 Index were 0.03 percent and 0.02 percent, respectively. The corresponding equivalent annual rates were 13.21 percent and 8.24 percent, respectively. The average daily mean difference was 0.001 percent (4.59 percent annualized), implying that, on average, the Aristocrat Index got a higher daily return than the S&P 500 Index for this recovery period. The correlation of the two indices for this period was positive and significant ( $\rho = 0.95$ ).

For the recessionary period from January 2008 to June 2009 (377 trading days), the daily mean returns for the Aristocrat Index and the S&P 500 Index were -0.03 percent and -0.09 percent, respectively. The corresponding equivalent annual rates were -12.18 percent and -29.03 percent, respectively. The average daily mean difference was 0.06 percent (23.71 annualized), implying that, on average, the Aristocrat Index got a smaller daily loss than the S&P 500 Index for this recessionary period. The correlation of the two indices for this period was positive and significant ( $\rho = 0.96$ ).

For the recovery period from July 2009 to December 2010 (372 trading days), the daily mean returns for the Aristocrat Index and the S&P 500 Index were 0.12 percent and 0.09 percent, respectively. The corresponding equivalent annual rates were 52.18 percent and 38.01 percent, respectively. The average daily mean difference was 0.03 percent (10.27 percent annualized), implying that, on average, the Aristocrat Index got a higher daily return than the S&P 500 Index for this recovery period. The correlation of the two indices for this period was positive and significant ( $\rho = 0.97$ ).

For the first business cycle from January 1990 to November 2001 (3,008 trading days), the daily mean returns for the Aristocrat Index and the S&P 500 Index were 0.06 percent and 0.04 percent, respectively. The corresponding equivalent annual rates were 23.14 percent and 17.33 percent, respectively. The average daily mean difference was 0.02 percent (4.95 percent annualized), implying that, on average, the Aristocrat Index got a higher daily return than the S&P 500 Index for this whole period. The correlation of the two indices for this period was positive and significant ( $\rho = 0.86$ ).

For the second business cycle from December 2001 to December 2010 (2,297 trading days), the daily mean returns for the Aristocrat Index and the S&P 500 Index were 0.04 percent and 0.02 percent, respectively. The corresponding equivalent annual rates were 23.04 percent and 17.33 percent, respectively. The average daily mean difference was 0.02 percent (4.95 percent annualized), implying that, on average, the Aristocrat Index got a higher daily return than the S&P 500 Index for this whole period. The correlation of the two indices for this period was positive and significant ( $\rho = 0.92$ ).

For the whole period (two business cycles) from July 2009 to December 2010 (5,287 trading days), the daily mean returns for the Aristocrat Index and the S&P 500 Index were 0.05 percent and 0.03 percent, respectively. The corresponding equivalent annual rates were 19.08 percent and 11.86 percent, respectively. The average daily mean difference was 0.02 percent (6.45 percent annualized), implying that, on average, the Aristocrat Index got a higher daily return than the S&P 500 Index for this whole period. The correlation of the two indices for this period was positive and significant ( $\rho = 0.92$ ).

## Results for Hypotheses

Hypothesis 1 was to test if the S&P 500 Dividend Index outperformed the S&P 500 Index during the recovery period from January 1990 to March 2001. For this period, the mean daily difference was 0.00984 percent. The t-statistic was 1.052 with a p-value of 0.0733, implying that the two returns were marginally significantly different from each other for this period. Hence, stocks with dividends outperformed the stock index for this recovery period.

Hypothesis 2 looked that the recessionary period from April 2001 to November 2001. For this period, the mean daily difference was 0.00984 percent. The t-statistic was 1.380 with a p-value of 0.0845 implying that the two returns were marginally significantly different from each other for this period. Again, the index for stocks with dividends did out-perform the stock market index for this recessionary period.

Hypothesis 3 looked at the recovery period from December 2001 to December 2007. The mean daily difference was 0.00984 percent. The t-statistic was 1.444 with a p-value of 0.0745, implying that the two

returns were marginally significantly different from each other for this period. Hence, stocks with dividends did out-perform the stock index for this recovery period.

Hypothesis 4 looked at the recessionary period from January 2008 to June 2009. The mean daily difference was 0.00984 percent. The t-statistic was 2.088 with a p-value of 0.0195 implying that the two returns were highly significantly different from each other for this period. Hence, stocks with dividends did out-perform the stock index for this recessionary period.

Hypothesis 5 looked at the recovery period from July 2009 to December 2010. The mean daily difference was 0.0268 percent. The t-statistic was 1.784 with a p-value of 0.0375, implying that the two returns were significantly different from each other for this period. Hence, stocks with dividends did out-perform the stock index for this recovery period.

Hypothesis 6 looked at the first business cycle from January 1990 to November 2001. The mean daily difference was 0.01 percent. The t-statistic was 1.427 with a p-value of 0.0769 implying that the two returns were marginally significantly different from each other for this period. Hence, stocks with dividends did out-perform the stock index for this period.

Hypothesis 7 looked at the second business cycle from December 2001 to December 2010. The mean daily difference was 0.01 percent. The t-statistic was 2.873 with a p-value of 0.0021 implying that the two returns were highly significantly different from each other for this period. Hence, stocks with dividends did out-perform the stock index for this period.

Hypothesis 8 looked at the whole period from January 1990 to December 2010. The mean daily difference was 0.0172 percent. The t-statistic was 2.742 with a p-value of 0.003 implying that the two returns were highly significantly different from each other for this period. Hence, stocks with dividends did out-perform the stock index for this period.

In summary, the S&P Dividend Aristocrat outperformed the S&P 500 Index (i.e. market) in the recovery and recessionary phases of the past business cycle and for the whole period of study.

## **CONCLUSION**

This study evaluated if the S&P Dividend Aristocrat Index outperformed the S&P 500 Index for the recovery and recessionary periods for the recessions of 2001 and 2008. For the recovery period for the recession of 2001, the S&P Dividend Aristocrat Index outperformed the S&P 500 Index by 0.01 percent daily or an annualized rate of 3.6 percent. For the recessionary period of recession 2001, the S&P Dividend Aristocrat Index outperformed the S&P 500 Index by 0.07 percent daily or an annualized rate of 29.88 percent. For the recovery period for the recession of 2008, the S&P Dividend Aristocrat Index outperformed the S&P 500 Index by 0.01 percent daily or an annualized rate of 4.59 percent. For the recessionary period for the recession of 2008, the S&P Dividend Aristocrat Index outperformed the S&P 500 Index by 0.06 percent daily or an annualized rate of 23.71 percent. For the recovery period of the future business cycle, the S&P Dividend Aristocrat Index outperformed the S&P 500 Index by 0.03 percent daily or an annualized rate of 10.27 percent. For the whole period including the two recessions, the S&P Dividend Aristocrat Index outperformed the S&P 500 Index by 0.02 percent daily or an annualized rate of 6.45 percent.

In summary, this study found that for both recovery and recessionary periods of the recessions of 2001 and 2008, the S&P Dividend Aristocrat Index significantly outperformed the S&P 500 Index. This implied that stocks with dividends generally out-performed the overall stock market.

This evidence is supporting the present trend by financial advisors recommending the purchase of stocks with dividends or the purchase of the S&P Dividend Aristocrat Index instead of the S&P 500 Index. This conclusion is supporting the 'bird-in-the-hand' investment strategy utilized by many investors.

The findings from this study imply that investors should include the S&P Dividend Aristocrat Index in their investment portfolios. Or at a stock level, the investors should include stocks that pay dividends in their portfolios. The S&P Dividend Aristocrat Index outperformed (smaller loss) the S&P 500 Index

during the recessionary period of the 2008 recession -the worst recession after the Great Depression. This implies that it should be able to perform well over the next business cycle.

The S&P Dividend Aristocrat Index can further be analyzed to see if it outperforms the S&P 500 Index based on day-of-the-week, month-of-the-year, and the first month-of-the-year, etc. The S&P Dividend Aristocrat Index can also be compared to the DJIA and other stock indices in the U.S. and other countries.

**TABLE 1**  
**DESCRIPTIVE STATISTICS OF THE RETURNS FOR THE S&P DIVIDEND ARISTOCRAT INDEX AND THE S&P INDEX**

Period	Index/Difference	Daily					Annualized	
		N	Minimum	Maximum	Mean	Std. Deviation	Return	Standard Deviation
Recovery (January 1990 - March 2001)								
	Aristocrat	2842	-6.45%	6.70%	0.06%	0.88%	22.82%	16.80%
	S&P 500	2842	-6.87%	5.12%	0.05%	0.96%	18.48%	18.40%
	Difference	2842	-3.98%	3.81%	0.01%	0.50%	3.66%	9.52%
Recessionary (April 2001 - November 2001)								
	Aristocrat	166	-3.24%	3.59%	0.07%	0.98%	28.86%	18.69%
	S&P 500	166	-4.92%	4.37%	0.00%	1.33%	-0.78%	25.41%
	Difference	166	-2.56%	1.68%	0.07%	0.67%	29.88%	12.78%
Recovery (December 2001 - December 2007)								
	Aristocrat	1530	-3.99%	5.55%	0.03%	0.88%	13.207%	16.795%
	S&P 500	1530	-4.15%	5.73%	0.02%	1.01%	8.241%	19.354%
	Difference	1530	-2.55%	2.51%	0.01%	0.33%	4.588%	6.364%
Recessionary (January 2008 - June 2009)								
	Aristocrat	377	-8.93%	10.11%	-0.04%	2.40%	-12.18%	45.78%
	S&P 500	377	-9.04%	11.58%	-0.09%	2.46%	-29.03%	47.03%
	Difference	377	-2.61%	2.00%	0.06%	0.54%	23.71%	10.36%
Recovery (July 2009 - December 2010)								
	Aristocrat	372	-3.62%	3.75%	0.12%	1.01%	52.18%	19.30%
	S&P 500	372	-3.90%	4.40%	0.09%	1.12%	38.01%	21.48%
	Difference	372	-0.82%	0.99%	0.03%	0.29%	10.27%	5.53%
First Business Cycle (January 1990 – November 2001)								
	Aristocrat	3008	-6.4%	6.7%	0.06%	0.99%	23.14%	18.85%
	S&P 500	3008	-6.87%	5.12%	0.04%	0.89%	17.33%	16.91%
	Difference	3008	-3.98%	3.81%	0.01%	0.51%	4.95%	9.73%
Second Business Cycle (December 2001 – December 2010)								
	Aristocrat	2279	-8.93%	10.11%	0.06%	1.38%	23.14%	26.32%
	S&P 500	2279	-9.03%	11.58%	0.04%	1.28%	17.33%	24.43%
	Difference	2279	-3.98%	3.81%	0.01%	0.37%	4.95%	7.07%
Whole Period (January 1990 - December 2010)								
	Aristocrat	5287	-8.93%	10.11%	0.05%	1.07%	19.08%	20.49%
	S&P 500	5287	-9.03%	11.58%	0.03%	1.17%	11.86%	22.38%
	Difference	5287	-3.98%	3.81%	0.02%	0.45%	6.45%	8.68%

**TABLE 2**  
**RESULTS FROM HYPOTHESIS TESTING WITH ONE-TAILED T-TESTS**  
**GREATER THAN ZERO**

	<b>t statistic</b>	<b>Sig. (1-tailed)</b>
Recovery (January 1990 - March 2001)		
Aristocrat	3.414	0.001***
S&P 500	2.573	0.005***
Difference	1.052	0.074*
Recessionary (April 2001 - November 2001)		
Aristocrat	0.916	0.181
S&P 500	-0.021	0.492
Difference	1.380	0.085*
Recovery (December 2001 - December 2007)		
Aristocrat	1.512	0.066*
S&P 500	0.838	0.201
Difference	1.444	0.075*
Recessionary (January 2008 - June 2009)		
Aristocrat	-0.288	0.387
S&P 500	-0.741	0.230
Difference	2.088	0.019**
Recovery (July 2009 - December 2010)		
Aristocrat	2.197	0.015**
S&P 500	1.515	0.066*
Difference	1.784	0.038**
Business Cycle One (January 1990 – November 2001)		
Aristocrat	3.535	0.0002***
S&P 500	2.435	0.0075**
Difference	1.427	0.0769*
Business Cycle Two (December 2001 – December 2010)		
Aristocrat	1.334	0.0912*
S&P 500	0.466	0.3206
Difference	2.873	0.0021**
Whole Period (January 1990 - December 2010)		
Aristocrat	3.245	0.001***
S&P 500	1.907	0.029**
Difference	2.742	0.003***

\*, \*\*, \*\*\* represents confidence levels of 90 %, 95%, and 99%, respectively.

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