An Investment Strategy for Financial Independence

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This paper investigates achieving financial independence by using the Dividend Reinvestment Plan (DRIP) in conjunction with dollar cost averaging to purchase stocks of quality companies that pay increasing dividends over the 15 year period of 1993 – 2007. To do this, it looks at two portfolios, each containing initially the same stocks, but the second replacing some of its stocks during the last five years of this 15 year period with stocks exhibiting a higher percent dividend increase.

INTRODUCTION

As the economy begins to recover from perhaps the greatest crisis since the Great Depression of the 1930's, many people are not participating in the recovery. Many professions that were previously immune from downturns in the economy have not proven to be so today. Teachers and fire/police personnel who were thought to have lifelong careers have been laid-off en masse.

What has become of the American Dream? A significant part of that dream was financial security earned through hard work and obtaining undergraduate and graduate degrees. It was long thought that, if you worked hard and studied hard, the system would take care of you. The dream for many has become a nightmare as unemployment among the professional classes has risen substantially, beginning with the recession of 2008 and continuing into 2012.

The purpose of this paper is to prove how one can become financially independent by incorporating the authors' current research with the research of previous papers (Rubin & Spaht, 2010; Rubin & Spaht, 2011) which dealt with dividend growth, reinvestment of dividends, and dollar cost averaging of periodic additional investments. The current paper takes the previous papers one step further by comparing two portfolios over the 15 year period of 1993 – 2007. The first portfolio consisted of 10 stocks chosen which had a "buy" or "strong buy" recommendation by the *S&P 500 Dividend Aristocrats Index.* The second initially consisted of the same stocks as the first portfolio, but for each of the final five years of the 15 year period, stocks not increasing their dividend by at least five percent from the previous year were replaced with stocks which had (1) a "strong buy" or "buy" recommendation from the *S&P 500 Dividend Aristocrats Index,* (2) a minimum five percent dividend increase from the previous year, and (3) a dividend income during the previous year at least as great as the stocks being replaced. (The time period 1993-2007 was selected because it contains almost equally good years and bad years in the stock market. The bursting of the Tech bubble at the end of 2000 as well as the stock market highs in 2007 were both represented. In addition, the last five years of the 15 year period were examined differently because,

following the implosion of the equity market from 2000 to 2002, dividends began to increase significantly in 2003. The thought then emerged that one should be paid while waiting for stock appreciation. Prior to that time, little emphasis was placed on significant yearly increases in a stock's dividend. It should also be pointed out that the highest annual inflation during this final five year period was 3.39%. A dividend increase of at least five percent from the previous year more than preserved the purchasing power of the dividend.)

PERSPECTIVE

In the 19th century, the total return from stocks was derived mainly from dividends (Browning, 2011). This scenario continued well into the 20th century, and, as late as the 1970's, dividends accounted for 71% of the total return. With the advent of the 1980's and 1990's, stock prices exploded, P/E (Price/Earnings) ratios increased, and yields decreased accordingly. Even taking these two decades into account in the 80 years ending in 2010, dividends contributing 44% of the S&P 500 total return were recorded. More S&P 500 companies increased or initiated dividends during the seven year period immediately preceding August 2011 than in any other seven year period in the history of the stock market (Hough, 2011).

The investment in stocks that pay dividends can be most associated with a long-term investing strategy. By participating in a company's dividend reinvestment plan, the investment strategy of dollar cost averaging is implemented. The dividend stream continues whether the market is up or down allowing the purchase of stocks at various high or low points in the cycle. This steady dividend stream is important because, since the *S&P 500 Dividend Aristocrats Index* was initiated in 1957, the index has declined by at least three percent per day 87 times (Lazo, 2011).

The *S&P 500 Dividend Aristocrats Index* was used as the basis for stock selection because it measures the performance of those companies within the S&P 500 that are heavily capitalized and financially strong and have increased their dividends yearly for at least 25 consecutive years. Since a 25 year period of time contains the lowest of lows and the highest of highs in the stock market, and since these consecutive 25 year dividend paying companies have succeeded in both good and bad times, the stock investor should be able to receive an increasing dividend stream for many years. Moreover, since the price of a stock is ultimately a function of its earnings and dividends, the investor should also benefit from stock appreciation. As the earnings of the company continue to increase, the dividends should track the earning increases. The capital invested in the stock should increase at a faster rate than inflation thereby preserving the purchasing power of the portfolio.

There is a line of thought entitled the "four percent rule." The thesis of the rule is that, when one desires to begin withdrawing money from his/her portfolio, up to 4% of the initial inflation adjusted portfolio value could be sold each year and there would still be a lifetime of portfolio income. In theory, this concept works if there is not a lengthy bear market or flat market. If there is an adverse market, the initial portfolio could be rapidly depleted. However, with consecutive minimum 25 yearly dividend increasing companies as recommended in *S&P 500 Dividend Aristocrats Index*, dividends are not only maintained, but increased regardless of market conditions. Certainly, this circumstance protects against outliving one's income.

The Federal Reserve is in the process of driving long term interest rates lower by re-balancing its portfolio of bonds. The decline in long term interest rates will have a significant impact on fixed income investing such as bonds. Historically, bonds have been a traditional source for providing a steady stream of income during the retirement years. The future lower interest rate environment will substantially reduce income to the retiree who has invested in fixed income instruments.

Clearly, the "Best Game in Town" appears to be investing in quality dividend paying stocks. Indeed, between the years of 2000 and 2009, stocks that had a market cap greater than $5 billion and a dividend yield equal to or greater than 2.5% had an average dividend-adjusted return of 114%; during the same time period, the S&P 500 decreased by 19% (Maranijian, 2011).

The appropriate investment strategy is evidently the selection of quality stocks that have a solid current yield and the potential for significant future growth in dividend income. Moreover, after selecting

such stocks, investors should adhere to the old investment adage which says, "It's time in the market rather than timing in the market." According to Nobel laureate William Sharpe, to time the market and be as successful as a buy-and-hold investor, the investor must be right at least 82% of the time. For the period 1993-2007, had the investor been out of the market for the 40 highest appreciation days (less than 1% of the trading days of this period), the annualized rate of return would have been only 3.9%; but the investor who had remained fully invested would have reaped an annualized return of 11.82% (Dow Theory Forecasts, 2008)! Since overwhelming stock market gains occur in only a very limited time period, what better way is there to achieve nice returns than to utilize dollar cost averaging and dividend reinvestment with quality stocks?

ANALYSIS

To begin our analysis, let us assume that, in 1993, someone had invested in the manner described above in 10 stocks recommended by the *S&P 500 Dividend Aristocrats Index* with an initial investment of $5000 and then, for 15 years on a quarterly basis, (1) reinvested the dividends and (2) invested a fixed amount of $125 (total of $500 per year) in each of the 10 stocks. Let us further assume that, in 1993, someone else invested in exactly the same stocks and proceeded exactly as the first investor with the exception that, during the last five years of the 15 year period, any stock which did not increase its dividend by at least five percent from the previous year was dropped from the portfolio and replaced by random selection by another stock which had (1) a "buy" or "strong buy" recommendation from the *S&P 500 Dividend Aristocrats Index,* (2) a minimum five percent dividend increase from the previous year, and (3) a dividend income during the previous year at least as great as the stock being replaced. In each of the portfolios, what were the growths of both the stock value and dividend income? How did the results compare with what would have occurred had the dividends not been reinvested? How did the returns of the two portfolios differ?

To answer these questions, we will first derive a formula referred to as the DCA-QDRIP (Dollar Cost Averaging Quarterly Dividend Reinvestment Plan) formula and use it to determine the returns for the various stocks purchased over this 15 year period. Once the formula is established, it will be used in each of the portfolios to compare the accumulation of stock value and the dividend income at the end of the 15 year period with what would have been the accumulation of stock value and dividend income had the dividends not been reinvested. Output from these computations can be found in Tables 2 – 5 and Tables 2A – 5A.

Initially, stocks were chosen from Abbott Labs; Aflac, Inc.; Becton, D'son; Coca-Cola; Exxon Mobil; Johnson & Johnson; McDonald's Corp.; PepsiCo, Inc.; Proctor & Gamble; and Wal-Mart Stores. However, in 2003, Abbott Labs and Becton, D'son did not meet the five percent criteria. In the second portfolio, these companies were replaced respectively, according to the procedure, by Kimberly-Clark and Eli Lilly.

DCA-QDRIP FORMULA

To derive the DCA-QDRIP (Dollar Cost Averaging Quarterly Dividend Reinvestment Plan) formula, the formula used to compute accumulations in stock value, consider an arbitrary stock and let:

$P(n)$ = the price per share of stock during the n^{th} year ($P(n)$ is computed by finding the average of the high and low price per share during the n^{th} year),

$D(n)$ = the declared dividend per share of the n^{th} year,

$A(n)$ = the dollar amount invested to purchase additional shares of stock during the n^{th} year (this value is assumed to be $125 per quarter or $500 per year in this paper),

S = the number of shares initially purchased,

S_i = the number of shares owned at the end of the i^{th} quarter,

and

S_{Pi} = the number of shares purchased during the i^{th} quarter.

Two assumptions are made in the derivation of the formula. First of all, since P(n) is the average price per share of stock during the entire n^{th} year, it will remain constant and not fluctuate throughout the year. Secondly, since the dividend is normally declared annually and distributed quarterly, it also will remain constant throughout the year and not change until the first quarter of the following year. Note that since S_i is the number of shares owned at the end of the i^{th} quarter, then S_{i-1} represents the number of shares owned at the beginning of the i^{th} quarter.

Under the above assumptions, the amount of dividend (DIV(i)) generated by one share of stock and used by the investor to purchase additional shares of stock during the i^{th} quarter is:

$$\text{DIV(i)} = .25\text{D}\left(\left[\frac{\text{i-1}}{4}\right]+1\right), \tag{1}$$

where [ ] denotes the greatest integer function. Also, the price (PRICE(i)) per share of stock over this same time period is:

$$\text{PRICE(i)} = \text{P}\left(\left[\frac{\text{i-1}}{4}\right]+1\right). \tag{2}$$

Thus the quotient,

$$\frac{\text{DIV(i)}}{\text{PRICE(i)}} = \frac{.25\text{D}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}{\text{P}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}, \tag{3}$$

represents the number of shares of stock purchased by the investor from the dividends of a single share of stock during the i^{th} quarter. This continuing process is illustrated in Table 1.

Also note that the number of shares (S_i) owned at the end of the i^{th} quarter is given by:

$$\begin{aligned} S_i &= S_{i-1} + S_{Pi} \\ &= S_{i-1} + S_{i-1} \bullet \frac{\text{DIV(i)}}{\text{PRICE(i)}} + \frac{.25\text{A}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}{\text{PRICE(i)}} \\ &= S_{i-1} + S_{i-1} \bullet \frac{.25\text{D}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}{\text{P}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)} + \frac{.25\text{A}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}{\text{P}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}. \end{aligned}$$

For the purpose of this paper, since \$125 per quarter is used to purchase additional shares of stock, we have:

$$S_i = S_{i-1} + S_{i-1} \bullet \frac{.25\text{D}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}{\text{P}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)} + \frac{125}{\text{P}\left(\left[\frac{\text{i-1}}{4}\right]+1\right)}. \quad \text{(DCA-QDRIP Formula)} \tag{4}$$

Therefore, at the end of n years (or 4n quarters), the investor will have accumulated a value in stock of A dollars where:

$$\begin{aligned} \text{A} &= \text{P(n)} \bullet S_{4n} \\ &= \text{P(n)} \bullet \left[S_{4n-1} + S_{4n-1} \bullet \frac{.25\text{D}\left(\left[\frac{\text{4n-1}}{4}\right]+1\right)}{\text{P}\left(\left[\frac{\text{4n-1}}{4}\right]+1\right)} + \frac{125}{\text{P}\left(\left[\frac{\text{4n-1}}{4}\right]+1\right)} \right]. \end{aligned}$$

TABLE 1
SHARES PURCHASED FROM THE DIVIDENDS OF ONE SHARE OF STOCK

	Quarters			
Year	1	2	3	4
1	$\frac{.25D\left(\left[\frac{1-1}{4}\right]+1\right)}{P\left(\left[\frac{1-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{2-1}{4}\right]+1\right)}{P\left(\left[\frac{2-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{3-1}{4}\right]+1\right)}{P\left(\left[\frac{3-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{4-1}{4}\right]+1\right)}{P\left(\left[\frac{4-1}{4}\right]+1\right)}$
2	$\frac{.25D\left(\left[\frac{5-1}{4}\right]+1\right)}{P\left(\left[\frac{5-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{6-1}{4}\right]+1\right)}{P\left(\left[\frac{6-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{7-1}{4}\right]+1\right)}{P\left(\left[\frac{7-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{8-1}{4}\right]+1\right)}{P\left(\left[\frac{8-1}{4}\right]+1\right)}$
3	$\frac{.25D\left(\left[\frac{9-1}{4}\right]+1\right)}{P\left(\left[\frac{9-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{10-1}{4}\right]+1\right)}{P\left(\left[\frac{10-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{11-1}{4}\right]+1\right)}{P\left(\left[\frac{11-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{12-1}{4}\right]+1\right)}{P\left(\left[\frac{12-1}{4}\right]+1\right)}$
4	$\frac{.25D\left(\left[\frac{13-1}{4}\right]+1\right)}{P\left(\left[\frac{13-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{14-1}{4}\right]+1\right)}{P\left(\left[\frac{14-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{15-1}{4}\right]+1\right)}{P\left(\left[\frac{15-1}{4}\right]+1\right)}$	$\frac{.25D\left(\left[\frac{16-1}{4}\right]+1\right)}{P\left(\left[\frac{16-1}{4}\right]+1\right)}$
5	… … … …	… … … …	… … … …	… … … …

APPLICATIONS OF Q-DRIP FORMULA

Let's first consider the portfolio where none of the stocks were replaced. Referencing Table 2, if one had invested an initial $5000 in each of the 10 stocks and reinvested the dividends while also investing an additional $125 in each stock quarterly, then, at the end of 15 years, that portfolio would have grown in value from $50,000 to $553,968, resulting in a very nice 343.17% increase (annual rate of 10.43%).

Notably, some of the stocks did significantly better than average. For example, Becton, D'son had over a 576% gain in stock value at an annual rate of return of 13.59%, and Aflac had over a 714% gain at an annual rate of return of 15.01%.

Referencing Table 3, two stocks stood out for their ability to grow dividends assuming $125 was invested in each stock quarterly: Wal-Mart Stores and McDonald's Corp. Wal-Mart had over 2,168% dividend gain at an annual rate of return in dividend income growth of 24.98%. McDonald's had over 2,588% dividend gain at an annual rate of return in dividend income growth of 26.50%. This is an income growth rate that few, if any, professions could match.

It is important to note that both Wal-Mart and McDonald's are ranked 1 (highest) for relative safety and A++ (highest) for company's financial strength by "Value Line Investment Survey" (October 1, 2010). Thus, these two stocks are virtually United States Treasury substitutes for safety with a much higher capital and dividend growth rate. (Even though Aflac lost its United States Treasury substitute ranking for safety because of mortgage loan investment related losses, these shares have above-average capital gain appreciation potential and annual dividend growth rate ("Value Line Investment Survey,"

October 5, 2010). Aflac should hold to its tradition for capital appreciation and dividend growth as the economy slowly improves.)

By reinvesting the dividends (DRIP plans) as illustrated by Tables 2 – 3, Dollar-Cost Averaging, the most basic of investment strategies, is implemented. As Standard & Poor's "The Outlook" (September 3, 2008) discusses, Dollar-Cost Averaging is an investment strategy that literally guarantees purchasing the most shares of stock when their prices are low and the least shares of stock when their prices are high. It is a mathematical truth that, by following such an investment strategy, the average cost per share will be substantially below the highs in the market. The reinvested dividends purchase whole shares and fractions of shares which in turn generate their own dividends, allowing the compounding effect and geometric rise in stock value and dividend growth. Also, DRIP plans eliminate the emotions that influence investment decisions.

Now consider the portfolio where some of the stocks were replaced. As previously mentioned, because of the five percent increase in the dividend requirement, Becton, D'son was replaced by Eli Lilly, and Abbot Labs was replaced by Kimberly-Clark. Surprisingly, the replacements caused both of the ARR's (Annual Rates of Return) to decline from 13.59 to 5.99 with the Eli Lilly replacement of Becton, D'son and from 8.79 to 8.29 with the Kimberly-Clark replacement of Abbott Labs.

Accordingly, the FIV's (Final Investment Values) also declined from $84,549.10 to $29,893.80 with the Becton, D'son replacement and from $44,260.30 to $41,277.40 with the Abbot Labs replacement. (See Tables 2 and 2A.)

These two substantial declines resulted in a total portfolio value of $496,329.90 and a 297.06% gain in the portfolio where the stocks were replaced as compared with a total portfolio value of $553,968.10 and 343.17% gain in the non-replacement portfolio. The total ARR portfolio value upon replacement declined from 10.43% to 9.63%.

What happened? Why was the final value of the portfolio of the replacement stocks almost $58,000 less than the final value of the portfolio of the non-replacement stocks? Let's first consider the replacement of Becton, D'son with Eli Lilly. In 2003, when the replacement occurred, a share of Eli stock cost more than twice as much as a share of Becton, D'son. Hence, the number of shares purchased of Eli stock was less than half the number of shares that had been held before the sale of Becton, D'son stock. Moreover, during the next five years from 2003 to 2007, Eli stock decreased almost $8.00 per share while Becton, D'son stock increased almost $46.00 per share. In fact, at the end of 2007 when the final evaluation of the portfolios occurred, Becton, D'son stock was selling at $22.50 more per share than Eli stock. This coupled with the fact that there were more than twice as many shares of Becton, D'son stock in the non-replacement portfolio accounted for approximately $55,000 of the $58,000 difference in value of the portfolios. A similar situation occurred in the Kimberly-Clark replacement of Abbot Labs, but the loss was only about $3000.

The dividend income increased by replacing the stocks, but not by much. Comparing Tables 3 and 3A, the FDI (Final Dividend Income) for the combined Abbott Labs/Kimberly-Clark stocks was $1,257.06 as compared with the non-replaced Abbott Labs stock of $1,062.58. The percent gain in dividend income increased accordingly – from 676.34% with Abbot Labs to 818.43% with the Abbott Labs/Kimberly-Clark stocks. On the other hand, the FDI and percent gain in dividends decreased from $1,067.67 (863.36%) to $923.25 (732.87%) by replacing Becton, D'son with Eli Lilly. Combining these two substitutions resulted in a total portfolio dividend increase (FDI) of $49.87 ($10,606.70-$10,556.83), a total percent gain of 4.73% (904.18%-899.45%), and a total annual rate of return in dividend income growth (ARI) of .04% (17.91%-17.87%) in the replacement portfolio.

TABLE 2
STOCK VALUE GROWTH WITH DCA-QDRIP PLAN
1993-2007

Stocks Name	IIV	ICS	INS	FCS	FNS	FIV	% GAIN	ARR
Abbott Labs	5000	13.40	373.13	54.15	817.37	44,260.30	254.08	8.79
Aflac, Inc.	5000	4.65	1,075.27	54.55	1,867.36	101,865.00	714.92	15.01
Becton, D'son	5000	8.25	606.06	77.60	1,089.55	84,549.10	576.39	13.59
Coca-Cola	5000	20.65	242.13	54.95	519.73	28,559.10	128.47	5.66
Exxon Mobil	5000	15.90	314.47	82.15	784.06	64,410.80	415.29	11.55
Johnson & Johnson	5000	10.40	480.77	64.25	931.05	59,820.00	378.56	11.00
McDonald's Corp.	5000	13.00	384.62	53.00	809.67	42,912.60	243.30	8.57
PepsiCo, Inc.	5000	19.40	257.73	70.45	576.25	40,596.80	224.77	8.17
Procter & Gamble	5000	12.85	389.11	67.80	789.85	53,551.60	328.41	10.19
Wal-Mart Stores	5000	14.25	350.88	46.75	715.36	33,442.80	167.54	6.78
TOTAL	50,000					553,968.10	343.17	10.43

IIV = Initial investment value
ICS = Initial year's average cost per share ((high price – low price)/2)
INS = Initial number of shares purchased
FCS = Final year's average cost per share ((high price – low price)/2)
FNS = Final number of shares
FIV = Final investment value
% GAIN = Percentage total return (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)
ARR = Annual rate of return in accumulations of stock value (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)

TABLE 2A
STOCK VALUE GROWTH WITH DCA-QDRIP PLAN
WITH STOCK REPLACEMENT
1993-2007

Stocks Name	IIV	ICS	INS	FCS	FNS	FIV	% GAIN	ARR
Abbott Labs/ Kimberly-Clark	5000	13.40	373.13	68.30	604.35	41,277.40	230.22	8.29
Aflac, Inc.	5000	4.65	1,075.27	54.55	1,867.36	101,865.00	714.92	15.01
Becton, D'son/ Lilly (Eli) and Co.	5000	8.25	606.06	55.05	543.03	29,893.80	139.15	5.99
Coca-Cola	5000	20.65	242.13	54.95	519.73	28,559.10	128.47	5.66
Exxon Mobil	5000	15.90	314.47	82.15	784.06	64,410.80	415.29	11.55
Johnson & Johnson	5000	10.40	480.77	64.25	931.05	59,820.00	378.56	11.00
McDonald's Corp.	5000	13.00	384.62	53.00	809.67	42,912.60	243.30	8.57
PepsiCo, Inc.	5000	19.40	257.73	70.45	576.25	40,596.80	224.77	8.17
Procter & Gamble	5000	12.85	389.11	67.80	789.85	53,551.60	328.41	10.19
Wal-Mart Stores	5000	14.25	350.88	46.75	715.36	33,442.80	167.54	6.78
TOTAL	50,000					496,329.90	297.06	9.63

IIV = Initial investment value
ICS = Initial year's average cost per share ((high price – low price)/2)
INS = Initial number of shares purchased
FCS = Final year's average cost per share ((high price – low price)/2)
FNS = Final number of shares
FIV = Final investment value
% GAIN = Percentage total return (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)
ARR = Annual rate of return in accumulations of stock value (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)

TABLE 3
DIVIDEND GROWTH WITH DCA-QDRIP PLAN
1993-2007

Stocks Name	INS	IDS	IDI	FNS	FDS	FDI	% GAIN	ARI
Abbott Labs	373.13	0.34	136.87	817.37	1.30	1,062.58	676.34	15.76
Aflac, Inc.	1,075.27	0.06	69.08	1,867.36	0.80	1,493.89	2,062.45	24.55
Becton, D'son	606.06	0.17	110.84	1,089.55	0.98	1,067.76	863.36	17.56
Coca-Cola	242.13	0.34	88.34	519.73	1.36	706.83	700.11	16.01
Exxon Mobil	314.47	0.72	247.21	784.06	1.37	1,074.17	334.52	11.06
Johnson & Johnson	480.77	0.25	129.57	931.05	1.62	1,508.30	1,064.12	19.16
McDonald's Corp.	384.62	0.11	45.18	809.67	1.50	1,214.51	2,588.05	26.50
PepsiCo, Inc.	257.73	0.31	85.71	576.25	1.43	824.04	861.41	17.92
Procter & Gamble	389.11	0.28	117.29	789.85	1.28	1,011.00	761.99	16.63
Wal-Mart Stores	350.88	0.07	26.17	715.36	0.83	593.75	2,168.46	24.98
TOTAL			1,056.26			10,556.83	899.45	17.87

INS = Initial number of shares purchased
IDS = Initial declared dividend per share
IDI = Initial dividend income (beginning with end of first year)
FNS = Final number of shares
FDS = Final declared dividend per share
FDI = Final dividend income (last year)
% GAIN = Percentage return in dividend income growth (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)
ARI = Annual rate of return in dividend income growth (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)

TABLE 3A
DIVIDEND GROWTH WITH DCA-QDRIP PLAN
WITH STOCK REPLACEMENT
1993-2007

Stocks Name	INS	IDS	IDI	FNS	FDS	FDI	% GAIN	ARI
Abbott Labs/ Kimberly-Clark	373.13	0.34	136.87	604.35	2.08	1,257.06	818.43	17.16
Aflac, Inc.	1,075.27	0.06	69.08	1,867.36	0.80	1,493.89	2,062.45	24.55
Becton, D'son/ Lilly (Eli) and Co.	606.06	0.17	110.84	543.03	1.70	923.15	732.87	16.35
Coca-Cola	242.13	0.34	88.34	519.73	1.36	706.83	700.11	16.01
Exxon Mobil	314.47	0.72	247.21	784.06	1.37	1,074.17	334.52	11.06
Johnson & Johnson	480.77	0.25	129.57	931.05	1.62	1,508.30	1,064.12	19.16
McDonald's Corp.	384.62	0.11	45.18	809.67	1.50	1,214.51	2,588.05	26.50
PepsiCo, Inc.	257.73	0.31	85.71	576.25	1.43	824.04	861.41	17.92
Procter & Gamble	389.11	0.28	117.29	789.85	1.28	1,011.00	761.99	16.63
Wal-Mart Stores	350.88	0.07	26.17	715.36	0.83	593.75	2,168.46	24.98
TOTAL			1,056.26			10,606.70	904.18	17.91

INS = Initial number of shares purchased
IDS = Initial declared dividend per share
IDI = Initial dividend income (beginning with end of first year)
FNS = Final number of shares
FDS = Final declared dividend per share
FDI = Final dividend income (last year)
% GAIN = Percentage return in dividend income growth (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)
ARI = Annual rate of return in dividend income growth (includes both reinvestment of dividends and investment of $125 per quarter per stock + initial $5,000 investment in each stock)

Notice that had the investor pocketed the dividends instead of reinvesting them (See Table 4), the non-replacement portfolio would have been worth only $452,696 ($101,272 less than with the DRIP plans) for a percentage gain of 262% (annual rate of 8.96%). The annual rate of return in dividend income growth would have been 16.27%, which is 1.6% less than when the dividends were reinvested. (See Tables 2 and 3.)

Even worse results occurred in the portfolio containing the replacement stocks when DRIP plans were not used. Referencing Tables 4 and 4A, the FIV (Final Investment Value) for the Abbott Labs/Kimberly-Clark stocks was $35,980.30 (107.84% gain) as compared to $33,636.40 (169.09% gain) with the non-replaced Abbott Labs stock, and the FIV for the Becton, D'son/Eli Lilly stocks was $26,380.04 (111.04% gain) as compared to $71,416.60 (471.33% gain) with non-replaced Becton, D'son. This substantial decline resulted in a total portfolio value of $410,004 (228% gain) as compared to a total value of $452,696.30 (262.16% gain) without replacing any of the stocks. The total APR (Annual Percentage Return) of the portfolio upon replacement declined to 8.24% from 8.96%.

Not reinvesting the dividends had a significant impact on individual stock value growth and dividend growth rates. For example, McDonald's had a 191.58% gain in stock value and a 2,194.72% gain in dividend growth without the DRIP plan. This is 51.72% less gain in stock value and 393.33% less gain in dividend growth than it would have been had the dividends been reinvested. It pays to reinvest the dividends.

TABLE 4
STOCK VALUE GROWTH WITHOUT REINVESTING DIVIDENDS
1993-2007

Stocks Name	IIV	ICS	INS	FCS	FNS	FIV	% GAIN	ARR
Abbott Labs	5000	13.40	373.13	54.15	621.17	33,636.40	169.09	6.82
Aflac, Inc.	5000	4.65	1,075.27	54.55	1,629.77	88,904.10	611.23	13.97
Becton, D'son	5000	8.25	606.06	77.6	920.32	71,416.60	471.33	12.32
Coca-Cola	5000	20.65	242.13	54.95	421.18	23,143.80	85.15	4.19
Exxon Mobil	5000	15.90	314.47	82.15	558.61	45,890.20	267.12	9.06
Johnson & Johnson	5000	10.40	480.77	64.25	733.74	47,142.70	277.14	9.25
McDonald's Corp.	5000	13.00	384.62	53.00	687.68	36,447.10	191.58	7.39
PepsiCo, Inc.	5000	19.40	257.73	70.45	472.36	33,277.70	166.22	6.75
Procter & Gamble	5000	12.85	389.11	67.80	630.12	42,722.00	241.78	8.54
Wal-Mart Stores	5000	14.25	350.88	46.75	644.19	30,115.70	140.93	6.04
TOTAL	50,000					452,696.30	262.16	8.96

IIV = Initial investment value
ICS = Initial year's average cost per share ((high price – low price)/2)
INS = Initial number of shares purchased
FCS = Final year's average cost per share ((high price – low price)/2)
FNS = Final number of shares
FIV = Final investment value
% GAIN = Percentage total return (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)
ARR = Annual rate of return in accumulations of stock value (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)

TABLE 4A
STOCK VALUE GROWTH WITHOUT REINVESTING DIVIDENDS
WITH STOCK REPLACEMENT 1993-2007

Stocks Name	IIV	ICS	INS	FCS	FNS	FIV	% GAIN	ARR
Abbott Labs/ Kimberly-Clark	5000	13.40	373.13	68.30	526.80	35,980.30	187.84	7.30
Aflac, Inc.	5000	4.65	1,075.27	54.55	1,629.77	88,904.10	611.23	13.97
Becton, D'son/ Lilly (Eli) and Co.	5000	8.25	606.06	55.05	479.21	26,380.40	111.04	5.11
Coca-Cola	5000	20.65	242.13	54.95	421.18	23,143.80	85.15	4.19
Exxon Mobil	5000	15.90	314.47	82.15	558.61	45,890.20	267.12	9.06
Johnson & Johnson	5000	10.40	480.77	64.25	733.74	47,142.70	277.14	9.25
McDonald's Corp.	5000	13.00	384.62	53.00	687.68	36,447.10	191.58	7.39
PepsiCo, Inc.	5000	19.40	257.73	70.45	472.36	33,277.70	166.22	6.75
Procter & Gamble	5000	12.85	389.11	67.80	630.12	42,722.00	241.78	8.54
Wal-Mart Stores	5000	14.25	350.88	46.75	644.19	30,115.70	140.93	6.04
TOTAL	50,000					410,004.00	228.00	8.24

IIV = Initial investment value
ICS = Initial year's average cost per share ((high price – low price)/2)
INS = Initial number of shares purchased
FCS = Final year's average cost per share ((high price – low price)/2)
FNS = Final number of shares
FIV = Final investment value
% GAIN = Percentage total return (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)
ARR = Annual rate of return in accumulations of stock value (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)

TABLE 5
DIVIDEND GROWTH WITHOUT REINVESTING DIVIDENDS
1993-2007

Stocks Name	INS	IDS	IDI	FNS	FDS	FDI	% GAIN	ARI
Abbott Labs	373.13	0.34	134.80	621.17	1.30	807.52	499.08	13.64
Aflac, Inc.	1,075.27	0.06	68.55	1,629.77	0.80	1,303.82	1,802.04	23.42
Becton, D'son	606.06	0.17	109.47	920.32	0.98	901.91	723.89	16.26
Coca-Cola	242.13	0.34	87.47	421.18	1.36	572.80	554.86	14.37
Exxon Mobil	314.47	0.72	240.57	558.61	1.37	765.30	218.13	8.62
Johnson & Johnson	480.77	0.25	127.70	733.74	1.62	1,188.66	830.79	17.27
McDonald's Corp.	384.62	0.11	44.95	687.68	1.50	1,031.52	2,194.72	25.08
PepsiCo, Inc.	257.73	0.31	84.89	472.36	1.43	675.47	695.70	15.97
Procter & Gamble	389.11	0.28	115.76	630.12	1.28	806.55	596.75	14.87
Wal-Mart Stores	350.88	0.07	26.10	644.19	0.83	534.68	1,948.84	24.07
TOTAL			1,040.26			8,588.23	725.58	16.27

INS = Initial number of shares purchased
IDS = Initial declared dividend per share
IDI = Initial dividend income (beginning with end of first year)
FNS = Final number of shares
FDS = Final declared dividend per share
FDI = Final dividend income (last year)
% GAIN = Percentage return in dividend income growth (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)
ARI = Annual rate of return in dividend income growth (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)

TABLE 5A
DIVIDEND GROWTH WITHOUT REINVESTING DIVIDENDS
WITH STOCK REPLACEMENT
1993-2007

Stocks Name	INS	IDS	IDI	FNS	FDS	FDI	% GAIN	ARI
Abbott Labs/ Kimberly-Clark	373.13	0.34	134.80	526.80	2.08	1,095.74	712.89	16.15
Aflac, Inc.	1,075.27	0.06	68.55	1,629.77	0.80	1,303.82	1,802.04	23.42
Becton, D'son/ Lilly (Eli) and Co.	606.06	0.17	109.47	479.21	1.70	814.65	644.18	15.41
Coca-Cola	242.13	0.34	87.47	421.18	1.36	572.80	554.86	14.37
Exxon Mobil	314.47	0.72	240.57	558.61	1.37	765.30	218.13	8.62
Johnson & Johnson	480.77	0.25	127.70	733.74	1.62	1,188.66	830.79	17.27
McDonald's Corp.	384.62	0.11	44.95	687.68	1.50	1,031.52	2,194.72	25.08
PepsiCo, Inc.	257.73	0.31	84.89	472.36	1.43	675.47	695.70	15.97
Procter & Gamble	389.11	0.28	115.76	630.12	1.28	806.55	596.75	14.87
Wal-Mart Stores	350.88	0.07	26.10	644.19	0.83	534.68	1,948.84	24.07
TOTAL			1,040.26			8,789.19	744.90	16.46

INS = Initial number of shares purchased
IDS = Initial declared dividend per share
IDI = Initial dividend income (beginning with end of first year)
FNS = Final number of shares
FDS = Final declared dividend per share
FDI = Final dividend income (last year)
% GAIN = Percentage return in dividend income growth (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)
ARI = Annual rate of return in dividend income growth (includes $125 invested per quarter per stock + initial $5,000 investment in each stock)

The decline in the ending stock portfolio value resulting from the replacement of Abbott Labs with Kimberly-Clark and Becton, D'son with Eli Lilly indicates that replacement stocks that exhibit faster growing dividends do **not** necessarily result in a greater stock portfolio value. As a matter of fact, this procedure could have just the opposite effect.

Another factor that must be considered is the pay-out ratio (dividends per share/earnings per share). If the pay-out ratio for the replacement stock is substantially greater than that of the replaced stock, the result could be a decline in the ending stock portfolio value. Even if the pay-out ratio for the replacing stock is less than that of the replaced stock initially, but begins to increase at the end of the earnings spectrum, the result could be a decrease in the value of the portfolio.

Referencing Table 6, the pay-out ratio for Eli Lilly was consistently much greater than that of Becton, D'son. At the end of the select period, the pay-out ratio for Kimberly-Clark became greater than that of Abbott Labs. There appears to be a correlation between a higher pay-out ratio for the replacement stocks and a declining ending stock portfolio value.

TABLE 6
PAY-OUT RATIO WITH STOCK REPLACEMENT
1993-2007

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Becton, D'son										
DIV/SH	0.29	0.34	0.37	0.38	0.39	0.4	0.6	0.72	0.86	0.98
EN/SH	1.3	1.46	1.49	1.63	1.79	2.15	2.56	2.88	3.28	3.84
PR	**0.223**	**0.233**	**0.248**	**0.233**	**0.218**	**0.186**	**0.234**	**0.250**	**0.262**	**0.255**
Eli										
DIV/SH	0.8	0.92	1.04	1.12	1.24	1.34	1.42	1.52	1.6	1.7
EN/SH	1.94	2.28	2.65	2.76	2.5	2.58	2.82	2.88	3.18	3.54
PR	**0.412**	**0.404**	**0.392**	**0.406**	**0.496**	**0.519**	**0.504**	**0.528**	**0.503**	**0.480**
Abbott Labs										
DIV/SH	0.6	0.66	0.74	0.82	0.94	0.98	1.04	1.1	1.18	1.3
EN/SH	1.51	1.66	1.78	1.88	2.06	2.21	2.27	2.5	2.52	2.84
PR	**0.397**	**0.398**	**0.416**	**0.436**	**0.456**	**0.443**	**0.458**	**0.440**	**0.468**	**0.458**
Kimberly-Clark										
DIV/SH	0.99	1.03	1.08	1.12	1.2	1.36	1.6	1.8	1.96	2.08
EN/SH	2.45	2.98	3.31	3.27	3.36	3.38	3.61	3.78	3.9	4.25
PR	**0.404**	**0.346**	**0.326**	**0.343**	**0.357**	**0.402**	**0.443**	**0.476**	**0.503**	**0.489**

DIV = annual dividends per share
EN = annual earnings per share
PR = pay-out ratio

CONCLUSION

Results from this paper prove the effectiveness of long-term investment in quality stocks that have a record of consistency in dividend increases. Thus, investments in high-quality, dividend-paying stocks provide a safe and long-term plan for financial independence for those who have retired or will soon retire, and thereby negate the risk of outliving one's income.

The investment strategy of combining dividend growth and the reinvestment of the dividends with that of dollar cost averaging of periodic additional investments has a significant advantage over that of just investing for dividend growth and the reinvestment of those dividends. The greater discipline established through dollar cost averaging of periodic additional investments dramatically increases the investment return.

This paper also shows that financial independence for life can be achieved with relatively small sums of money by making quality investments and being disciplined to do the same thing period after period of time.

However, the authors' original thought of increasing the final portfolio value by replacing a stock that did not meet the study's criteria of increasing its dividends by at least 5% from the previous year with one that had both a minimum five percent dividend increase and a dividend income at least as great as the stock it was replacing was shown to be incorrect.

A serendipity result of this study indicates that the driving force of the ultimate portfolio value may have been the payout ratio. In the authors' selection of stocks, there was an inverse relationship between

the ending portfolio value and an increasing payout ratio. As the payout ratio increased, the ending portfolio value decreased.

Thus, fortuitous results of the study indicate that replacing one stock with another whose dividend is increasing at a faster rate and has income at least equal to the replaced stock are not the sole criteria for financial independence. Other factors must be considered, one of which appears to be the pay-out ratio. The right kind of pay-out ratio seems to be at least one of the prominent factors in the decision making process.

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