

DOLLAR COST AVERAGING IN GOOD AND BAD TIMES

For the investors not wishing to follow the ups and downs of the stock market on a daily or even weekly basis, but who would still like to take advantage of whatever gains the market has to offer, Dollar Cost Averaging can be quite profitable, but mainly with a **long term, disciplined approach**.

Dollar Cost Averaging involves simply investing a consistent sum of money at regular intervals in the stock market. To achieve this therefore, an individual would invest e.g. \$100.00 dollars every Monday morning in a chosen stock or a basket of stocks over a period of time.

To see how well this worked, we used the Dow Jones Industrial Average and the Standard and Poor 500 Index (S&P 500) – two stock market indices that can now be invested in by the average investor by way of Exchange Traded Funds (ETF's).

The ETF symbol for the Dow Jones Industrial Average is **DIA**, whilst that for the S&P 500 Index is **SPY** and these two instruments may be purchased like any ordinary stock, through a broker.

We chose these since they are two of the oldest indices by which United States stock market activity has been measured, and as a result, we were able to measure the benefit of Dollar Cost Averaging since January of 1927 until January of 2003 – over 75 years worth of data.

Dollar Cost Averaging and the Crash of 1929

On the 29th October, 1929, the Stock Market suffered one of its largest declines in history – an event which was followed by what is now known as the Great Depression.

Conventional wisdom said to pull your money out of the market, but our computer simulations showed that if an investor had started investing \$100.00 in the Dow Jones Index from that moment in time, subject to a brokerage fee of \$25.00, then 25 years later he or she would have realized an 82.2% return on their total investment – the equivalent of a 2.4% annualized gain for each of those 25 years.

CRASH OF 1929			
INDEX:	DOW JONES	INDEX:	S&P 500
START DATE	10/31/29	START DATE	10/31/29
END DATE	10/29/54	END DATE	10/29/54
BROKERAGE FEES		\$25.00	
WEEKLY INVESTMENT		\$100.00	
NUMBER OF WEEKLY INVESTMENTS		1304	
TOTAL INVESTMENT		\$130,400.00	
TOTAL RETURN (\$)		\$237,612.19	
TOTAL PROFIT		\$107,212.19	
RETURN (%)		82.22%	
AVERAGE ANNUAL RETURN		2.43%	
BROKERAGE FEES		\$25.00	
WEEKLY INVESTMENT		\$100.00	
NUMBER OF WEEKLY INVESTMENTS		1304	
TOTAL INVESTMENT		\$130,400.00	
TOTAL RETURN (\$)		\$236,281.19	
TOTAL PROFIT		\$105,881.19	
RETURN (%)		81.20%	
AVERAGE ANNUAL RETURN		2.41%	

Dollar Cost Averaging Through Global Crises

We also examined what impact major negative world events would have had on a Dollar Cost Averaging Strategy over the years. These events are summarized in the following tables:

START OF WORLD WAR II			
INDEX:	DOW JONES	INDEX:	S&P 500
START DATE	09/09/39	START DATE	09/09/39
END DATE	09/11/64	END DATE	09/11/64
BROKERAGE FEES		\$25.00	
WEEKLY INVESTMENT		\$100.00	
NUMBER OF WEEKLY INVESTMENTS		1306	
TOTAL INVESTMENT		\$130,600.00	
TOTAL RETURN (\$)		\$357,240.74	
TOTAL PROFIT		\$226,640.74	
TOTAL RETURN (%)		173.54%	
AVERAGE ANNUAL RETURN		4.11%	
BROKERAGE FEES		\$25.00	
WEEKLY INVESTMENT		\$100.00	
NUMBER OF WEEKLY INVESTMENTS		1306	
TOTAL INVESTMENT		\$130,600.00	
TOTAL RETURN (\$)		\$397,713.96	
TOTAL PROFIT		\$267,113.96	
TOTAL RETURN (%)		204.53%	
AVERAGE ANNUAL RETURN		4.56%	

US ENTERS WORLD WAR II			
INDEX:	DOW JONES	INDEX:	S&P 500
START DATE	12/13/41	START DATE	12/13/41
END DATE	12/09/66	END DATE	12/09/66
BROKERAGE FEES		\$25.00	
WEEKLY INVESTMENT		\$100.00	
NUMBER OF WEEKLY INVESTMENTS		1305	
TOTAL INVESTMENT		\$130,500.00	
TOTAL RETURN (\$)		\$287,989.47	
TOTAL PROFIT		\$157,489.47	
RETURN (%)		120.68%	
AVERAGE ANNUAL RETURN		3.22%	

START OF 1973 BEAR MARKET			
INDEX:	DOW JONES	INDEX:	S&P 500
START DATE	01/12/73	START DATE	01/12/73
END DATE	01/09/98	END DATE	01/09/98
BROKERAGE FEES		\$25.00	
WEEKLY INVESTMENT		\$100.00	
NUMBER OF WEEKLY INVESTMENTS		1305	
TOTAL INVESTMENT		\$130,500.00	
TOTAL RETURN (\$)		\$533,868.58	
TOTAL PROFIT		\$403,368.58	
RETURN (%)		309.09%	
AVERAGE ANNUAL RETURN		5.80%	

Dollar Cost Averaging Through US Conflicts Abroad

We then examined what impact US participation in conflicts would have had on a Dollar Cost Averaging Strategy over the years. These events are summarized in the following tables:

START OF THE KOREAN WAR		
INDEX	DOW JONES	S&P 500
START DATE	06/30/50	06/30/50
END DATE	06/27/75	06/27/75
BROKERAGE FEES	\$25.00	\$25.00
WEEKLY INVESTMENT	\$100.00	\$100.00
NUMBER OF WEEKLY INVESTMENTS	1305	1305
TOTAL INVESTMENT	\$130,500.00	\$130,500.00
TOTAL RETURN (\$)	\$157,215.59	\$179,604.09
TOTAL PROFIT	\$26,715.59	\$49,104.09
RETURN (%)	20.47%	37.63%

START OF THE VIETNAM WAR		
INDEX:	DOW JONES	S&P 500
START DATE	03/03/61	03/03/61
END DATE	02/28/86	02/28/86
BROKERAGE FEES	\$25.00	\$25.00
WEEKLY INVESTMENT	\$100.00	\$100.00
NUMBER OF WEEKLY INVESTMENTS	1305	1305
TOTAL INVESTMENT	\$130,500.00	\$130,500.00
ENDING BALANCE (\$)	\$191,591.14	\$228,939.39
TOTAL PROFIT	\$61,091.14	\$98,439.39
RETURN (%)	46.81%	75.43%

Buying and Holding Beats Dollar Cost Averaging

For the investor with a large lump sum of money to invest, however, it appears that breaking this sum of money into smaller amounts and investing them over a period of time using the **Dollar Cost Averaging** approach will not yield as much profit as a **Buy and Hold** strategy over the same period of time – not even over the long run.

Investing e.g. \$100,000 at one time in either the Dow or the S&P 500 and holding it over a long period of time before selling it (the Buy and Hold investing method) has outperformed the Dollar Cost Averaging Method (e.g. making an investment of \$100 each at the end of each week for 1000 consecutive weeks, with the same sum of money) at least **93%** of the time when we evaluated these two methods over 5, 10, 15, 20 and 25 year time periods.

To examine this phenomenon, we took Dow Jones and S&P500 weekly price data that went as far back as January, 1927 and for each of the weekly dates present in the database, projected what the Buy-and-Hold and Dollar Cost Averaging methods would each have yielded for each of the 5 time periods mentioned above.

In each case, it was assumed that an individual invested \$100.00 a week in only one of the S&P500 or the Dow Jones Indices and was subjected to a brokerage fee of \$25.00. The results for each individual index are in the following tables:

INVESTMENT PERIOD: 5 YEARS	DJIA	S&P500
TOTAL NUMBER OF WEEKS EVALUATED	3715	3715
PERCENTAGE OF TIMES DOLLAR COST AVERAGING WAS PROFITABLE	25%	26%
PERCENTAGE OF TIMES BUY-AND-HOLD BEATS DOLLAR COST AVERAGING	94%	94%

INVESTMENT PERIOD: 10 YEARS	DJIA	S&P500
TOTAL NUMBER OF WEEKS EVALUATED	3465	3465
PERCENTAGE OF TIMES DOLLAR COST AVERAGING WAS PROFITABLE	55%	61%
PERCENTAGE OF TIMES BUY-AND-HOLD BEATS DOLLAR COST AVERAGING	93%	93%

INVESTMENT PERIOD: 15 YEARS	DJIA	S&P500
TOTAL NUMBER OF WEEKS EVALUATED	3215	3215
PERCENTAGE OF TIMES DOLLAR COST AVERAGING WAS PROFITABLE	68%	74%
PERCENTAGE OF TIMES BUY-AND-HOLD BEATS DOLLAR COST AVERAGING	94%	93%

INVESTMENT PERIOD: 20 YEARS	DJIA	S&P500
TOTAL NUMBER OF WEEKS EVALUATED	2965	2965
PERCENTAGE OF TIMES DOLLAR COST AVERAGING WAS PROFITABLE	81%	84%
PERCENTAGE OF TIMES BUY-AND-HOLD BEATS DOLLAR COST AVERAGING	94%	94%

INVESTMENT PERIOD: 25 YEARS	DJIA	S&P500
TOTAL NUMBER OF WEEKS EVALUATED	2715	2715
PERCENTAGE OF TIMES DOLLAR COST AVERAGING WAS PROFITABLE	88%	98%
PERCENTAGE OF TIMES BUY-AND-HOLD BEATS DOLLAR COST AVERAGING	94%	94%

These tables also demonstrate that depending on which week you enter the market, the possibility exists that the Dollar Cost Averaging Method will not always be a profitable one to you.

The Long Run is Best

Our computer simulations of the Dollar Cost Averaging Method shows that the longer the time periods involved, the more profitable it becomes.

Hence, if you enter the market with a long term objective, the profitability of this method increases.

Although it is beaten up to 94% of the time by the Buy and Hold method, we found that when a \$100 sum of money was invested consistently at the end of every week for 25 years, the net result was a profit 88% of the time when the funds were invested in the Dow Jones Industrial Average Index, but profitable 98% of the time when the funds were invested in the S&P500 Index.

Because of the consistency of the Buy and Hold Strategy, we have also included on www.financemodels.com , a look at this simple but powerful strategy.

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