# HOW VALUE AVERAGING ADDS VALUE

## Achieving Investment Goals Even in Tough Economic Times

Written by

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The purpose of this document is to demonstrate that by using the **Value Averaging** (VA) investment strategy, the probability of achieving the target value for a portfolio is very high over a 5 or 10 year time frame. In addition, it will show that above average returns are possible without increasing risk. It will also demonstrate that **Dollar Cost Averaging** (DCA) fails in most instances of helping investors to achieve their savings target.

Value Averaging is a formula investment strategy which has be shown to achieve lower average costs and higher rates of return than alternative strategies. The power of the Value Averaging method derives from its marriage of two proven but separate techniques: **Dollar Cost Averaging and Portfolio Rebalancing**. Value Averaging is not new as it was first researched and written about in 1988 by then Harvard Professor Dr. Michael Edleson. By considering a portfolio's expected rate of return (something that the "Dollar-Cost Averaging" method neglects), the "Value Averaging" method helps to identify periods of over and underperformance. The mathematical imperative of Dollar Cost Averaging, the time honored purchase of equal periodic amounts of stock or mutual funds, forces investors to buy more shares when prices are low than when they are high, increasing overall returns, on average. Rebalancing, on the other hand, is most often applied to mature portfolios and mandates the periodic adjustment of portfolio allocations back to a set policy, forcing a strong policy of "buy low / sell high" discipline into an investors trading decision making. The genius of VA lies in the combination of the two techniques, VA and DCA, into the accumulation phase of a portfolio. Not only are more shares bought when prices are low and fewer shares when prices are high, as with DCA, but more money is deployed into stocks when prices are low and less when prices are high, producing yet more salutary long term results.

Basically, the idea behind dollar-cost averaging is that instead of investing a lump sum of money all at once, you invest it a little bit at a time over a specific period. So, for example, if at the beginning of the year you had $12,000 that you wanted to invest in stocks, you might invest $1,000 each month over the course of a year instead of investing it all at once. The idea is that you reduce risk because you're buying stocks at a variety of prices throughout the year instead of buying all the shares at a single price. Dollar cost averaging is a "Buy low, buy less high" strategy, as there are no rules for selling.

Value Averaging works a bit differently. With Value Averaging, you first figure out how much money you will need to accumulate for a goal such as retirement. Then, based on an annual rate of return you expect to earn on your investments, you calculate how much you must invest each month to achieve that goal. When a portfolio is underperforming, share prices are likely to be low. And that's when you'll be investing more to make up for the under performance. When the portfolio is outperforming your target rate return, share prices are likely to be high. That means it is not a good time to buy and you could even sell for a profit, provided you maintain your pre-determined average growth rate.

Value Averaging offers investors an alternative to investing a lump sum of money in times of market uncertainty by allowing them to ease into the market over time, which reduces the timing risk. The mechanical aspect of VA provides an investment discipline that requires no market forecasts and is relatively simple to initiate.

At **VA Investment Software** we have developed a proprietary software program that allows us to back-test the value averaging investment method, over any time frame, using historical data from any North American Stock, ETF or US based mutual fund. The program also compares Value Averaging against Dollar Cost Averaging.

**Investment Scenario**

Let us assume that if an investor was age 55 today and wanted to retire in the next 5 years and he needed to accumulate and additional $100,000 in capital and assuming an 8% rate of return and 3% for inflation, he would have to save $1,269 per month.

Here's where the "value" part of value averaging comes in. Based on the objective of the investor above, at the end of the first year, instead of having the $16,020 he should have had to be on track toward his $100,000 goal, the market leaves him with just $15,000. That would mean that the next month, instead of investing the usual $1,269, he would invest $2,289 to bring the portfolio value to where it's should be to remain on track toward his goal. In fact, he would go through this process each month. In months where the portfolio falls behind, he would add to the amount he invested each month. And in months where the returns are higher than expected and the portfolio's value gets beyond where it needs to be, he would scale back his monthly investment, or even possibly end up selling some shares.

The examples on the following pages use **actual historical data** from the last 5 -10 years with the following criteria:

| | |
|---|---|
| Target value | $100,000 |
| Time period: | 5 years ending October 31, 2010 |
| Minimum monthly investment | $1,269 |
| Maximum investment: | Capped at 3 times the monthly investment |
| Projected portfolio growth rate: | 8% |
| Inflation rate | 3% |
| Board lot trades only | No |
| Selling rule: | Immediate selling of shares on sell signals |
| Timing | Monthly trades |

**Example 1**

In our first example we will use a broad market ETF, the **Vanguard Total Stock Market Index** (Symbol: **VTI**). We will start by initially investing $1,269 per month over 5 years as in our retirement example explained in the previous paragraph.

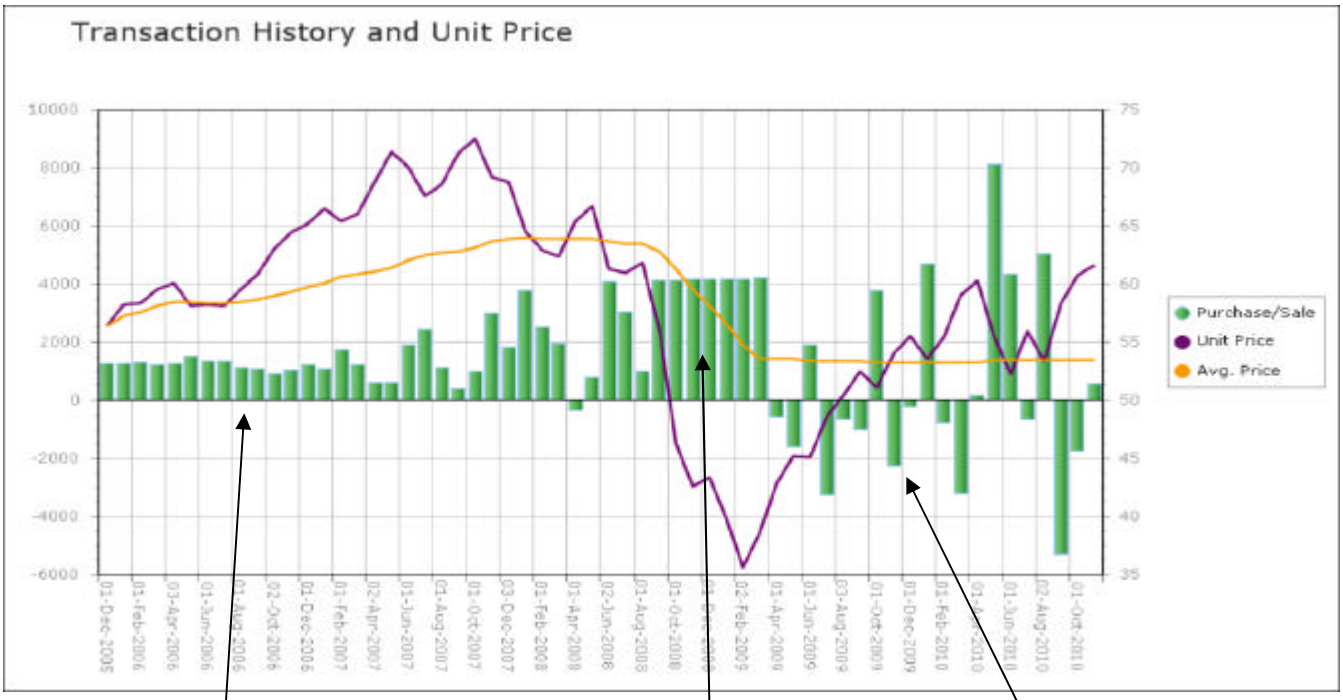
| | Value Averaging | | | Dollar Cost Averaging | | |
|---|---|---|---|---|---|---|
| | **Amount Invested** | **Total Invested** | **Year End Value** | **Amount Invested** | **Total Invested** | **Year End Value** |
| End of Yr 1 | | $14,738 | $16,020 | | $15,444 | $16,729 |
| End of Yr 2 | $16,398 | $31,136 | $33,858 | $15,914 | $31,359 | $34,053 |
| End of Yr 3 | $31,117 | $62,253 | $44,541 | $16,398 | $47,757 | $32,828 |
| End of Yr 4 | $12,326 | $74,579 | $75,660 | $16,897 | $64,654 | $61,969 |
| End of Yr 5 | $12,135 | $86,714 | $100,000 | $17,411 | $82,065 | $89,679 |
| | | | | | | |
| Time frame: Oct 1 2005 to Oct. 31 2010 | | | | | | |

| **Value Averaging Portfolio** | | | **Dollar Cost Averaging Portfolio** |
|---|---|---|---|
| Adjusted Cost Base | $86,714 | | $82,065 |
| Current value | $100,000 | | $89,679 |
| Cash in portfolio | $6,458 | | $0.00 |
| Total Portfolio Value | $106,458 | | $89,679 |
| Total return | 30.63% | | 19.64% |
| Annualized Return* | 5.59% | | 3.71% |
| Average cost per share | $53.49 | | $56.44 |

* Dollar weighted

From the above results:

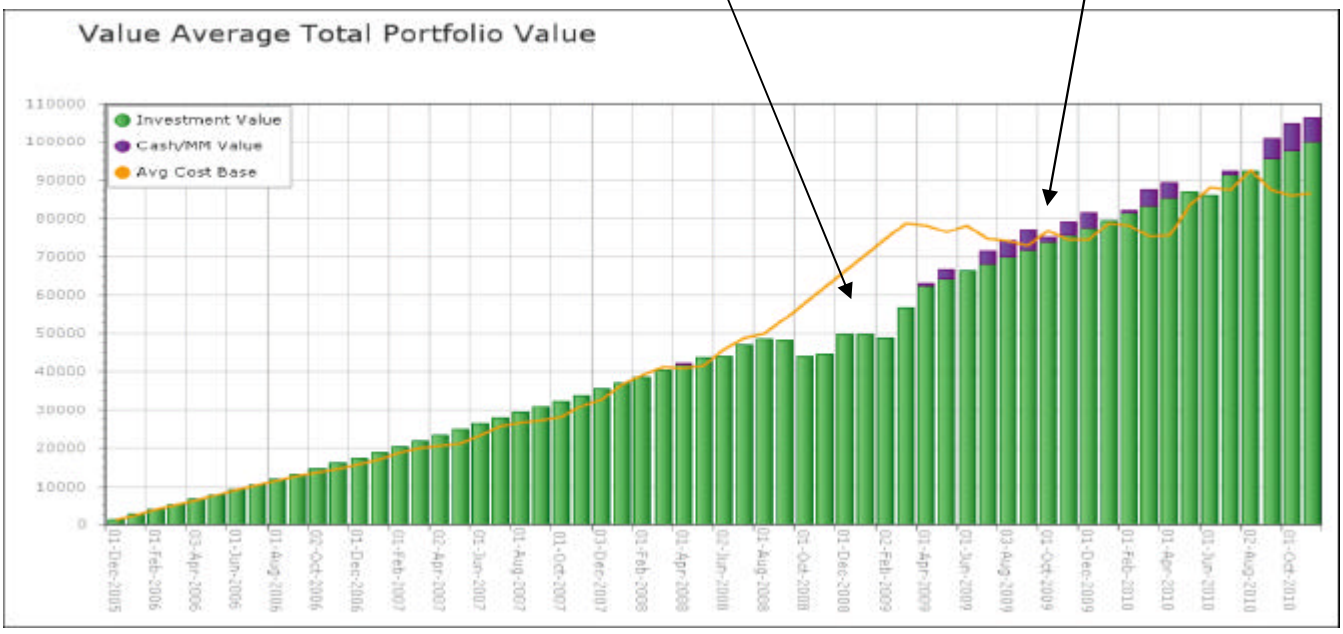
- The Value Averaging strategy outperformed the Dollar Cost Averaging strategy and the investor ended up with $6,458 (6.4%) more capital than the investors required savings target.
- The Value Averaging strategy outperformed Dollar Cost Averaging by $16,779 or 18.7%
- With Dollar Cost Averaging the investor failed to reach the $100,000 retirement target with a shortfall of $10,321 or 10.3%
- For the 5yr period ending October 31 2010 the Vanguard Total Stock Market Index ETF had an actual annualized return of 2.41%.
- The Value Averaging investment strategy outperformed the actual fund by 3.18%




You would be building a position as the fund was rising gradually.

You would be making larger purchases as the fund price was falling and the portfolio fell below its target value.

You would be selling as the fund started to rise and building a small cash position.



**Example 2**

In our second example we will use a more aggressive ETF, **the iShares S&P Global Technology** (Symbol: **IXN**). We will start by initially investing $1,269 per month as explained in the investment scenario section.

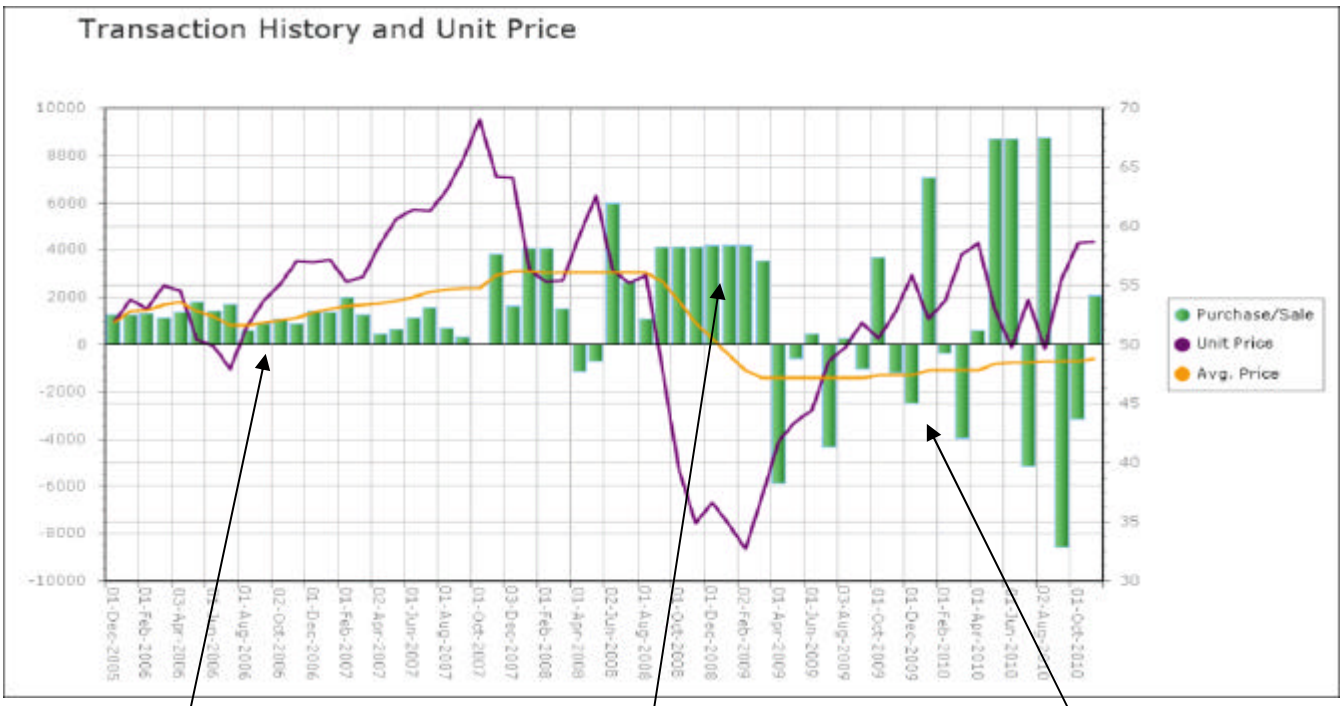
| | Value Averaging | | | Dollar Cost Averaging | | |
|---|---|---|---|---|---|---|
| | **Amount Invested** | **Total Invested** | **Year End Value** | **Amount Invested** | **Total Invested** | **Year End Value** |
| End of Yr 1 | | $14,693 | $16,020 | | $15,444 | $16,714 |
| End of Yr 2 | $14,735 | $29,428 | $33,858 | $15,915 | $31,359 | $35,708 |
| End of Yr 3 | $31,674 | $61,102 | $41,154 | $16,398 | $47,757 | $30,452 |
| End of Yr 4 | $6,837 | $67,939 | $75,660 | $16,897 | $64,654 | $66,862 |
| End of Yr 5 | $15,300 | $83,238 | $100,000 | $17,411 | $82,065 | $93,081 |
| | | | | | | |
| Time frame: Oct 1 2005 to Oct. 31 2010 | | | | | | |

| **Value Averaging Portfolio** | | | **Dollar Cost Averaging Portfolio** |
|---|---|---|---|
| Adjusted Cost Base | $83,238 | | $82,065 |
| Current value | $100,000 | | $93,081 |
| Cash in portfolio | $12,508 | | $0.00 |
| Final Portfolio Value | $112,508 | | $93,081 |
| Total return* | 48.17% | | 28.76% |
| Annualized Return* | 8.32% | | 5.28% |
| Average cost per share | $48.82 | | $51.71 |

* Dollar weighted

From the above results:

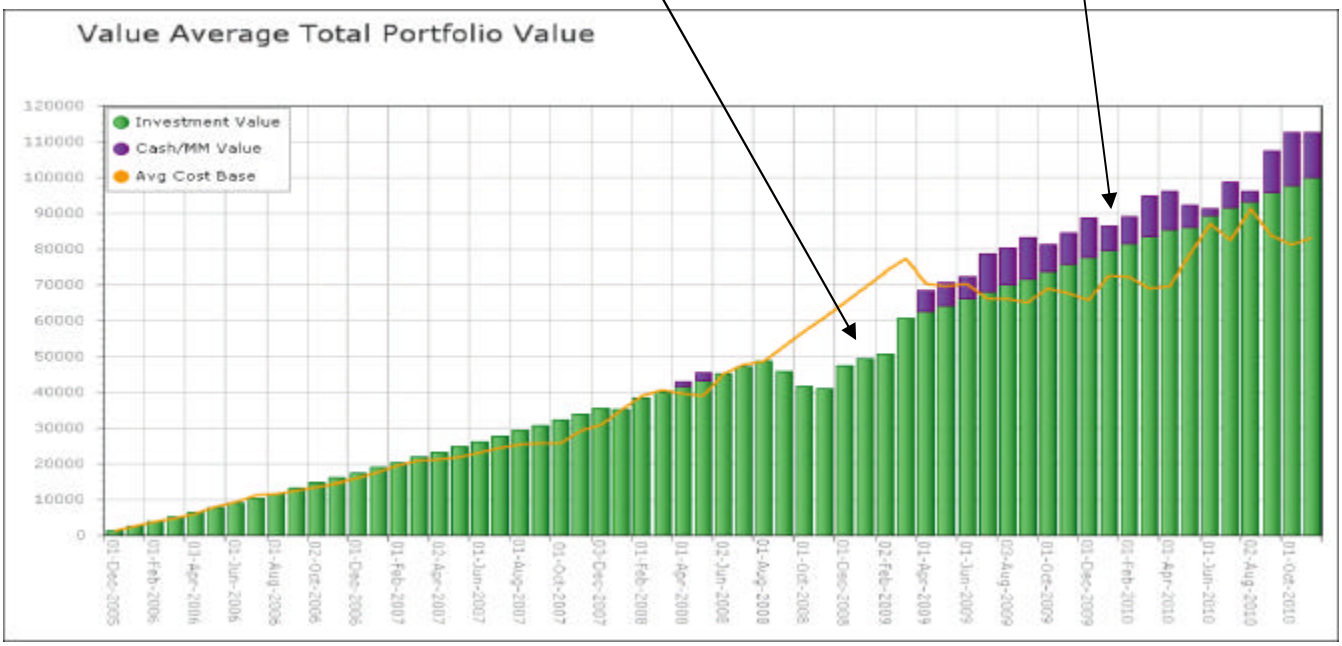
- The Value Averaging strategy outperformed the Dollar Cost Averaging strategy and the investor ended up with $12,508 (12.5%) more capital than his required savings target.
- The Value Averaging strategy outperformed Dollar Cost Averaging by $19,427 or 20.8%
- With Dollar Cost Averaging the investor failed to reach the $100,000 retirement target with a shortfall of $6,919 or 6.9%
- For the 5yr period ending October 31 2010 the iShares S&P Global Technology ETF had an actual annualized return of 3.87%.
- The Value Averaging investment strategy outperformed the actual fund by 4.45%




You would be building a position as the fund was rising gradually

You would be making larger purchases as the fund price was falling and portfolio fell below its target value.

You would be selling as the fund started to rise and building a cash position.



**3 – No Selling Rule**

If you held your ETF in a taxable account, an investor could implement a "no sell" rule where the system would not make any sell transactions that would trigger possible capital gain taxes. In addition, since DCA has no rules for selling you could make VA perform similar to DCA except that the amount of the periodic purchase would vary where in DCA purchases are fixed. Using **iShares MSCI Emerging Markets** (Symbol: **EEM**) ETF.

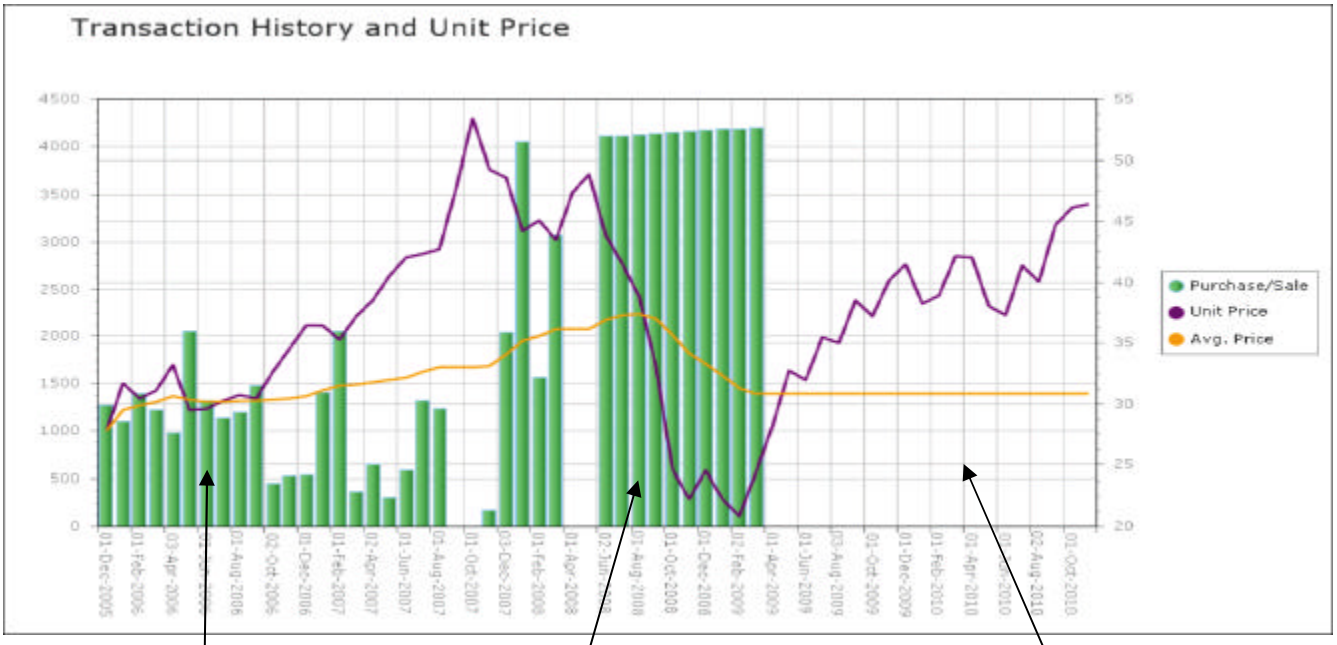
| | Value Averaging | | | Dollar Cost Averaging | | |
|---|---|---|---|---|---|---|
| | **Amount Invested** | **Total Invested** | **Year End Value** | **Amount Invested** | **Total Invested** | **Year End Value** |
| End of Yr 1 | | $14,139 | $16,020 | | $15,444 | $17,268 |
| End of Yr 2 | $8639 | $22,778 | $33,858 | $15,915 | $31,359 | $43,659 |
| End of Yr 3 | $35521 | $58,299 | $37,941 | $16,398 | $47,757 | $29,413 |
| End of Yr 4 | $16728 | $75,027 | $97,802 | $16,897 | $64,654 | $76,032 |
| End of Yr 5 | $0 | $75,027 | $112,966 | $17,411 | $82,065 | $107,417 |
| | | | | | | |
| Time frame: Oct 1 2005 to Oct. 31 2010 | | | | | | |

| **Value Averaging Portfolio** | | | **Dollar Cost Averaging Portfolio** |
|---|---|---|---|
| Adjusted Cost Base | $75,027 | | $82,065 |
| Current value | $112,966 | | $107,417 |
| Cash in portfolio | $0 | | $0.00 |
| Final Portfolio Value | $112,966 | | $107,417 |
| Total return* | 102.07% | | 69.53% |
| Annualized Return* | 15.38% | | 11.33% |
| Average cost per share | $30.82 | | $35.46 |

* Dollar weighted

From the above results:

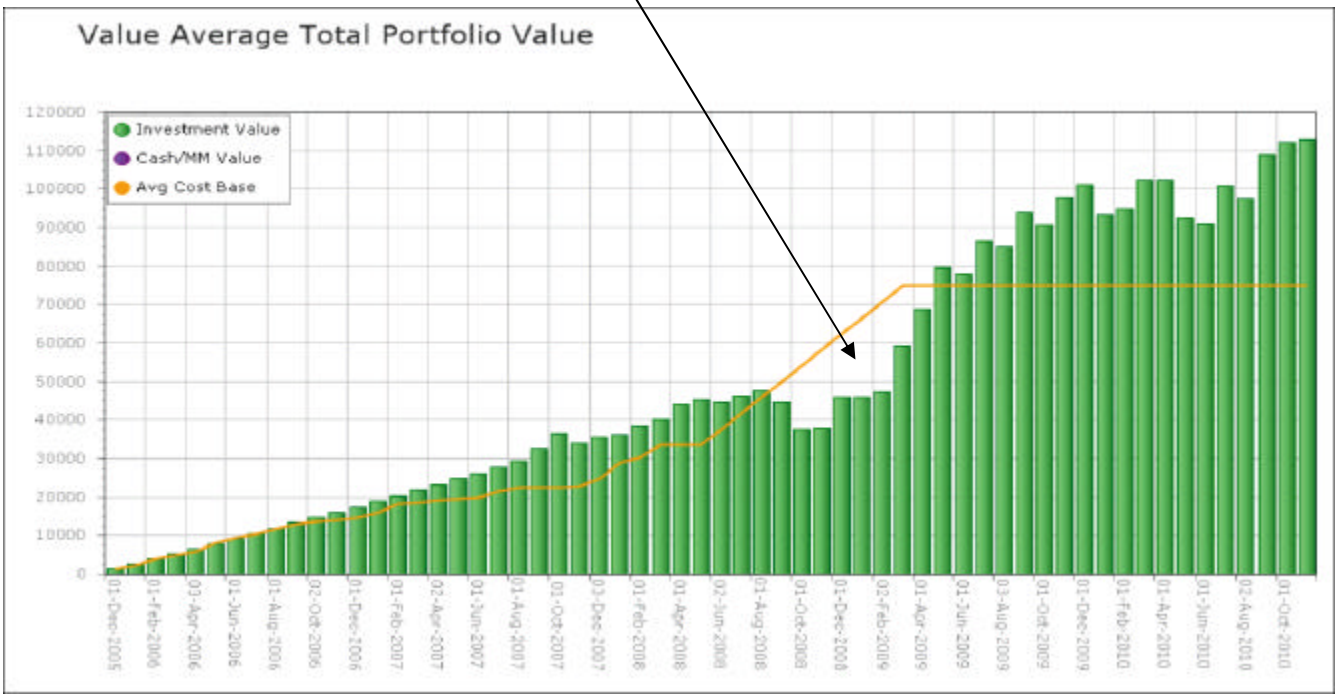
- The Value Averaging strategy outperformed the Dollar Cost Averaging strategy and the investor ended up with $12,966 (12.9%) more capital than his required savings target.
- The Value Averaging strategy outperformed Dollar Ccost Averaging by $5,549 or 5.16%
- For the 5yr period ending October 31 2010 the iShares MSCI Global Technology ETF had an actual annualized return of 13.82%.
- The Value Averaging no-sell investment strategy outperformed the actual fund by 1.56%
- With both Value Averaging and Dollar Cost Averaging the investor reached the $100,000 retirement target, however VA still beat DCA by 4.05%. and DCA failed to beat the fund.




You would be building a position as the fund was rising gradually

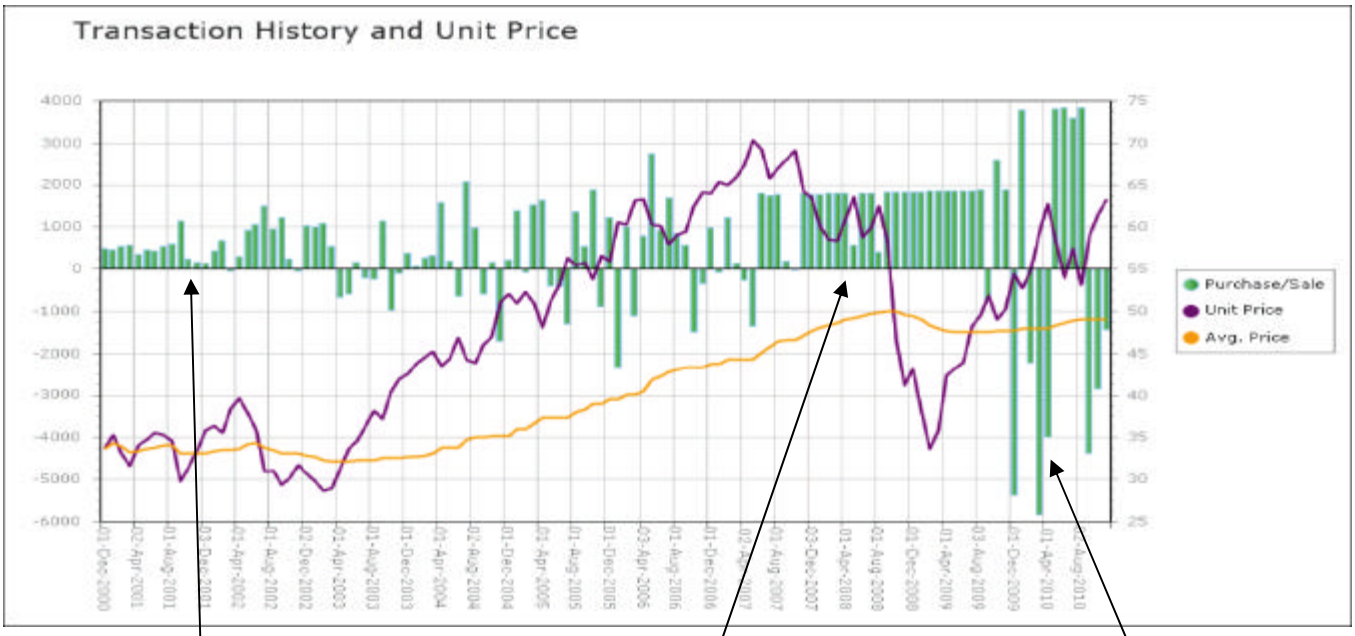
You would be making larger purchases as the fund price was falling and the portfolio fell below its target value.

There would be no selling as the fund price rises and no buying as the fund is above its target value.



## 10 YEAR ANALYSIS

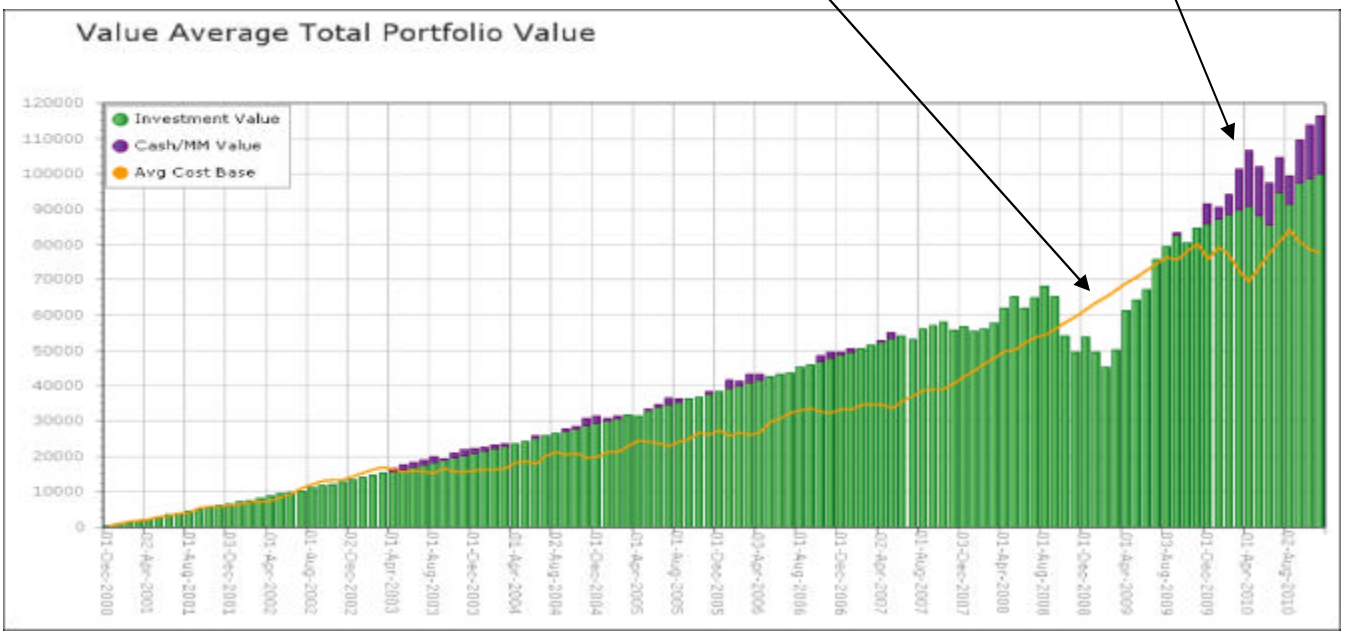
Using **iShares S & P Small Cap 600** (Symbol: **IJR**) ETF, over a ten year time period the results are just as consistent.




You would be building a position as the fund was rising gradually

You would be making larger purchases as the fund price was falling and the portfolio fell below its target value.

You would be selling as the fund started to rise and building a cash position.



| Value Averaging Portfolio | | | Dollar Cost Averaging Portfolio |
|---|---|---|---|
| Adjusted Cost Base | $77,579 | | $66,903 |
| Current value | $100,000 | | $91,435 |
| Cash in portfolio | $16,570 | | $0.00 |
| Final Portfolio Value | $116,570 | | $91,435 |
| Total return | 121.22% | | 86.49% |
| Annualized Return* | 8.34% | | 6.49% |
| Average cost per share | $49.12 | | $46.32 |
| Time frame: Oct 1 2000 to Oct. 31 2010 | | | |

* Dollar weighted

From the above results:

- The Value Averaging strategy outperformed the Dollar Cost Averaging strategy and the investor ended up with $16,570 (16.5%) more capital than his required savings target.
- The Value Averaging strategy outperformed Dollar Cost Averaging by $25,135 or 27.4%
- With Dollar Cost Averaging the investor failed to reach the $100,000 retirement target with a shortfall of $8,565 or 8.5%
- For the 10yr period ending October 31 2010 the iShares S&P Small Cap 600 ETF had an actual annualized return of 6.42%.
- The Value Averaging investment strategy outperformed the actual fund by 1.92%

## SUMMARY / CONCLUSIONS

Results strongly suggest, believe it or not, that value averaging does actually provide a performance advantage over dollar-cost averaging, without incurring additional risk. While this paper only illustrates four securities, we have tested the VA method with many different securities and the results have consistently demonstrated that VA outperforms.

Value Averaging works better than DCA in almost all market conditions but the benefits are really accentuated in a more volatile market. For a fund/stock with very little volatility, VA will still work better but the benefits may not be as great. As might be expected from a technique that does outperform, the higher the price variability and the longer the investment time horizon the better. the result. Each gives value averaging the time and the opportunity to work its "magic".

Given that the VA method invests a range of money from a minimum to a maximum every month, it is likely that an investor could get under exposed in the market. For example, this could happen when lesser amounts are invested in a sustained bull run in the market. In such a situation, VA will still outperform DCA with respect to the rate of return, but the overall dollar gain might be lower.

The back-testing was done with a set (capped) maximum investment amount every month. The results could differ if an investor chooses to invest without any such maximum (based purely on the VA formula outcome). Investment returns can also be enhanced further by adjusting the parameters of the analysis tool.

Irrespective of the stock market direction, if your investment is in a sound fund, VA will increase your returns beyond simple DCA for the same time period. And it does so at a lower level of risk.

Regardless of what method you end up using, the key to better investing is discipline. If you have discipline, you will be better off than the majority of the investors in the stock market.

Value Averaging is a simple but promising method of investment that savvy investors can chose to adopt as part of a well-rounded financial plan. We believe that it is a strategy that works well regardless of the economic times and it allows investors to feel comfortable knowing that there is a high probability that their capital accumulation needs will be met. While past out-performance is no guarantee of future out-performance, investors and financial advisors should consider implementing the Value Averaging strategy since the probability of achieving the target value for a portfolio is very high and hence ideal for financial / retirement planning. Stock brokerage firms would also benefit from this technique enabling them to offer a research based "sell" as well as their plentiful "buy" signals.

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## About VA Investment Software

VA Investment Software develops web-based applications for the financial services industry. Bruce Ramsey, co-founder, has over 15 years experience in developing financial software ranging from financial planning, stock and mutual fund databases and portfolio management systems.

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For detailed analysis reports as well as a more theoretical review of the two strategies and examples of how they compare under different market conditions, you can refer to the research section at www.valueaveraging.ca