The Value of Buying Low: The Numbers

By Gil Hanoch, August 4, 2006

Updated Data February, 2011

This article provides a numeric analysis of the financial benefits of buying after a decline in your diversified portfolio.

Stocks tend to go up and down in values in a cyclical way. The cycles vary in length and magnitude and have no predictable pattern, so you cannot predict the near-term future based on the recent past. The one thing you can say is: if I must make my best bet on the future change, it would be a reversion to the long-term average.

For the portfolio Long-Term Component by QAM, the 41-year simulated returns were 17.2% per year. This means that if your portfolio recently declined by 20%, your best bet of the future growth would be:

1. Recover losses: 25% (the percentage gains needed to recover from the 20% decline) +
2. Recover long-term average during decline: 17.2% x years of decline +
3. Continue long-term average: 17.2% per year

This may sound absolutely impossible. In fact, during severe declines, many people say: “It seems impossible for the portfolio to recover the whole decline and grow so much to make up for this period, all during my lifetime”. Let’s look at the two worst declines in measured history for Long-Term Component by QAM.

Decline/Slow years	**1973-1974**	**2000-2002**
Number of years	2	3
Total decline	39%	12%

The following table presents the two components of excess returns needed to recover the full decline.

Decline/Slow years	**1973-1974**	**2000-2002**
Recover losses[1]	64%	13%
Recover long-term average during decline[2]	37%	61%
Total extra gains needed[3]	**125%**	**82%**

[1] Calculated as 1/(1-decline percentage)-1, e.g., 1/(1-0.39)-1 = 0.64

[2] Compounding the long-term growth over the number of decline years

[3] Compounding the two rows above

125% and 82% excess returns beyond 17.2% per year where needed to make up for the whole decline period and keep the long-term growth the same as the long-term average. Let's see if this was ever accomplished:

Decline/Slow years	1973-1974	2000-2002
Years it took to recover the long-term average	4	4 [1]
Average during recovery period	44%	35%
Expected total growth based on long-term average	89%	89%
Actual total growth	332%	235%

[1] After this number of years, the portfolio reached an average within 0.4% of the long-term average - 16.8% average for the 7 years including the full recession.

As you can see, the worst recorded recession for this portfolio (1973-1974[1]) was fully recovered and fully reached the long-term average, including the recession period, within 4 years. During these 4 years, the simulated portfolio provided an excess return beyond the 17.2% annual growth. The average growth of 17.2 would have resulted in $1,000,000 growing to $1,890,000. Instead, the simulated growth of $1,000,000 was $4,320,000, **multiplying the portfolio by 4 in 4 years**.

Caution:

1. The discussion above is related to the specific portfolio "Long-Term Component" by QAM and is based on simulated historic returns. The results can be applied to other portfolios under the following conditions: they are highly diversified, left unchanged without any type of analysis or predictions. Changes must be limited to rebalancing in order to bring the accounts in line with the intended portfolio allocation.
2. You should keep money outside the stock market (in cash or low risk bonds), to provide for your living expenses during significant recessions. This amount should be planned in advance, specified in a written investment plan, and kept regardless of the market conditions. Only money that is available beyond these reserves should be added to the stock portfolio during declines.

To Summarize

Adding money to investment portfolios after declines can be financially rewarding. Adding money at the bottom of severe declines can completely transform your financial state. The evidence for this is a reason to make sure to add all excess money, beyond your cash reserves, during declines.

[1] The 2008 decline was worse, but was too recent for tracking its long-term effects. Given that it was very limited in time and nearly recovered by the end of 2010, you can anticipate results consistent with the 1970's decline.