

Landmark Asset Management Investor Notes

Topic: Underwater Equity Curve Study

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The True Risks of Trading as Defined by the Underwater Equity Curve

There are a number of ways to measure the risks associated with an investment. One of the risk evaluation tools used by Landmark Asset Management is the Underwater Equity Curve. This issue of *Investor Notes* will serve to quantify the historic risks of trading various indices.

Beginning with the basics, an equity curve is a graphical representation of trading performance over time. The equity growth chart (Chart 1) represents the growth of a fictitious \$1,000 investment made in the Dow Jones Industrial Average over 18+ years. Points A – D represent sharp and prolonged periods of drawdown. The limitation with most equity curve charts is that they lead investors to focus entirely on profit potential.

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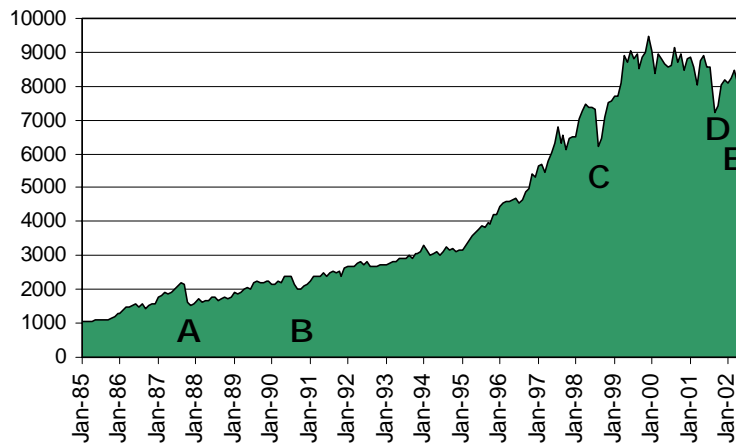
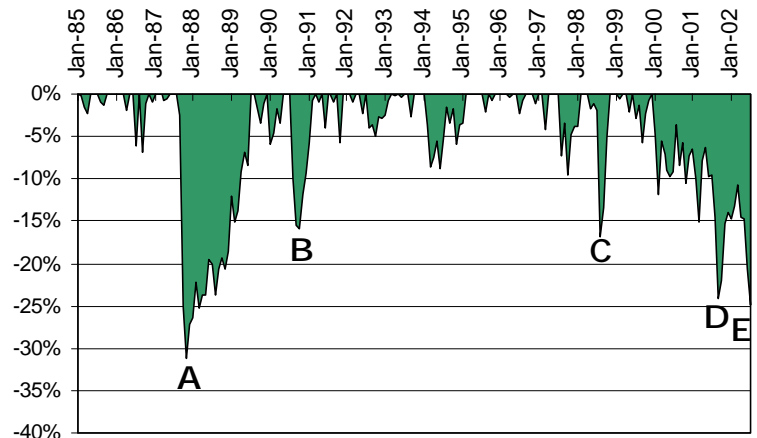


Chart 1
Equity Growth Chart:
Dow Jones Industrial Average
January 1985 - August 2002

A: Oct. 87 - Black Monday
B: Aug. 91 - Gulf War
C: Aug. 98 - Russian Default
D: Sep. 01 - Terrorist Attacks
E: Jul. 02 - Enron/WorldCom

Chart 2
Underwater Equity Curve:
Dow Jones Industrial Average
January 1985 - August 2002

A: Oct. 87 - 31%
B: Aug. 91 - 16%
C: Aug. 98 - 17%
D: Sep. 01 - 24%
E: Jul. 02 - 25% (... and growing)



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The underwater equity curve (Chart 2) analyzes a different aspect of performance. This equity curve plots the downside risk exposure experienced by an investor trading in the major indices over time. Unlike most equity curves, the underwater equity curve centers exclusively on equity drawdown. Points A – D present periods of drawdown in the Dow Jones. These same points were used in Chart 1 but they become much more pronounced when illustrated in an underwater equity curve Chart 2. This unique perspective allows investors to view trading performance from a risk exposure point of view. This ensures that the investor is properly prepared to follow the index through good and bad times. Every index and trading program experiences periods of poor performance. The underwater equity curve simply focuses on the magnitude and duration of each drawdown, or sell off from peak levels, experienced by the investment.

PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.

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The underwater equity curve is constructed using monthly data. At the end of each month, an investment will either break even, generate a profit or experience a loss. If the investment breaks even there is no effect on the underwater equity curve. If an investment ends the month with a profit greater than any previous month, then a blank space is plotted on the graph signifying the new equity high (without noting the magnitude of the high).

When an investment ends the month with a loss, it experiences a reduction in capital also known as an equity drawdown. The underwater equity curve plots this reduction as the percentage lost from the highest point on the equity curve. The drawdown continues until a new monthly equity high is achieved. This focus on drawdowns is deliberate because it forces an investor to review the indices historical performance from a risk exposure point of view.

The charts below plot the underwater equity curves for several major indices. Chart 3 represents the stock market sector with the Dow Jones and Nasdaq indices. Chart 4 illustrates two other assets classes; bonds (Lehman Bond Index) and managed futures (MAR index). The MAR index represents the cumulative performance of the managed futures industry. The same scale is used for Chart 3 and 4 to draw full attention to the large drawdowns experienced by the Dow Jones and NASDAQ indices.

The MAR index represents the cumulative performance of the managed futures industry.

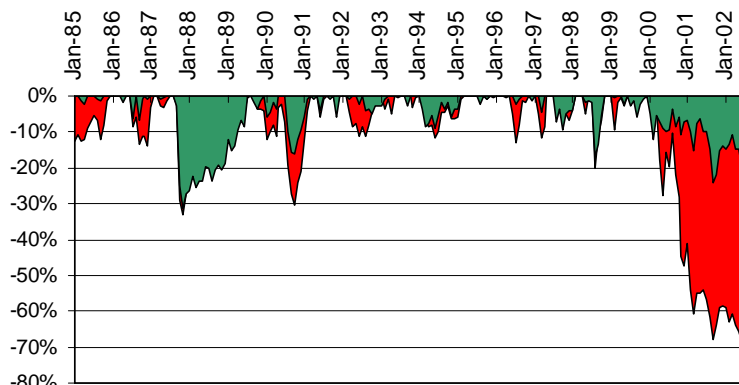


Chart 3
Underwater Equity Curve:
Nasdaq vs. Dow Jones
January 1985 - August 2002

Top Three Separate Drawdowns

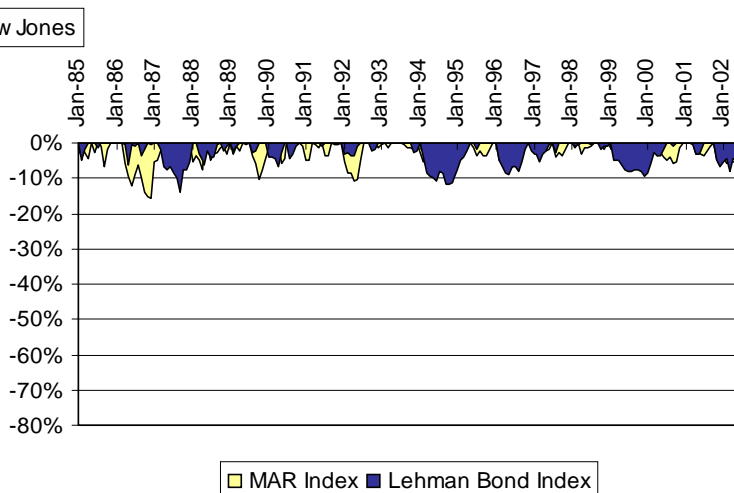
Nasdaq	Dow Jones
1. 72% Jul. 02	31% Nov. 87
2. 33% Nov. 87	25% Jul. 02
3. 30% Oct. 90	17% Aug. 98

Chart 4
Underwater Equity Curve:
MAR vs. Lehman Bond
January 1985 - August 2002

Top Three Separate Drawdowns

MAR	Lehman Bond
1. 16% Dec. 86	14% Sep. 87
2. 11% Apr. 92	12% Oct. 94
3. 10% Oct. 89	10% Dec. 99

This focus on drawdowns is deliberate because it forces an investor to review the indices historical performance from a risk exposure point of view.



Notice the substantial historic drawdowns experienced by the stock indices versus the bond and managed futures indices. The top three drawdowns experienced by the two stock indices exceed the largest drawdowns for either the Lehman Bond or MAR indices. Measuring risk with the underwater equity curve allows investors to clearly note the risk associated with a particular investment.