Managing the downside risk of portfolio diversification

We live in an unpredictable world – a lesson that was reinforced by the recent financial crisis. The ability to anticipate events and not repeat our mistake(s) remains an elusive reality. Marius Kilian, Head: Wealth Management ponders the question "Can we predict the future?"

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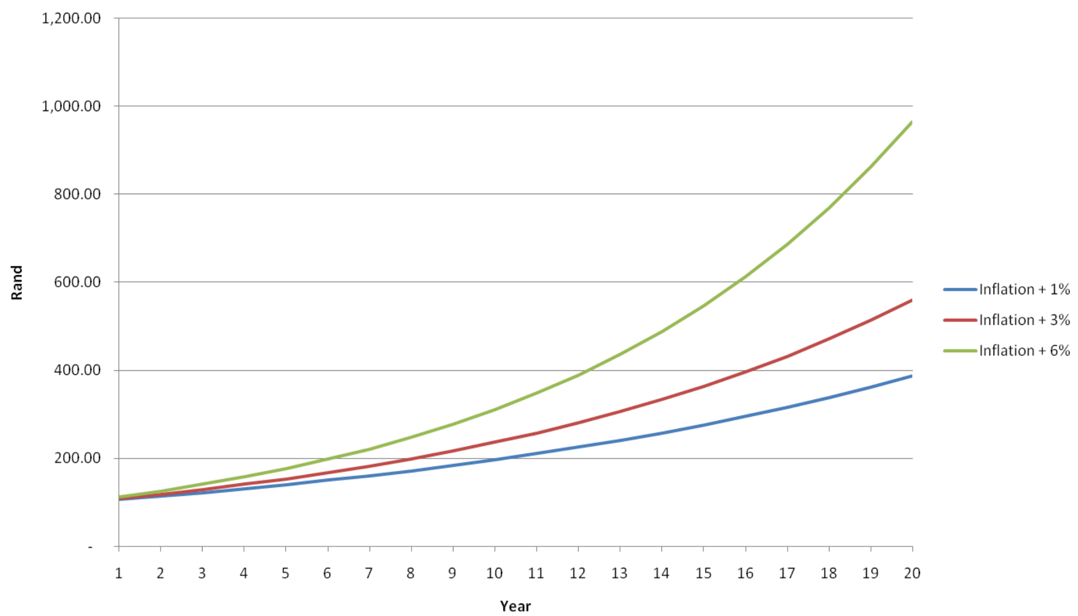
Unfortunately we forget Black Swans - those unpredictable events that should theoretically only occur once in a blue moon but actually seem to be happening with disturbing and increasing frequency. These events have a massive negative impact on investment returns. With hindsight however, under the spotlight of critical evaluation, they appear less random and more predictable.

As James Montier observes: 'O*nce we know the outcome we tend to think we knew it all the time.'* After the fact, rationalisation makes events seem much more predictable than they were as they happened. It is inherent in the human condition that we believe we will be aware of history in the making.

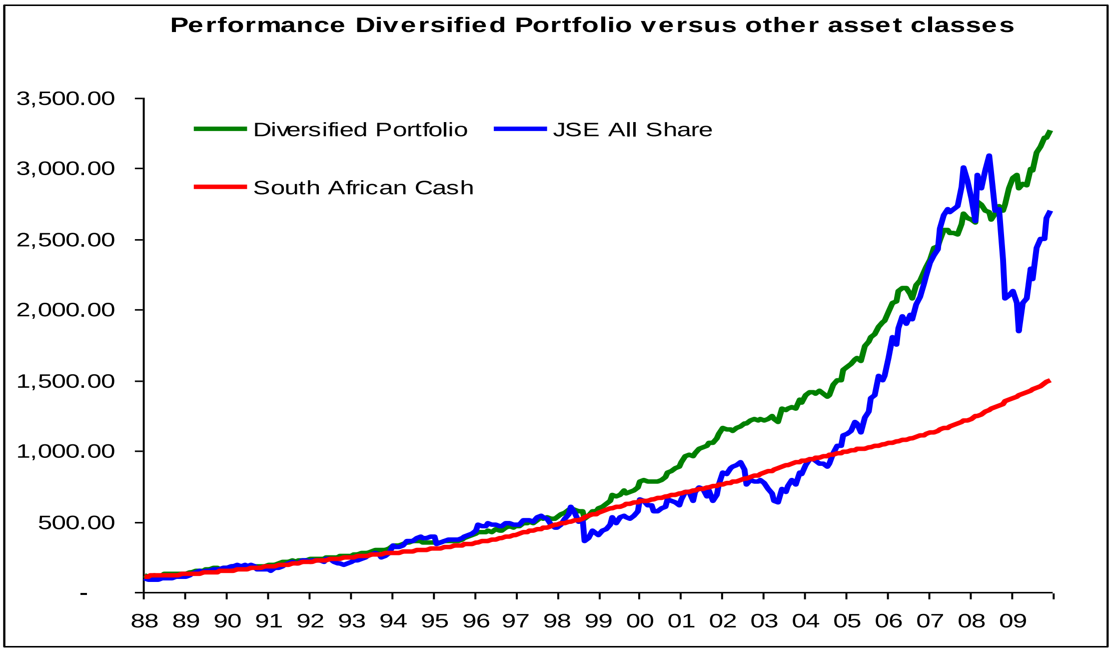
A common mistake is to think of investment returns in a predetermined way as illustrated in the graph below. We expect an investment portfolio to dutifully provide positive returns, increasing in value over our investment horizon.



History has taught us that returns are in fact surprisingly random and lumpy in nature. This is especially true where the required rate of return exceeds cash returns which represent the 'risk-free rate' of return. The higher the expected rate of return, the more volatility (uncertainty) will be experienced and the less predictable the outcome will be.

We tend to focus so much on the return side of the portfolio that we do not fully appreciate and understand the RISK (*the uninvited guest always along for the ride*) inherent in achieving those returns. High risk does not necessarily translate into high reward – it just means that there would be a high variability in the outcome (good or bad).

In the next graph we demonstrate this principle by comparing the JSE All Share index with cash and a diversified portfolio. The diversified portfolio assumes an equal weighting for the five major asset classes (i.e. cash, bonds, equities, properties and alternatives). The portfolio was rebalanced over the investment period to reflect this equal weighting.



Asset diversification appears to be the most consistent performer, based on this analysis. The diversified portfolio achieved the return at a far lower volatility than the equity market. We find in general that investors seem to prefer exciting investment portfolios and assume they need more risk than is required to achieve their investment objective.

The next graph shows that the diversified portfolio achieved the return at nearly one third of the market's volatility (risk). The greater the volatility, the less predictable the return. The major contributor for the out performance is in the 'largest 12 month loss'- number:

- -3.83% for the diversified portfolio
- -37,59% for the equity market.

Statistical Data

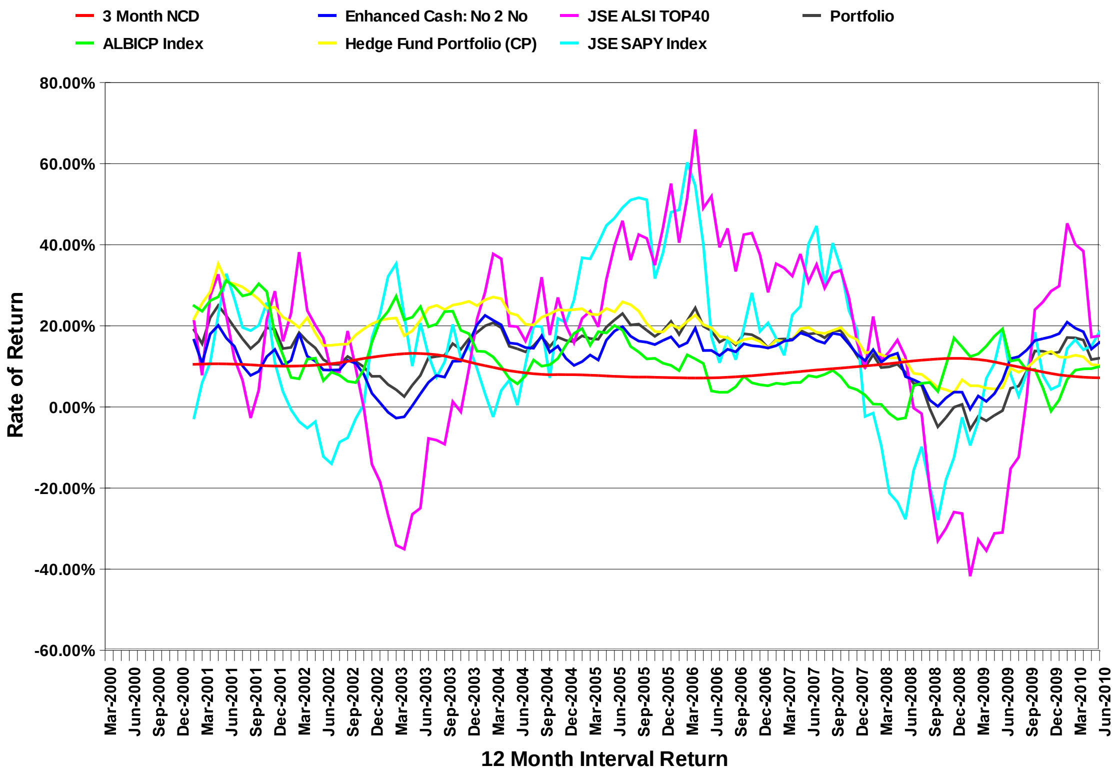
	Diversified Portfolio	JSE All Share	South African Cash
% positive months	71.07%	61.43%	100.00%
Total return	3336.97%	2775.43%	1454.34%
Annualised Return	16.31%	15.42%	12.43%
Annualised Volatility	7.47%	21.01%	1.13%
Return / volatility	2.18	0.73	11.02
Largest 12 month loss	-3.83%	-37.59%	5.92%
Largest monthly loss	-9.22%	-29.71%	0.45%
in the month of	*Aug-98*	*Aug-98*	*Jun-05*
Largest monthly gain	8.54%	17.76%	1.77%
in the month of	*Dec-93*	*Dec-93*	*Jan-90*

Investors underestimate the power of compounding on their returns over the long term. Compounding will either work for you or against you and is exponential in nature. A diversified portfolio does not exhibit the large negative periods of an equity only investment.

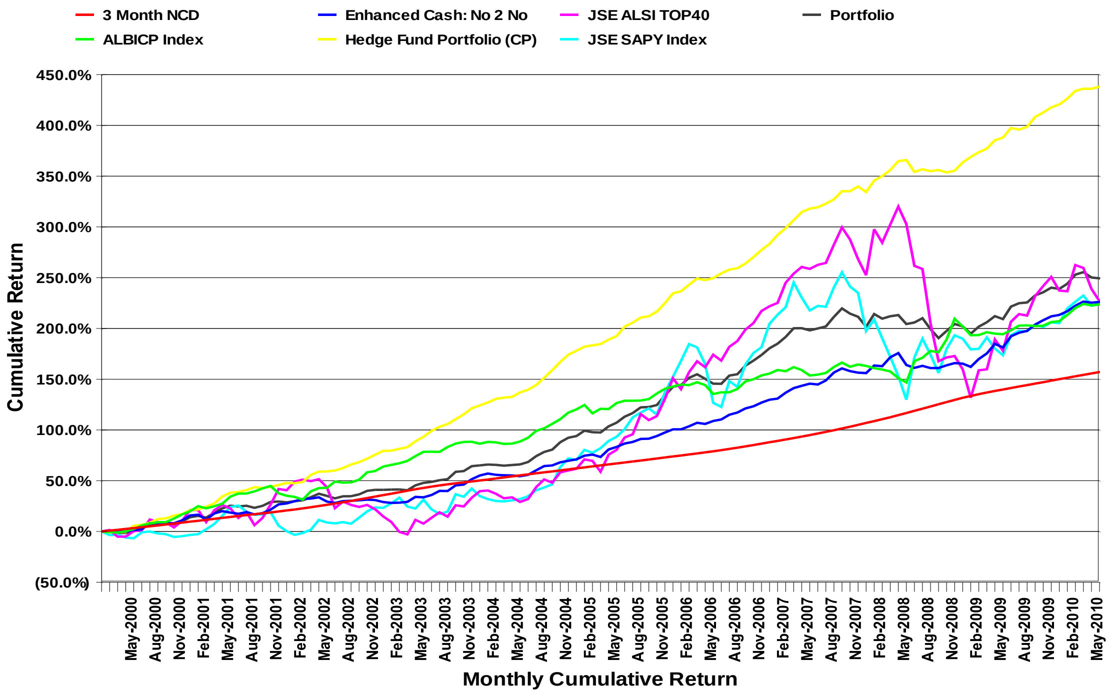
Cash is considered to be a 'risk-free' investment. This begs the question: risk-free from what? It is clear from the performance graph that cash cannot be your long term investment strategy even before the effects of tax and inflation are factored in.

According to Scott Frush the author of *Understanding Asset Allocation*, volatility impacts total performance. Portfolios with more volatility will exhibit lower long-term compounded growth rates. It is essential to minimise volatility in your portfolio for maximum appreciation over time.

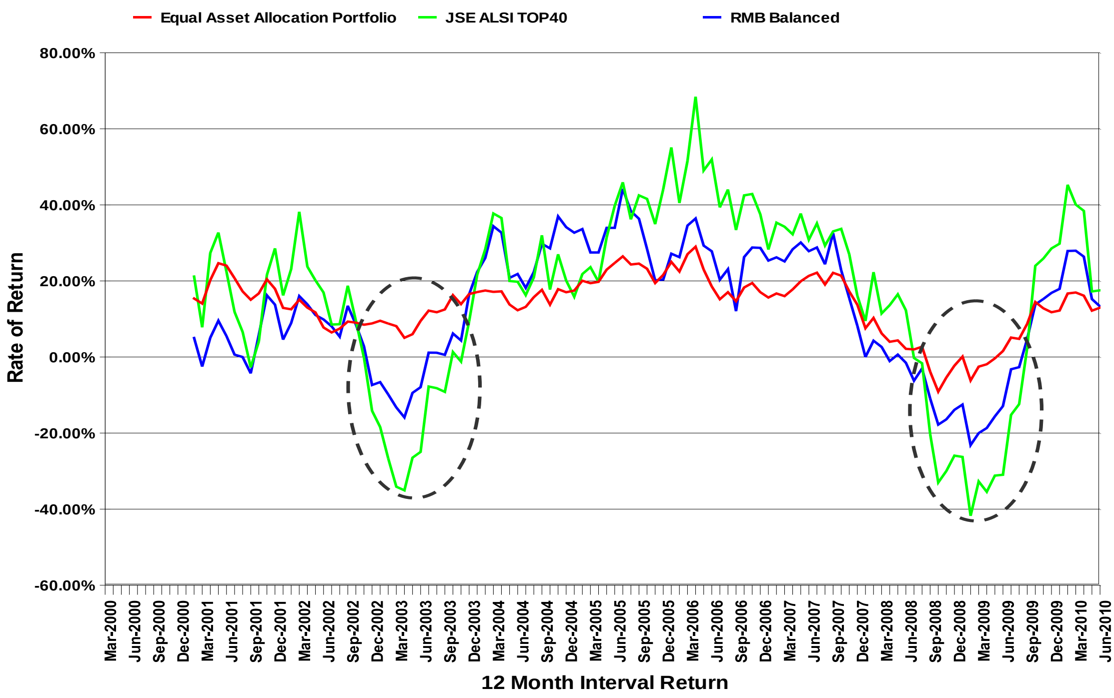
The next graph demonstrates the importance of positive compounding on your investment over the long term. The listed equities and the property index are clearly the more exciting asset classes. Again, the equal weighted portfolio 'plodded' along in the middle of the return range – the boring alternative. The rate of return represents the 12 month rolling returns for the various asset classes.



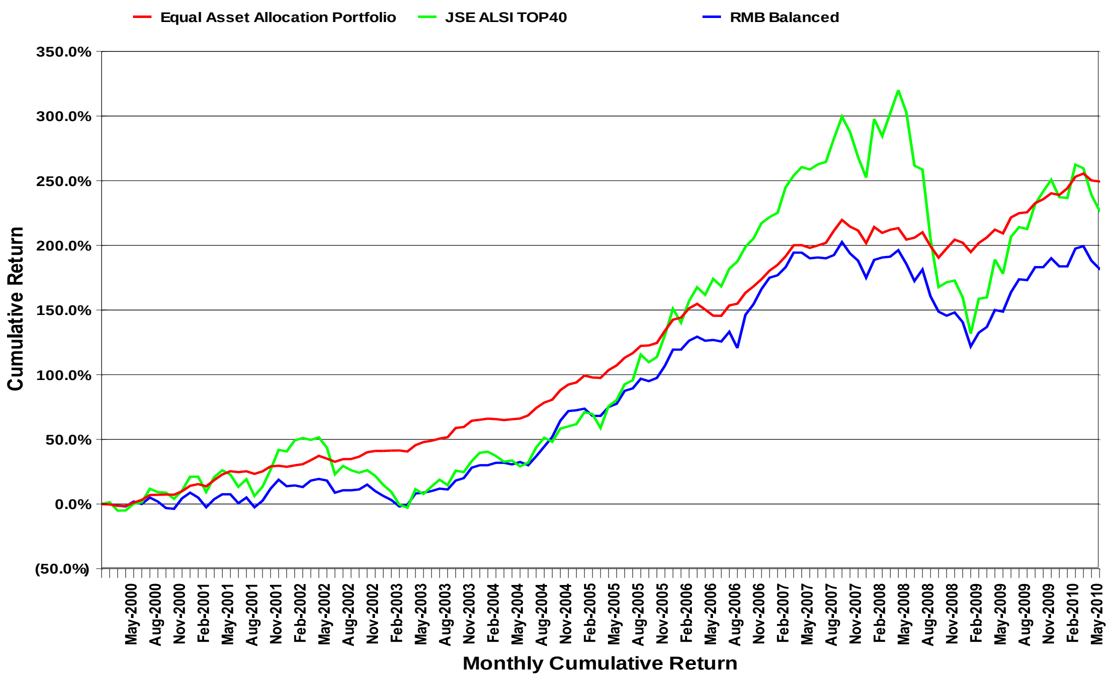
When we look at the cumulative effect of the return over the long term it is quite surprising to find that the diversified portfolio has outperformed both equities and properties. This was achieved at a far lower volatility (risk).



As children we are taught the story of the race between the tortoise and the hare and the inevitable outcome. Most investors would actually be better off following the less exciting tortoise strategy, because it seems to win the race in time. But we seem to be behaviourally unable to stick to this conviction and discipline. Consider the next graph where we compare the equal weighted multi asset portfolio with the JSE ALSI Top 40 and a local balanced fund. Over the period of 10 years there are only two periods where the diversified portfolio does not under perform equities based on the annual rate of return. For any average investor this would probably be too difficult to endure.

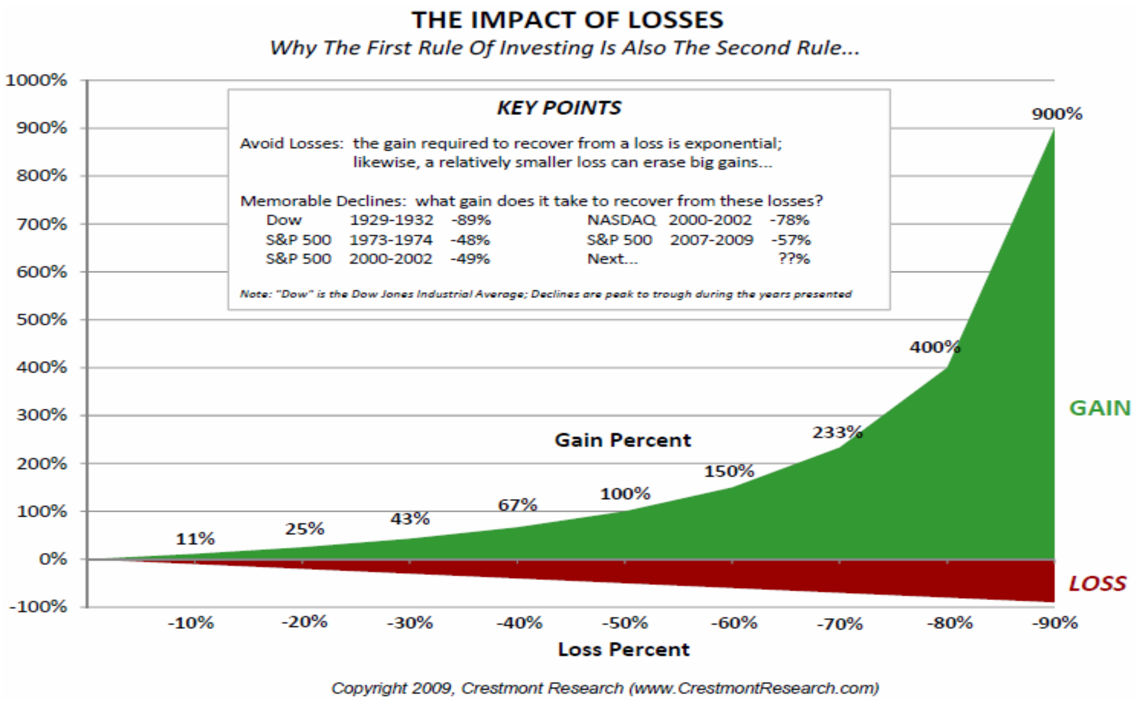


However, if we consider the cumulative effect of the return over time you will find that the boring alternative is usually the most viable option in the long term. A good return was generated at a far lower level of volatility. This clearly demonstrates the effect of negative returns on a portfolio over time. The effect of negative returns is asymmetrical compared to positive returns when compounded over the time.



The benefit of spreading your exposure over more than one asset class lies not in the sum of the parts, but rather the sum of its synergies. This is based on the fact that they are not highly correlated to each other, which benefits your portfolio because they generally do not perform in the same manner through various market cycles. Through diversification we seek to minimise the risk of a portfolio while asset allocation focuses on maximising the risk-adjusted returns.

One of the most common mistakes that investors make is to focus more on the probability of an outcome as opposed to the impact of the outcome. We focus so much on the upside that we do not plan enough for the downside. The following graph explains the asymmetrical nature of the downside.



much how low the odds are that circumstances would turn negative, what matters more is what the consequences would be if that happens'.

Nassim Taleb describes this concept eloquently in his book *Fooled by Randomness*: *'If you engaged in a Russian roulette type strategy with a low probability of large losses every several years, you are likely to show up as a winner in almost all examples - except in the year when you are dead'"*

The graph below demonstrates the impact of these negative returns on a compounded basis. Investors cannot spend simple returns, only the real returns that are provided by compounding over time.

Simple Average Return vs Compounded Return

	CASE A	CASE B	CASE C	CASE D	CASE E	CASE F
Year 1	5.0%	4.0%	9.0%	15.0%	25.0%	30.0%
Year 2	5.0%	5.0%	5.0%	-10.0%	-15.0%	-25.0%
Year 3	5.0%	6.0%	1.0%	10.0%	5.0%	10.0%
Simple Avg. Return	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%
Compounded Return	**5.000%**	**4.997%**	**4.949%**	**4.419%**	**3.714%**	**2.361%**
	R115.76	R115.75	R115.59	R113.85	R111.56	R107.25

*Compounded growth on R100 invested

Crestmont Research

Research in the field of behavioural finance has shown that we experience negative news 2,5 times more intensely than positive news. The pleasure that we experience from positive performance is not equivalent to the amount of pain we suffer when performance is negative. Most investors seek excitement from their investment portfolio but do not have the ability to stomach the downturns. Ultimately this results in poor long term performance due to the resultant emotional short term decision making.

'Since 1984, Dalbar has been measuring the effects of investor decisions to buy, sell and switch into and out of mutual funds (unit trusts). The conclusion has always been the same:

- *Returns are far more dependent on investor behavior than on fund performance.*
- *Fund investors who hold their investments are more successful than those that time the market.'*

In a recent study, Dalbar found that investors do not get the same performance over time that is observed by the mutual funds or the market indices. The average return for the S&P 500 for the period from 1987 to 2007 measured 11,81%. The average equity investor observed only 4,48% over that same period. It was found that investors were more likely to correctly guess the market's direction when it's rising, and to make mistakes after downturns. As discussed the downturns are the most destructive. People change their risk tolerance in reaction to, rather than in anticipation of, market movements. Risk tolerance is essentially a lagged response.

James Montier suggests in *The Little Book of Behavioral Investing* that the need to focus on the process rather than on the outcomes is critical in investing. In investing, the outcomes are highly unstable because they involve the integral of time.

'The management of return is impossible, the management of risk is illusionary, but the process is the one thing we can exert influence over.'

We believe that asset allocation is the most important decision in the portfolio construction process. Asset allocation is the major determinant of the risk and return for any given portfolio. A solid portfolio should focus on managing downside risk to ensure that the power of positive compounding adds to your wealth over time.