

What investors want: Quantifying the feel-good factor of risk-managed beta

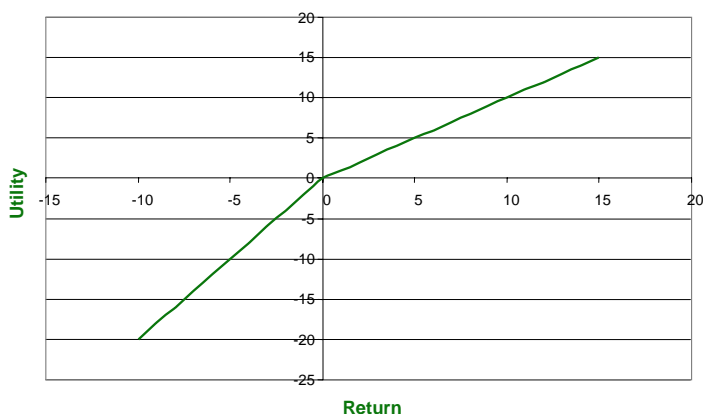
Investor behaviour and behavioural theory have shown that investors are painfully averse to experiencing losses in the financial markets – so much so that they feel at least twice as much pain from a loss than the pleasure they would feel from the equivalent gain.

In the late seventies, Prospect Theory made significant breakthroughs in determining how investors actually make decisions when faced with the prospect of incurring losses or when confronted with financial market risks. Over the past few decades further work has been done in developing and fine tuning this theory, initially developed by Daniel Kahneman and Amos Tversky in 1979. The key findings are that instead of basing decisions on the levels of their final wealth, investors instead tend to focus on the gains and losses they could make along the way. They also exhibit a strong degree of loss aversion, as described above and illustrated in the graph below, and that makes them more likely to sell quickly if they have earned profits and less likely to sell if they are running losses.



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An Investor's Utility



The investment business has since specifically catered for the behaviour revealed in Prospect Theory, developing funds with asymmetric return profiles, namely products that limit the downside while still capturing some of the upside. These funds, broadly known as absolute return funds and structured funds, offer different degrees of capital protection and generally aim to deliver consistent, positive real returns – an investment objective we refer to as risk-managed beta.

What is currently in vogue is to pay for alpha and not beta, with investors regularly advised to build a portfolio that has core portion managed by a passive manager and to surround this with various satellite funds that deliver alpha. However, alpha is rare, expensive and often unreliable. And, though products that offer beta may be cheap, they are also much more risky, with the investor participating fully in market volatility. Thus we would recommend the investor pay less attention to achieving elusive alpha and rather focus on protecting beta.

In the following example we use a “utility function” to measure investor satisfaction. It shows an investor can be potentially more satisfied with a product that aims to deliver asymmetric returns (risk-managed beta) than if they had been invested in a product delivering alpha or one that tracked the markets, offering beta – even if the latter two funds ultimately delivered better returns during the period.

In the example, we have looked at the 18 month period between January 2003 and June 2004. This period covers both bear and bull market cycles. We show three return profiles: a manager delivering alpha; beta (the market); and a manager providing risk-managed beta. What is notable in the risk-managed beta profile is that the fund does not participate fully in the downside experienced by the beta portfolio nor does it participate fully in the upside.

Investor Utility

	ACTUAL MONTHLY RETURNS			UTILITY		
	Alpha*	Risk-managed beta**	Beta***	Alpha*	Risk-managed beta***	Beta***
Jan-03	1.5	-1.8	-5.0	1.5	-3.7	-9.9
Feb-03	1.0	-1.5	-4.3	1.0	-3.0	-8.6
Mar-03	0.3	-1.9	-7.9	0.3	-3.8	-15.9
Apr-03	1.5	1.7	-1.7	1.5	1.7	-3.3
May-03	-3.3	3.8	14.1	-6.6	3.8	14.1
Jun-03	3.7	-0.1	-2.2	3.7	-0.1	-4.4
Jul-03	-0.5	1.4	5.7	-0.9	1.4	5.7
Aug-03	-0.6	0.7	5.1	-1.3	0.7	5.1
Sep-03	2.4	-0.3	-2.9	2.4	-0.5	-5.7
Oct-03	-0.1	4.3	9.8	-0.1	4.3	9.8
Nov-03	2.9	0.6	-0.2	2.9	0.6	-0.5
Dec-03	-0.4	3.1	6.9	-0.8	3.1	6.9
Jan-04	-1.6	2.2	4.6	-3.2	2.2	4.6
Feb-04	0.5	-0.2	0.5	0.5	-0.3	0.5
Mar-04	1.5	0.3	-1.4	1.5	0.3	-2.8
Apr-04	1.7	-0.5	-2.4	1.7	-1.1	-4.7
May-04	-1.4	0.1	0.3	-2.8	0.1	0.3
Jun-04	4.0	0.2	-2.7	4.0	0.2	-5.4
Total	13.6%	12.6%	14.7%	5.3%	6.0%	-14.3%

Utility Function:

$U(x) = x$ if $x \geq 0$

$U(x) = 2x$ if $x < 0$

Where x is the monthly return

Source: S&P Fund Services and Old Mutual Investment Group SA

* Old Mutual Top Companies Funds' excess returns over FTSE/JSE All Share, ** Old Mutual Dynamic Floor Fund, ***FTSE/JSE All Share Index

Based on the different value the investor attaches to positive and negative returns, as spelt out in Prospect Theory, we have calculated what the utility of an investor would be on a month by month basis over the period dealt with in the example and for the different investment strategies. According to the theory, the investor experience of a loss is twice that of an equivalent positive return. Thus, in the example, in March 2003 when the beta portfolio declined 8%, the investor would have "experienced" a 16% loss in terms of the theory. But in May 2003, the investor, who made 14% in the beta portfolio, would have experienced a 14% experiential gain.

In the example, the investor ends up having the most positive utility or experience in the risk-managed beta fund, better than his experience in both the alpha-generating fund and the beta fund. This is despite the fact that over the 18 month period the investor in the risk-managed beta fund achieves the lowest return of the three portfolios (13% versus the 14% delivered by the beta fund and 15% by the alpha fund). In fact, the investor's experience in the beta fund is strongly (-14%) negative even though it achieved the highest return over the period.

This potentially better experience for some investors, who are more comfortable avoiding the losses incurred during market cycles than participating in the ups and downs but ultimately ending up with a positive return, explains why they are willing to pay a premium to investment managers for products that aim to protect their capital from any possible downside.

Over time, fund managers have found more sophisticated ways of delivering risk-managed beta than before and the cost of the protection used in managing the funds has also come down – increasing the efficiency of providing risk-managed beta to investors (see box).

In conclusion, we ask:

- Shouldn't investors spend more time managing their beta, rather than chasing alpha and;
- Is their portfolio being protected in the most efficient way?

Getting the best value out of hedging mechanisms

A simple way to insure your portfolio is to buy protective put options from a bank. These options will pay out if the market falls, so that the losses from beta are offset by the gains from hedging. And if the market goes up, you get the positive beta and lose the option premium. The resulting return profile on your total portfolio will be a better fit for your investment objectives: it will increase your utility compared to an unhedged portfolio, even taking into account the option premium.

The ways to add value in using options to hedge a portfolio could be:

- Choosing the right combination of term and strike to best match the payoff profile with the investment need.
- Fitting an optimal hedge to the portfolio by limiting tracking error.
- Trying to reduce the option premium spend by selling out-of-the money puts or calls (e.g. in a 'collar' or 'fence' strategy).

Of course, the banks selling these options build in a margin to provide for the risk they are taking, as well as to provide profits for their shareholders! So a way to cheapen the cost of insuring a portfolio is to use dynamic hedging rather than bought options.

Dynamic hedging is a strategy of providing capital protection by cutting risk when the portfolio is falling, and increasing risk when it is rising. Typically this is done by switching between risky assets (e.g. equities) and risk-free assets (e.g. cash). In the event of an extended bear market, the portfolio could even switch entirely into cash to make sure that capital is fully protected.

The return profile of a dynamic hedging strategy is similar to that of an option-based hedging strategy. Market losses are hedged out (by switching into cash) but the portfolio benefits from positive beta by switching into equities.

The difference in the two strategies is that the dynamic hedger pays the cost of realised (actual) market volatility, whereas the option buyer pays the cost of implied (bank price) volatility. Research by Peregrine Securities over the 10 years from 1996 to 2006 indicates that there was a cost saving of at least 3% a year by hedging with realised volatility instead of implied volatility. Although there were periods where realised volatility was higher than implied (and dynamic hedging would underperform), over the longer term the cost saving has been substantial and would have materially increased investor returns. This shouldn't be a surprise, as the banks selling at (higher) implied volatility are not running charities, and would expect to make profits while providing investors with products. It is by saving some of this margin that the dynamic hedger can add value.

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