QV UPDATE
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QV Investors Inc.

Defensive Investing, by the Numbers

To use a baseball analogy for investing, a high percentage of singles and doubles provides a better result over time than the low probability strategy of swinging for the fences. The few home runs hit may not adequately compensate for the strike outs. In this Update, we provide three numerical illustrations to demonstrate the value of defensive investing.

Gain required to get back to even

What gain is needed to recover from a 50% investment loss? Many are tempted to reflexively answer "+50%" because it is the mirror image. But the correct answer is +100%. For example, if an investor starts with $100 and loses half of it, they are left with only $50. That $50 then needs to double (e.g. 100% return) in order to restore the position back to $100. As illustrated in the table below, it becomes increasingly difficult (and disproportionately so) to recover from bad investment outcomes.

Loss	-10%	-20%	-30%	-40%	-50%
Offsetting Gain	11%	25%	43%	67%	100%
Loss	-60%	-70%	-80%	-90%	-100%
Offsetting Gain	150%	233%	400%	900%	N/A

The mathematics of capital preservation

The Global Financial Crisis (GFC) highlighted the value of defensive investing. The experience of 2008 was unpleasant for equity investors, to say the least, but the experience was softened for investors who emphasized capital preservation. Consider the performance of two hypothetical managers over 2008/2009:

Year	Defensive Partners	Grand Slam Hedge Fund
2008	-20%	-40%
2009	+20%	+40%
Sum of Returns	0%	0%
Total Return	-4%	-16%

Judging by the sum of returns, it appears that the performance of Defensive Partners equaled that of the Grand Slam Hedge Fund, and that both emerged through the crisis unscathed. But a calculation of the total return reveals the truth. If $100 was invested with Defensive Partners on January 1, 2008, it would be worth $96 on December 31, 2009. If invested with Grand Slam, however, it would be worth only $84.

One of the challenges of investing for the long-term is staying invested during the emotionally difficult times, such as the GFC. Behavioural finance studies reveal that people dislike losses twice as much as they value similar sized gains. How many investors would be able to stick it out with Grand Slam after a 40% loss in 2008? Even if they did, they still ended up with a poor result through 2009.

Order of returns can matter

A single lump sum invested over a specified period will accumulate to the same value whether the best returns occur near the beginning, end, or middle of the investment period. On the other hand, many retirees and pension funds must draw down their capital over time in order to draw income or make promised pension payments. The consequence for these investors is that returns in the near future are much more important than returns in the distant future.

In the following table a hypothetical retiree starts with $2 million dollars with a target annual income withdrawal of $80,000 growing at 2% per year. We simulated a random investment return path over 40 years with an average return of 5% per year (Scenario A). We then reversed the order of returns in Scenario B. The results are revealing.

	Scenario A	Scenario B
Starting Assets	$2,000,000	$2,000,000
Investment Earnings	$4,972,500	$3,014,600
Income Withdrawal	$(4,832,200)	$(4,832,200)
Assets after 40 years	$2,140,300	$182,400

In Scenario A, the investor finishes with an additional $2 million dollars because the best returns occurred during the first 20 years. Capital preservation is therefore important for investors needing income, such as retirees, because it is challenging to recover from poor investment outcomes if they occur early in the spend-down period.

Defensive investing is challenging because you're probably hitting doubles when your more risk-seeking friends are hitting home runs. On the other hand, you can't brag about preserving capital to your friends who just lost their shirts. But don't listen to us – it's all in the numbers.