FUNDS ON FRIDAY
by Glacier Research

glacier
by Sanlam

20 May 2022
Volume 1136

No such thing as a free lunch

Authors: Emma Pretorius, Business Development Manager, Amplify Investment Partners

Introduction

One rule that applies to all aspects of life, with investments being no exception, is that there is no such thing as a free lunch. Any investment that promises exceptional returns will no doubt come with greater risk of losing money. Hedge funds provide an example of this.

Hedge funds are not homogenous. They differ in terms of strategy, risk and purpose. Yet, many investors associate the collective term of hedge funds with higher returns and excessive risk-taking or, less affectionately, as the cowboys of the industry. One explanation could be that because hedge funds are generally more expensive than traditional long-only funds, investors want to be compensated through higher returns. Consequently, when considering adding hedge funds to a portfolio, investors tend to be more interested in hedge funds that promise returns greater than those offered by traditional long-only funds. This is completely rational, since it seems only fair that investors are compensated for paying higher fees. Put differently, it’s only natural to want more bang for your buck. However, as previously noted, there is no such thing as a free lunch, and higher returns almost always come with higher volatility.

Hedge funds have more to offer than the promise of great returns. Hedge fund strategies broadly fall into two categories – return enhancers and risk diversifiers. While most investors have only come into contact with the return enhancer, the case for using hedge funds as a risk diversifier needs to be amplified.

Glacier Financial Solutions (Pty) Ltd, I A member of the Sanlam Group | Private Bag X5 I Tyger Valley 7536 I Email: client.services@glacier.co.za | Tel +27 21 917 9002 I Fax +27 21 947 9210 I Web www.glacier.co.za | Reg No 1999/025360/07 I Licensed Financial Services Provider
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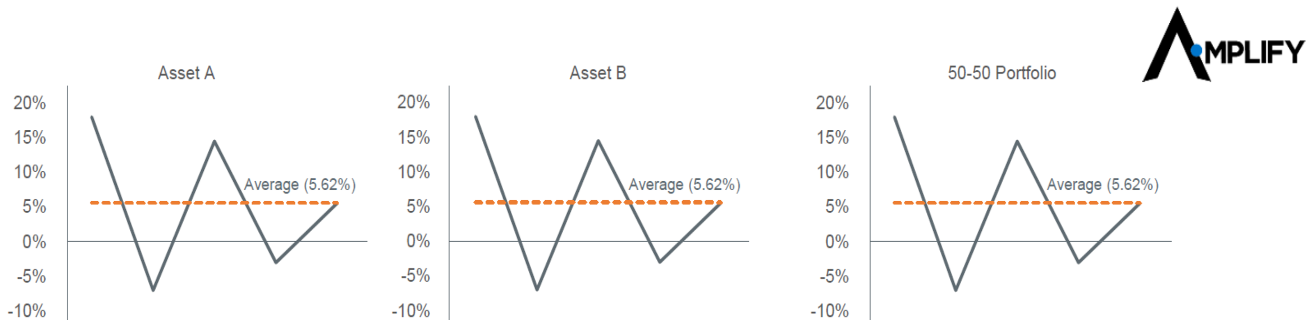
Diversification vs correlation

One term you hear repeatedly in the financial industry is correlation, even more so in the context of hedge funds. You may have heard that hedge funds can help diversify a portfolio by providing uncorrelated returns, but what does correlation really mean and why should we care about it?

We all know that we should not put all of our eggs in one basket but adding various investments to your portfolio that all share the same characteristics won't necessarily diversify your portfolio. You could have 100 different shares in your portfolio, but if they are highly correlated, your portfolio is still not diversified. You could own less shares and be diversified, as long as these shares are affected differently by external risk factors, such as interest rates changes, and consequently move in a unique way. Ideally, you do not want investments that all perform well or poorly at the same time. If you have a properly diversified portfolio, the total risk of the portfolio will be less than the sum of its parts.

The impact of correlation on your portfolio is best illustrated through a practical example. Consider two assets with the same expected return and risk, as measured through volatility, for different levels of correlation. Figure 1 shows the returns of two assets that are perfectly positively correlated, as you can see from the first two graphs, where Asset A and B move in complete tandem. If you were to build an equally weighted portfolio comprised of these two assets, you would get no real diversification benefit since the two assets move together. Your portfolio would achieve the same return as the underlying assets, at the same level of volatility as these two assets, as illustrated by the third graph.

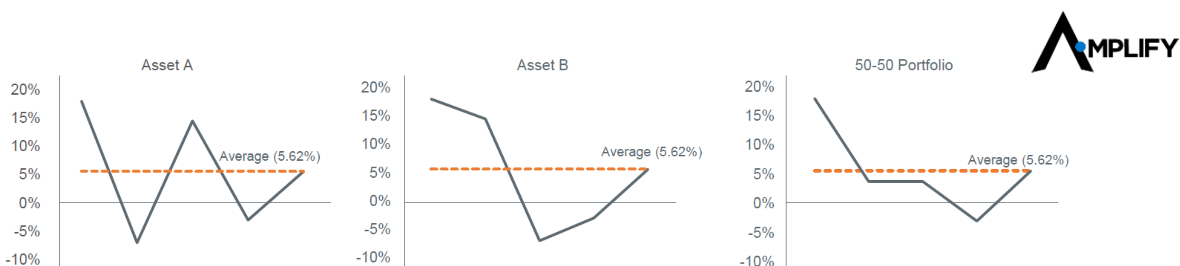
Figure 1: Perfect correlation (+1)



Source: Amplify Investment Partners

Figure 2 shows the returns of two assets that are uncorrelated (correlation of zero) and the returns of an equally weighted portfolio consisting of these two assets. The 50-50 portfolio has the same expected return as the individual assets, but at lower volatility. Because the two assets do not move together, they are able to offset each other, mitigating the large swings experienced by the individual assets.

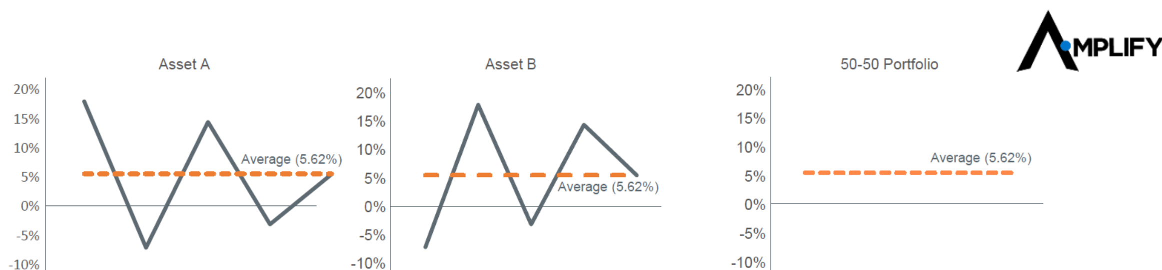
Figure 2: Uncorrelated (0)



Source: Amplify Investment Partners

The third figure shows two assets that are perfectly negatively correlated, and the returns of a 50-50 portfolio comprised of these two assets. The returns of the two assets are a complete mirror image of each other – when the one goes down, the other goes up. The 50-50 portfolio still has the same expected return as that of the underlying assets, but at no risk, as illustrated by the perfectly straight line.

Figure 3: Negative correlation (-1)



Source: Amplify Investment Partners

The table below reflects the risk-return metrics for the three portfolios with varying levels of correlation. The results show that the lower the correlation between the two assets included in the portfolio, the greater the diversification benefits in terms of return per unit of risk taken.

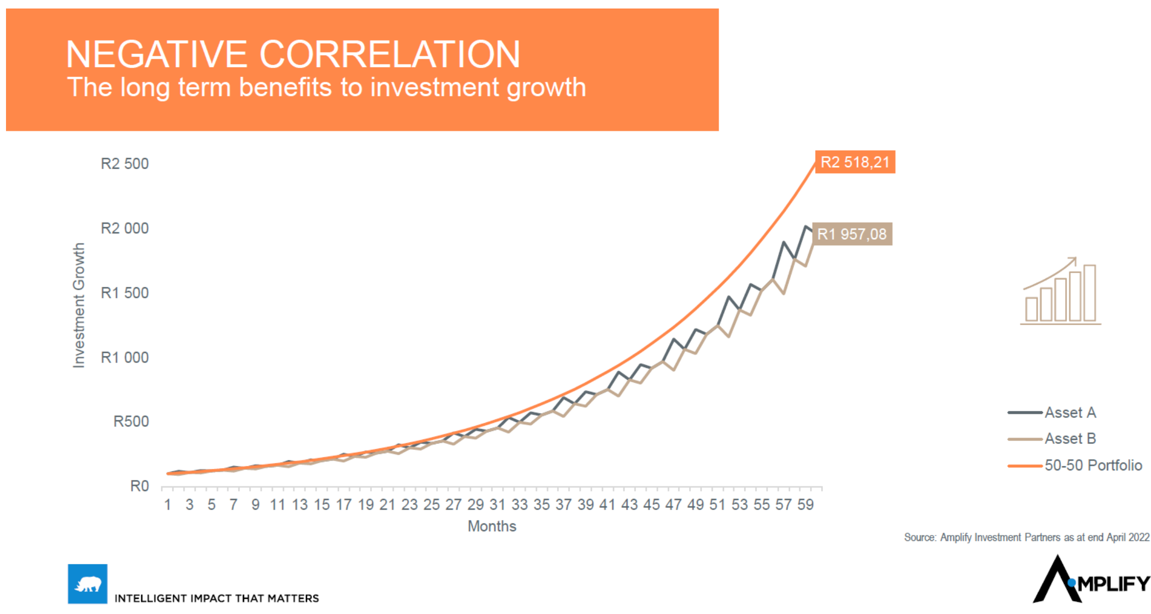
Table 1: Risk analysis

	Asset A	Asset B	Positively correlated portfolio	Uncorrelated portfolio	Negatively correlated portfolio
Correlation			1	0	-1
Mean Return	5,62%	5,62%	5,62%	5,62%	5,62%
Volatility	10,79%	10,79%	10,79%	7,66%	0%
Sharpe Ratio	0,52	0,52	0,52	0,73	Infinity

Source: Amplify Investment Partners

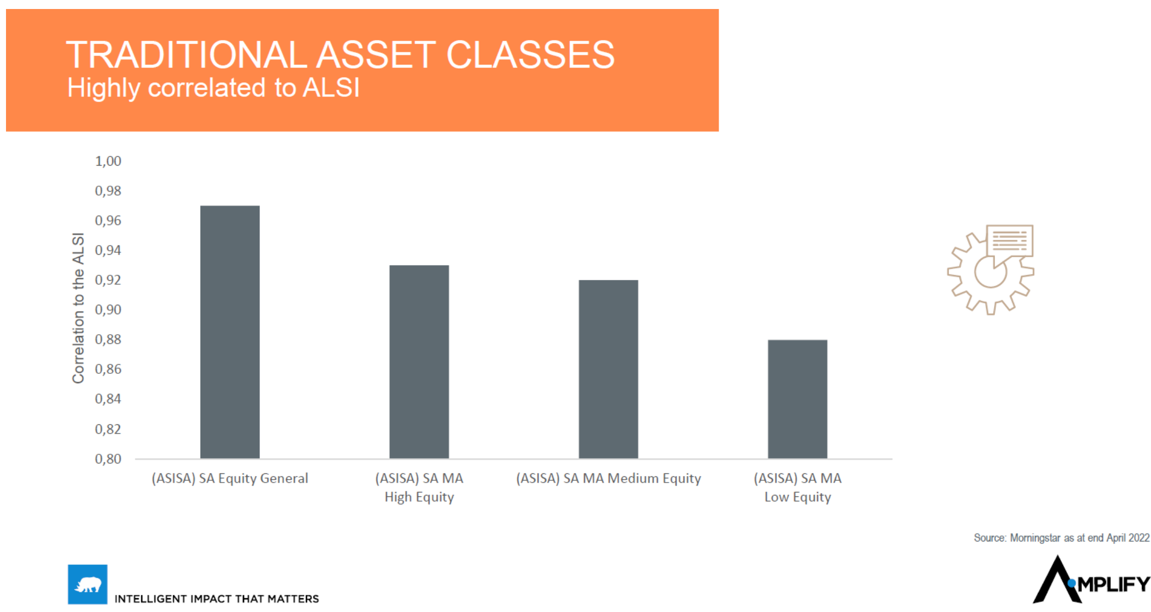
Sticking with the example above, when looking at a portfolio over a single period, the return of your 50-50 portfolio will be the weighted average of the returns of the two assets, and if the returns of Asset A and B are uncorrelated, the volatility will be reduced. This means that one can reduce the level of risk for the same level of return or increase the return for the same level of risk. However, if you consider the portfolio returns over multiple periods, they could exceed the weighted average of the underlying assets because volatility drains an asset's compounded return. This means that when viewed over a long period of time, diversification is not just about minimising risk – it also pays to be diversified as you are able to increase your compounded return. To illustrate this, refer to the example of two negatively correlated assets and a 50-50 portfolio, but viewed over a five-year horizon. The graph clearly shows that because a portfolio with two perfectly negatively correlated assets has no volatility, the portfolio's compounded returns will exceed that of its underlying holdings over time. This is because large losses reduce your capital base, and you have to make more than you lost just to get back to your original capital level.

Figure 4: Negative correlation



The difficulty is finding assets that are uncorrelated. The bar graph illustrates the fact that while multi-asset portfolios contain various different asset classes in order to provide investors with diversification, their performance is still driven, to a large extent, by the performance of the ALSI, as illustrated by the high correlation between each of the ASISA categories and the ALSI. This essentially means that while you may think you are diversified by having various different funds in your portfolio, your portfolio will still experience relatively large swings to the upside and the downside, depending on the market.

Figure 5: Correlation to the ALSI

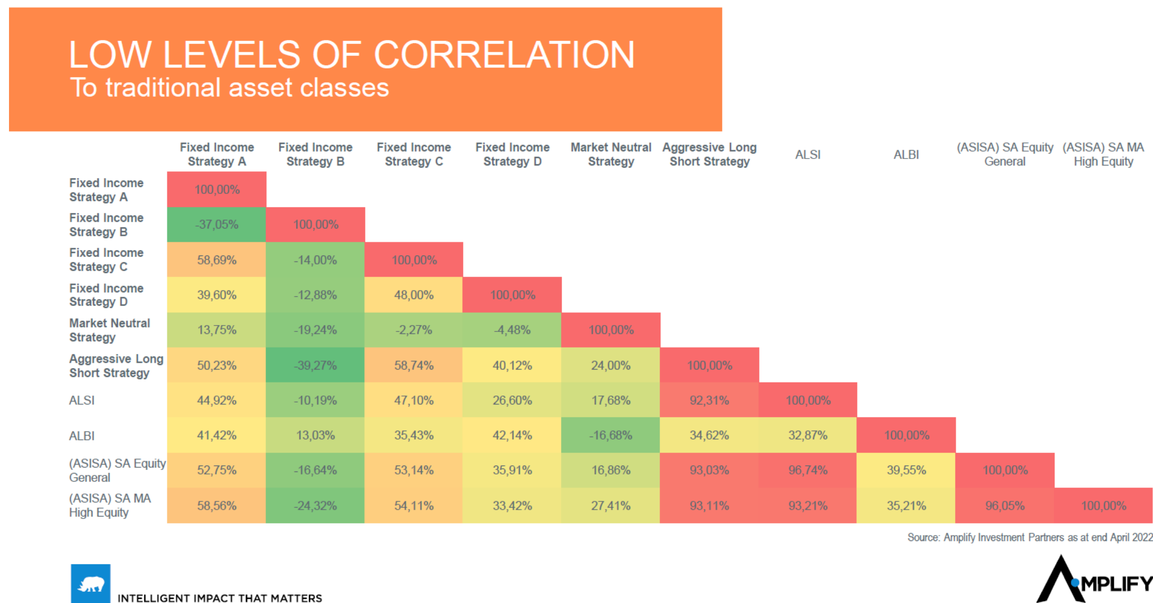


This is exactly where some hedge funds could play an important role in protecting your portfolio. Some, because many hedge funds move quite closely with equity or other indices and do not offer a great deal of diversification to a portfolio. If your goal is diversification in order to lower the risk in your portfolio, whether measured through volatility or drawdowns, you need to look for hedge funds that have a unique investment strategy with very little relation to the market. These types of hedge funds offer greater benefit to traditional long-only investors since

they move in a unique way relative to equities, and thus serve as a great hedge to a traditional long-only portfolio during periods where equities fail to deliver or worse, experience significant losses.

To illustrate this point, the correlation matrix below shows the correlation of four of our fixed income hedge fund strategies, our market neutral hedge fund, as well as our aggressive long-short equity hedge fund to the ALSI and ALBI as well as a few ASISA categories.

Figure 6: Correlation matrix



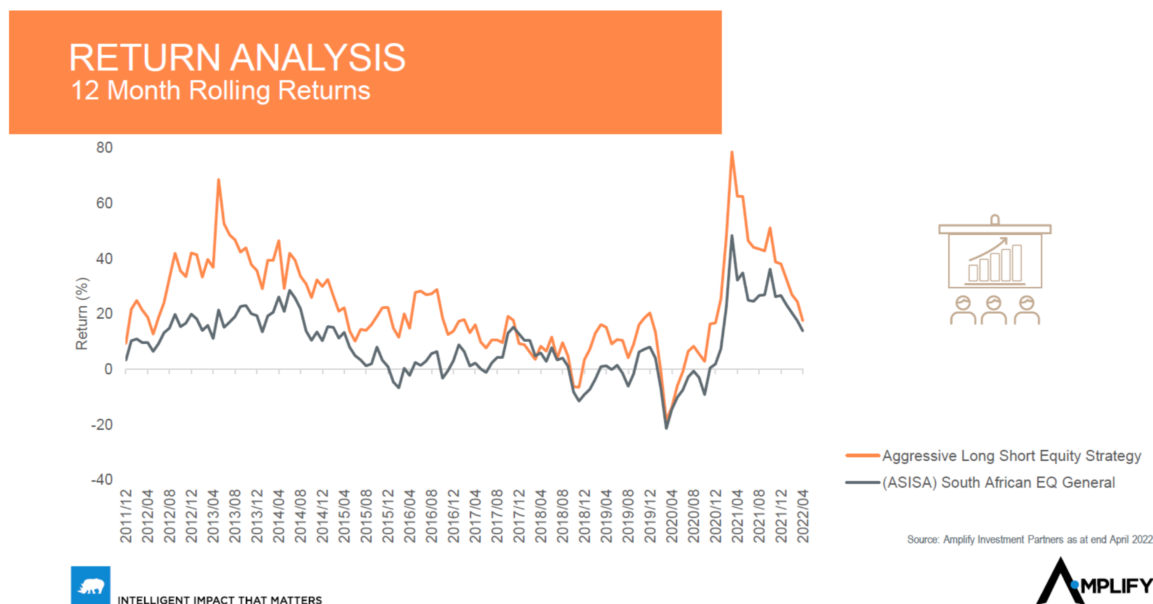
LOW LEVELS OF CORRELATION
To traditional asset classes

	Fixed Income Strategy A	Fixed Income Strategy B	Fixed Income Strategy C	Fixed Income Strategy D	Market Neutral Strategy	Aggressive Long Short Strategy	ALSI	ALBI	(ASISA) SA Equity General	(ASISA) SA MA High Equity
Fixed Income Strategy A	100,00%									
Fixed Income Strategy B	-37,05%	100,00%								
Fixed Income Strategy C	58,69%	-14,00%	100,00%							
Fixed Income Strategy D	39,60%	-12,88%	48,00%	100,00%						
Market Neutral Strategy	13,75%	-19,24%	-2,27%	-4,48%	100,00%					
Aggressive Long Short Strategy	50,23%	-39,27%	58,74%	40,12%	24,00%	100,00%				
ALSI	44,92%	-10,19%	47,10%	26,60%	17,68%	92,31%	100,00%			
ALBI	41,42%	13,03%	35,43%	42,14%	-16,68%	34,62%	32,87%	100,00%		
(ASISA) SA Equity General	52,75%	-16,64%	53,14%	35,91%	16,86%	93,03%	96,74%	39,55%	100,00%	
(ASISA) SA MA High Equity	58,56%	-24,32%	54,11%	33,42%	27,41%	93,11%	93,21%	35,21%	96,05%	100,00%

Source: Amplify Investment Partners as at end April 2022

You will notice that the fixed income hedge funds have very low levels of correlation to both the ALSI and, perhaps surprisingly, also the ALBI. In addition, the market neutral fund is a much better diversifier when compared to the aggressive long-short strategy. This is because the specific long-short strategy has around 90% net exposure to the market and aims to provide investors with a return of ALSI+10%. This type of fund would be your typical return enhancer, a fund that combines a mix of beta and alpha to give you an outcome you would not be able to obtain through a traditional long-only fund. Rather than having an absolute return benchmark, this fund has an ALSI benchmark. The idea is that if the ALSI does 10%, the fund should give you 20% and if the ALSI does -15%, the fund should give you -5%. In other words, this fund still has a large amount of beta, and while it should give you returns in excess of the market, it will not materially reduce the risk in your portfolio, whether you measure risk from a volatility or drawdown perspective. The best way to illustrate this point is by comparing the performance of the aforementioned strategy to that of the ALSI over 12-month rolling periods. The graph below clearly shows that while the strategy is able to add alpha over every rolling period, its performance is still driven by the market, and it will still suffer losses when the market is down.

Figure 7: Return analysis



On the other hand, market neutral funds are less reliant on the direction of the equity market to drive their performance. By hedging out most market risk, market neutral strategies aim to generate returns from good stock selection while decreasing the return earned from general market movements (beta). How they do this is a story for another day. True diversification, however, comes at a price i.e., there's no such thing as a free lunch. Funds that are truly uncorrelated lack the beta kicker and will struggle to keep up with equities in a bull market – which is why they are often overlooked. Nonetheless, uncorrelated returns can still benefit most portfolios by smoothing out drawdowns and allowing you to take more risk overall. This is particularly relevant in the context of clients that are already retired and need to draw an income from their portfolio.

While most investors are not as familiar with fixed income hedge funds as long-short equity, fixed income hedge funds are great diversifiers to a traditional equity or multi asset portfolio since they have very low correlation to both the ALSI and the ALBI. Most investors assume that fixed income hedge funds offer lower risk and lower returns than long short-equity hedge funds, but this is not the case. Within the hedge fund space, risk is not determined by asset class, but by the mandate. Fixed income strategies range from conservative to aggressive, with some strategies offering returns and volatility similar to that offered by an equity fund, but because these strategies are not dependent on the bond or equity market to drive their performance, they could be a very valuable addition to a traditional portfolio.

To illustrate the benefits of adding risk-diversifying hedge funds to a traditional long-only portfolio, consider an example of a blended hedge fund portfolio consisting of Amplify's four fixed income strategies and market neutral fund, equally weighted, allocating to each strategy at their respective inception dates. This blended portfolio is then compared to the performance and risk metrics of a portfolio allocating 100% to the ASISA SA general equity category versus a portfolio allocating 80% to the ASISA SA general equity category and 20% to the hedge fund blend. The exercise is repeated for the ASISA SA Multi Asset High Equity category. The results are summarised in the graph below.

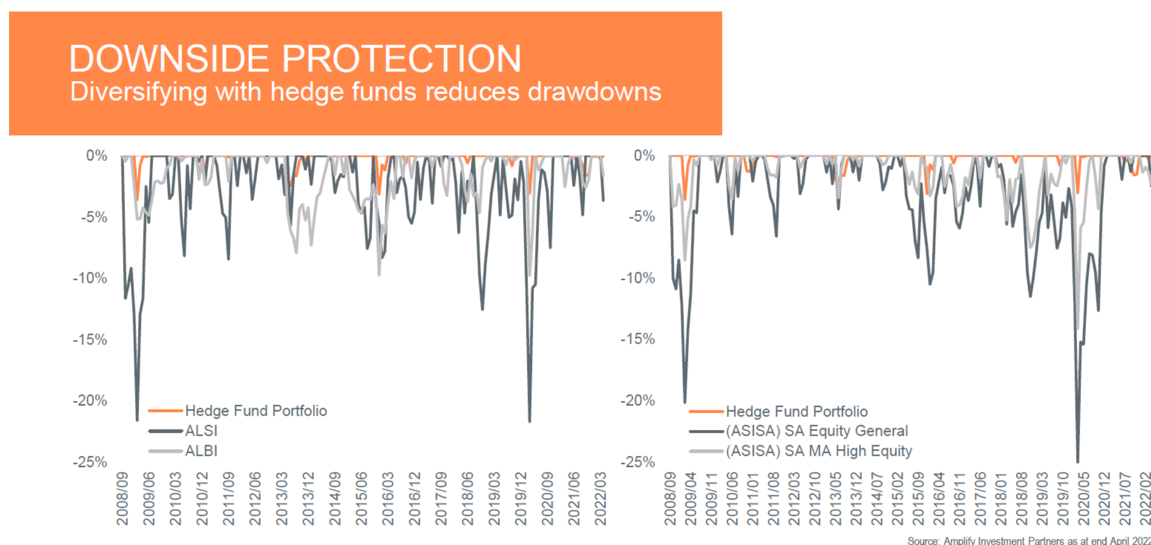
Table 2: Benefits of adding risk-diversifying hedge funds

	Return (%)	Standard Deviation (%)	Max Drawdown (%)
Hedge Fund Blend	15.10	5.02	-3.61
(ASISA) SA General Equity (100%)	9.40	12.38	-25.05
80% Equity General + 20% HF Blend	10.64	10.25	-18.69
(ASISA) SA MA High Equity (100%)	8.66	7.75	-14.12
80% MA High Equity + 20% HF Blend	9.68	6.59	-11.96

Source: Amplify Investment Partners

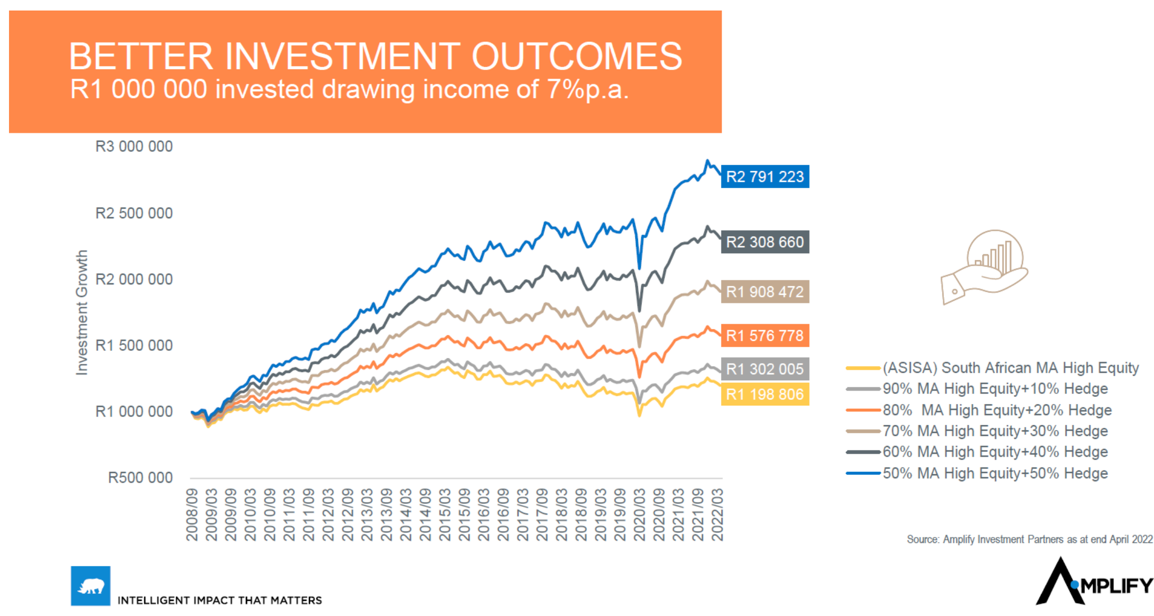
The results show that by only allocating 20% of your portfolio to hedge funds, you have managed to increase your return and reduce both the volatility and maximum drawdown of your portfolio materially. Another way of visualising the risk-diversifying benefits of hedge funds is by comparing the drawdowns of the hedge fund blend to the ALSI, ALBI and the aforementioned ASISA categories. The drawdown graphs below illustrate that an appropriate hedge fund blend could serve as a buffer to your portfolio when the ALSI and/or ALBI take a tumble.

Figure 8: Downside protection



Because diversifying hedge funds are able to reduce drawdowns and volatility when combined with a traditional long-only portfolio, they could be a very valuable addition to investments where a monthly income is drawn such as an investment linked living annuity (ILLA) portfolio. When investors have already retired and need to draw an income from their portfolio, timing is everything. While the more obvious risk to such a portfolio is inflation, sequence risk poses a further risk. Investors having to make withdrawals from their portfolio during bear markets end up withdrawing a larger part of their portfolio than they would have during a bull market, since they are withdrawing from a smaller capital base. Hedge funds offering uncorrelated returns could reduce the impact of sequence risk on a portfolio by mitigating drawdowns and smoothing the portfolio's returns. To illustrate this, using the above blend, its assumed that the client invested R 1 000 000 at the start of October 2008 and makes withdrawals of 7% per annum. The graph shows how allocating to the blended hedge fund portfolio in varying proportions materially improves the investors outcome.

Figure 9: Reduced sequence risk



To summarise, when thinking about hedge funds, refrain from grouping them all together and labelling them risky. The level of risk a hedge fund takes is completely dependent on the mandate. Secondly, don't overlook hedge funds that may offer slightly lower, but uncorrelated returns. The power of compounding is real. In addition, remember that not all hedge funds are great diversifiers. Just because a hedge fund has the ability to short, does not mean it can protect you from all capital losses. If a hedge fund has significantly more long positions than short, it will have a great deal of beta and will be sensitive to swings in the market. It still has a role to play – not just the role of diversifier.

Glacier Research would like to thank Emma Pretorious for her contribution to this week's *Funds on Friday*

Emma Pretorious

Business Development Manager,

Amplify Investment Partners

An attorney by trade, Emma now liaises with clients and builds the Amplify brand in the investment community, while creating greater awareness of Amplify's dual role of both financial returns for investors, as well as a positive environmental impact. Emma brings a unique blend of analytical thought and drive to the Amplify team. Her investment knowledge, combined with genuine enthusiasm helps build strong, personalised relationships with clients. Combining research-driven tactics with a playful approach to data, she manages to create position, personalised investment solutions that defy tradition and deliver real results. Above all, Emma is committed to growing her expertise and helping Amplify stay ahead of the curve, which in turn amplify investor's impact across the community.