J8 Capital Management LLP

London, 29th March 2021

J8 GARS drawdown analysis

Buying the dip?

The sophisticated and prudent investor always looks at optimizing returns in their portfolio. One such strategy, "buying the dip", is popular amongst long-only investors expecting above-average returns from advantageous entry point selection and exit point timing. Most such investors, however, miss the first or second point or both, be it an entry or exit point, and end up with lacklustre cumulative returns.

Question: Does "buying the dip" work for selecting the investment point in a systematic absolute return strategy?

Answer: Evidence suggests that the stronger the current drawdown, the likelier is a greater recovery return, however, the recovery return has little to do with the recovery length, thus suggesting that investing early during a drawdown is an important consideration in benefiting from "buying the dip".

In focusing on 'evidence', we examine this question using monthly model data underlying our J8 Global Absolute Return Strategy ("J8 GARS"). The said data stretches 30 years back to 1991. The following figure shows the drawdowns of the strategy.

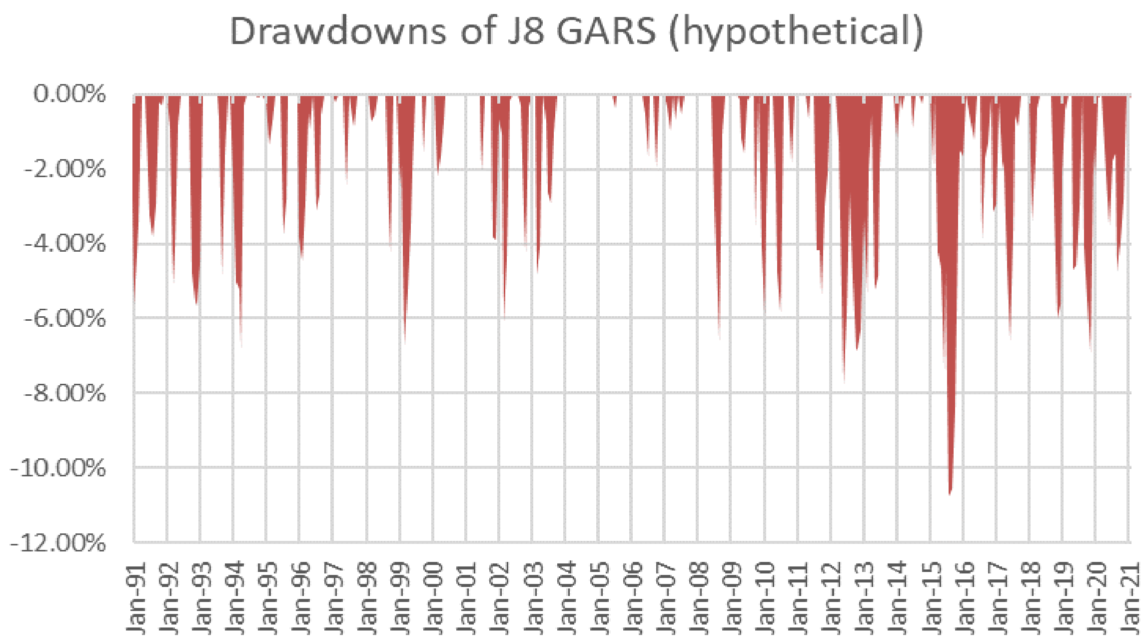

Figure 1: Drawdown analysis of the hypothetical monthly returns of the J8 Global Absolute Return Strategy (J8 GARS) from June 1991 until February 2021. The hypothetical monthly returns are calculated based on the underlying futures returns using closing prices, assuming 25bp pa slippage on the unlevered returns, 1% pa management fee and 15% high water mark inventive fees. Source: J8 Capital Management LLP.

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Analysis design

In this analysis, we investigate the 10 largest drawdowns. We juxtapose the maximum drawdown with the time it takes for drawing down, the length it takes to recover until the next peak, and concurrently review the return generated during such recovery. The monthly hypothetical returns evaluated start in June 1991 and are carried to the present.

Four drawdown parameters are measured, analysed, and then compared:

- *Maximum drawdown*: the maximum negative return from peak to trough.
- *Drawdown period:* the time it takes from peak to trough.
- *Recovery return:* the positive return from trough to the next peak.
- *Recovery length:* the time it takes to recover from trough until the next peak.

The figure below (Figure 2) provides context to the parameters we measure.

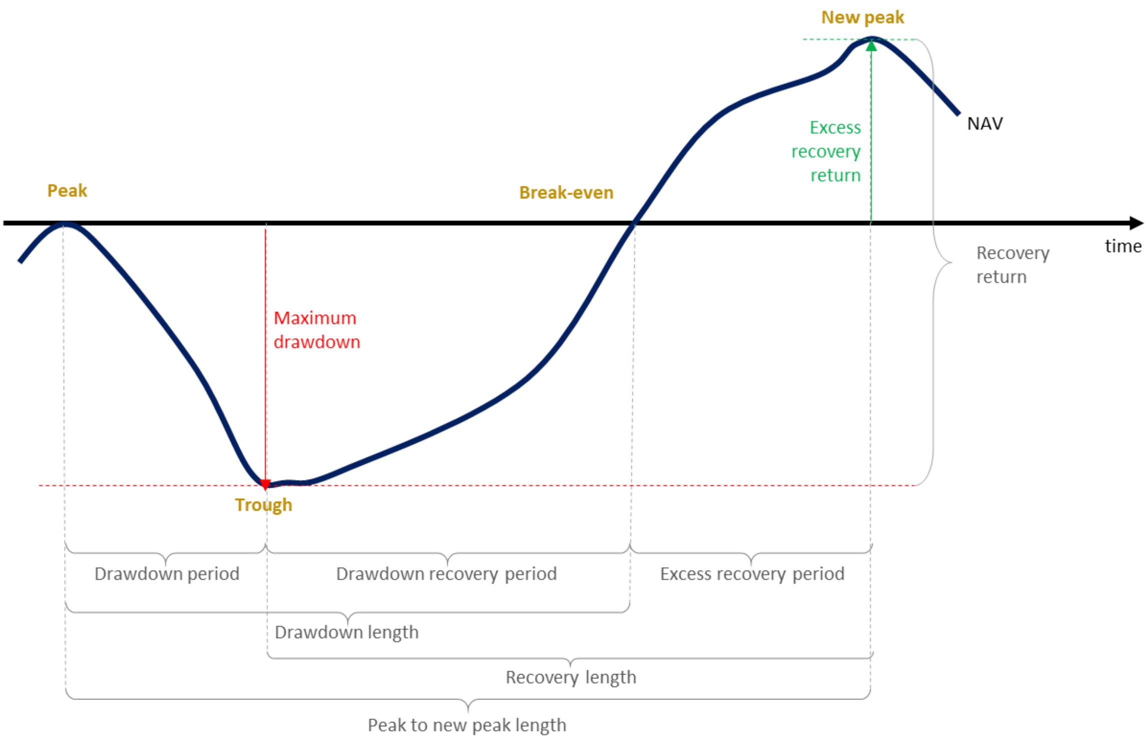


Figure 2: Illustrative example of the four parameters under investigation: Maximum drawdown, drawdown period, recovery return, and recovery length

In the table below (Table 1), we have measured for each specific drawdown the parameters we focused on to investigate and calculated the averages.

	1	2	3	4	5	6	7	8	9	10	Average
Peak to trough											
Maximum drawdown	-10.76%	-7.73%	-6.90%	-6.79%	-6.71%	-6.60%	-6.58%	-6.05%	-5.98%	-5.88%	-7.00%
Drawdown period [months]	4	3	3	4	2	3	3	3	2	2	2.9
Trough to new peak											
Recovery return	11.44%	14.43%	21.51%	19.01%	12.54%	20.26%	12.89%	14.07%	9.03%	9.06%	14.42%
Recovery length [months]	6	18	4	5	6	7	6	5	5	3	6.5
Peak to new peak											
Excess recovery return	0.68%	6.70%	14.61%	12.22%	5.83%	13.66%	6.31%	8.02%	3.06%	3.19%	7.43%
Peak to new peak length [months]	10	21	7	9	8	10	9	8	7	5	9.4

Table 1: The 10 maximum drawdowns and corresponding drawdown period, recovery return, and recovery length of the hypothetical monthly returns of J8 GARS from June 1991 until February 2021. The hypothetical monthly returns are calculated based on the underlying futures returns using closing prices, assuming 25bp pa slippage on the unlevered returns, 1% pa management fee and 15% high water mark inventive fees. Source: J8 Capital Management LLP.

Proceed with caution

From a high-level analysis, we see that the average recovery return is about double that of the average maximum drawdown. However, on further enquiry, one cannot infer that the excess recovery return is necessarily about the same magnitude on the way up as the preceding drawdown was down.

One can also see from a high level that on average, the drawdown period is about 1/3 and the recovery length about 2/3 of the peak to new peak length, however that relationship is weak in statistical significance (correlation of only 0.2) when analysing the individual data and does not lend itself for generalization.

Statistical drawdown analysis

Because the sample size of 10 events is small, when we analyse the monotonic relationship between these four parameters on an individual level, we are using Spearman's rank correlation coefficient to determine the relationship. We then use the t-test to assign a significance to that relationship.

First, we calculate the correlation between each parameter using Spearman's rank correlation methodology:

Spearman's rank correlation coefficient	Maximum drawdown	Drawdown period [months]	Recovery return	*Recovery length [months]*	Excess recovery return
Drawdown period [months]	-0.54				
Recovery return	-0.45	0.54			
Recovery length [months]	-0.43	0.32	0.20		
Excess recovery return	-0.18	0.35	0.13	0.02	
Peak to new peak length [months]	-0.63	0.67	-0.18	0.89	0.13

Table 2: Spearman's rank correlation coefficient between the 10 maximum drawdowns and drawdown period, recovery return, and recovery length of the hypothetical monthly returns of J8 GARS from June 1991 until February 2021. The hypothetical monthly returns are calculated based on the underlying futures returns using closing prices, assuming 25bp pa slippage on the unlevered returns, 1% pa management fee and 15% high water mark inventive fees. Source: J8 Capital Management LLP.

Then, we assign a significance to each of these correlations using Student's two-sided t-test.

Significance (t-value)	Maximum drawdown	Drawdown period [months]	Recovery return	Recovery length [months]	Excess recovery return
Drawdown period [months]	90% (t=1.83)				
Recovery return	80%-90% (t=1.44)	~90% (t=1.8)			
Recovery length [months]	50%-80% (t=1.35)	50%-80% (t=0.95)	<50% (t=0.58)		
Excess recovery return	<50% (t=0.5)	50%-80% (t=1.07)	<50% (t=0.36)	<50% (t=0.05)	
Peak to new peak length [months]	>95% (t=2.3)	>95% (t=2.55)	<50% (t=0.5)	>99% (t=5.55)	<50% (t=0.36)

Table 3: Significance of Spearman's rank correlation coefficient from Table 2 using Student's t-test.

Key takeaways

As expected, there is a significant relationship between maximum drawdown and the time it takes to reach that trough: the greater the maximum drawdown, the longer the drawdown period. Furthermore, the longer the drawdown period, the greater the recovery returns; also a statistically significant relationship. One reason for such occurrence may be that during longer drawdown periods, signals have more time to adjust to better benefit from the regime shifts in the markets which subsequently lead to the recovery.

Another statistically significant relationship informs that the greater the drawdown the greater the total recovery return, however, the magnitude of the excess recovery return is unrelated to the size of the drawdown. A strong drawdown is not necessarily followed by a strong excess recovery return.

Though it is likely that the recovery takes longer if there was a stronger drawdown or longer drawdown period, that relationship is statistically not significant (<50%). Therefore, the J8 GARS may experience a recovery either as a fast snap-back, or a long and drawn-out claw back.

Additionally, the recovery return has little to do with the recovery length: the weak positive correlation (0.2) between recovery length and recovery return is statistically not significant (<50%). Lastly, the analysis pointed out that the relationship between the length from peak to new peak and the excess recovery return, though positive, is not of statistical significance.

Conclusion

The evidence and the analysis, thereof, shows that investing during a drawdown may be rewarded with higher returns during recovery (buying the dip) and in converse, chasing performance by investing after a good run may be the less attractive approach to investing in systematic absolute return strategies. The recovery return has little to do with the recovery length, which suggests that investors might benefit more from "buying the dip" by investing early during drawdown phases.

J8 Capital Management LLP

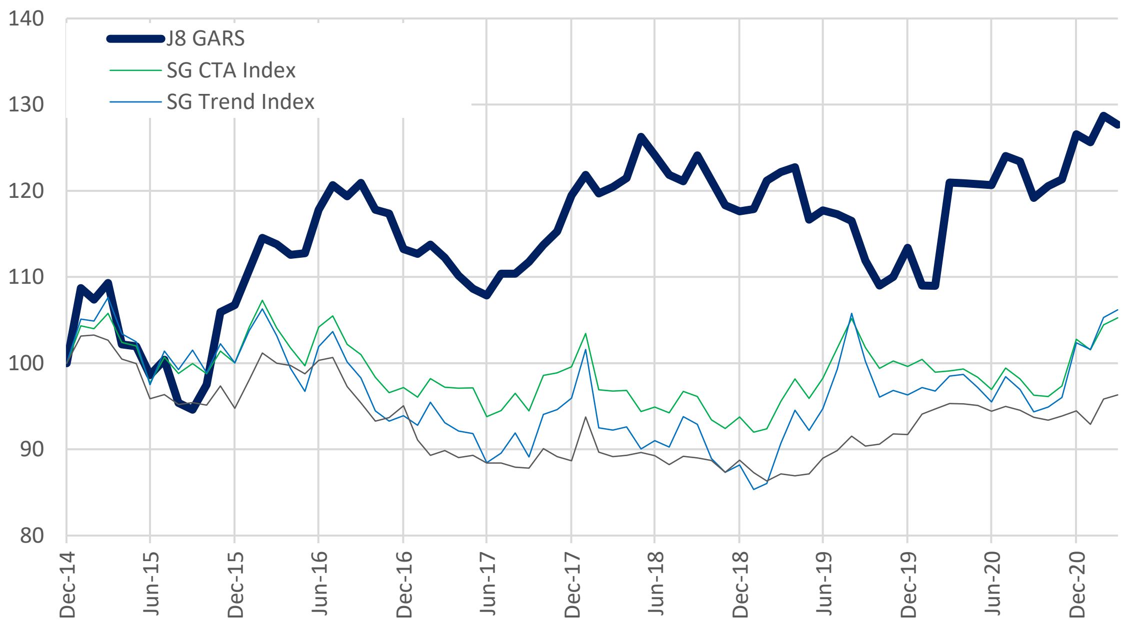
About J8 GARS

The J8 Global Absolute Return Strategy ("J8 GARS") is a systematic, diversified program focused on liquid alternative risk premia and systematic global macro strategy sets. The strategy has been live since 1st January 2015.

The objective of J8 GARS is to methodically seek to deliver portfolio protection, portfolio diversification, and capital appreciation by capturing alternative streams of returns within a systematic and formulaic investment process.

Performance

The J8 GARS strategy returned +11.63% in 2020.



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Cm Rtn
2015	8.70%	-1.20%	1.77%	-6.51%	-0.22%	-3.28%	1.81%	-4.98%	-0.84%	3.09%	8.63%	0.78%	6.76%
2016	3.81%	3.34%	-0.65%	-1.05%	0.16%	4.48%	2.42%	-1.07%	1.29%	-2.56%	-0.39%	-3.50%	6.08%
2017	-0.52%	0.98%	-1.36%	-1.83%	-1.40%	-0.71%	2.35%	0.00%	1.22%	1.75%	1.38%	3.62%	5.48%
2018	2.00%	-1.76%	0.61%	0.85%	3.95%	-1.67%	-1.85%	-0.62%	2.46%	-2.35%	-2.36%	-0.60%	-1.56%
2019	0.22%	2.81%	0.81%	0.45%	-4.94%	0.90%	-0.38%	-0.66%	-3.92%	-2.60%	0.93%	3.06%	-3.58%
2020	-3.87%	-0.02%	10.99%	-0.08%*	-0.08%*	-0.08%*	2.89%	-0.58%	-3.44%	1.14%	0.65%	4.32%	11.63%
2021	-0.75%	2.46%	-0.80%										0.87%

*Table 1 and Figure 3: Live performance of the J8 Global Absolute Return Strategy (J8 GARS), calculated as futures performance less realized trading costs and slippage and less indicative management fee of 1% p.a. and performance fee of 15%. J8 GARS and SG Indices are calculated using USD 100 as starting value on 1st January 2015. *The strategy was not trading in these months, hypothetical returns: Apr20 -0.86%, May20 -2.36%, Jun20 -1.54%. Note: Past performance is not necessarily indicative of future results. THE RISK OF LOSS IN COMMODITY INTEREST TRADING CAN BE SUBSTANTIAL. Source: J8 Capital Management LLP, Bloomberg Financial LP.*

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