Lethame Capital Management

Technology : Research : Investing

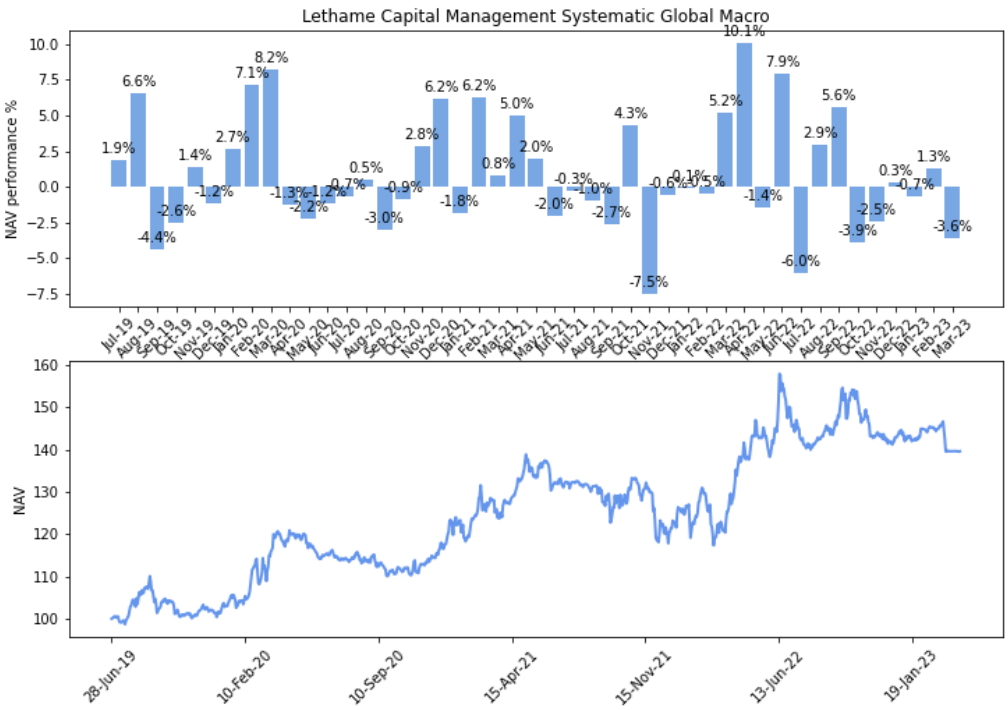
Program Update – Q1 2023

	Annualised Return*	Standard Deviation	Sharpe Ratio	Maximum Drawdown	Average Correlation
Lethame Capital Management	9.7%	13.9%	0.64	15.8%	-
S&P 500 Index	6.7%	23.0%	0.26	42.6%	1.0%
60/40 portfolio	4.0%	13.8%	0.23	23.5%	1.0%

This commentary refers to the performance of the strategy of the personal investment vehicle of Piers D. Watson, please see disclaimer.

***System running from 1st July 2019. All calculations based on daily data. Program Sharpe Ratio calculated using RBA 3 OIS, comparison indices use USD 3m SOFR.**

"My work is about avoiding tail risk, if you want to do well you must first survive" – Nassim Nicolas Taleb[1]



Performance Review 1Q 2023

Lethame Capital Management's (LCM) Systematic Global Macro Program returned -3.0% in the First Quarter of 2023. As a reminder while 2022 was a very difficult year for investors in traditional strategies, for example the Financial Times reported[2] that a 60/40 portfolio returned -17%, by contrast LCM had a good year with a positive return of +17.6%.

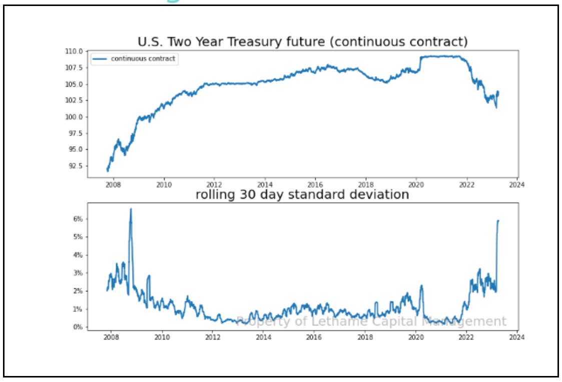
LCM entered 2023 with positioning broadly similar to that held in 2022, a particular feature being short positions across the US yield curve as well as shorts in some European and Asian interest rate complexes. Many of these positions had been established as early as the first quarter of 2022 and the trend was well enough advanced that LCM's endogenous risk management process had begun reducing risk Nonetheless, it seems this was a popular position, and like many market players the system began the quarter short interest rate futures.

Philosophically, any serious participant in global macro investing concentrates on risk-adjusted performance. In those terms, the most significant quarterly returns were produced by Natural Gas which experienced a 5 standard deviation move to the downside and European equities saw a 5 standard deviation move to the upside.

The next biggest move in the instruments the system trades was claimed by the gold price which also experienced a move to the upside representing 3.7 standard deviations.

In comparison, the quarterly moves in the interest rate complex disguise the extent of the move in March. This reflects the fact that maintaining a 'short' position in interest rates was a broadly profitable position over the first two months of the quarter. Bond positions across the US curve and in Europe experienced on average a two standard deviation quarterly move to the upside, which given the size of the short position was a very significant move.

The chart *"U.S. Treasury Future (continuous contract)"* shows rolling 30-day volatility of the two-year future almost reached 6% in March. This is a reading almost as high as during the GFC. These levels of volatility are exceptional when considering the two-year treasury is possibly regarded as the world's safest asset and is the collateral of choice of the global financial system.

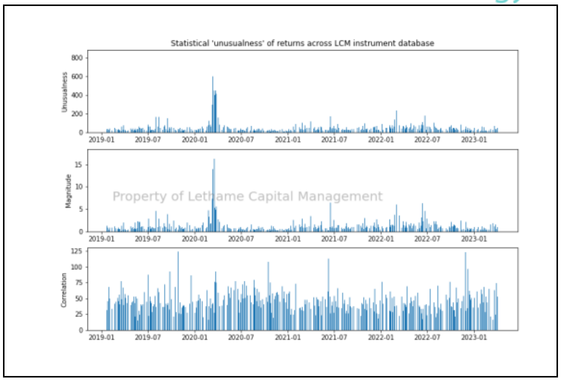


Live Cattle, Crude Oil, Copper and a number of currencies all experienced between one and two standard deviation moves. The only asset in the program with a quarterly move of less than one standard deviation was the Euro currency.

Putting the March moves into perspective, in the cash market the yield on the two-year treasury saw a high of 5.07% and a low of 3.77% a move represented its biggest decline in yield since the Black Monday stock market crash of October 1987.

Also, during March, the two-year yield moved 20 basis points or more than seven consecutive trading sessions, which is the first time this has happened since at least 1976 which is the start of the data series LCM has available. The two-year yield's decline on March 13 was a 6.1 standard deviation move, and the one-week fall on March 15 was a 7.3 standard deviation move.

Despite this very unusual price action in interest rate markets, it was interesting to observe that across markets generally there were few signs of the kinds of market 'stress' associated with events like the GFC in 2008 or the Russian default in 1998. LCM closely monitors over 40 markets for signs of statistical 'unusualness' in returns and in particular large moves combined with 'unusual' correlation. This combination often indicates the presence of a 'stressed' market participant/s whose forced unwinding of positions leads to significant risk-off price action.



As is evident from the chart *"Statistical 'unusualness' of returns across the LCM Instrument database"* there was minimal evidence of 'unusualness' in correlation and the magnitude of return appeared to be concentrated in the fixed interest space and did not 'leak' into other markets. The event certainly did not result in anything like the magnitude of price moves across assets as registered during the COVID related sell-off of 2020.

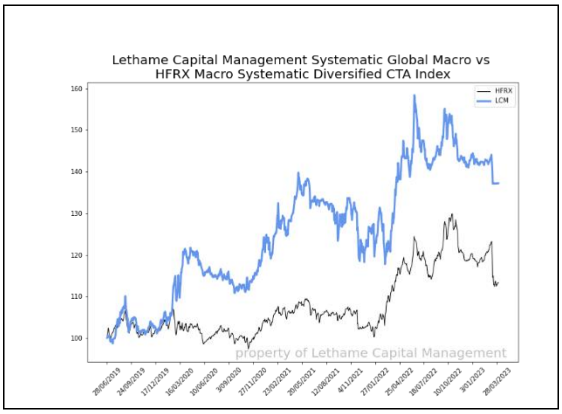
Sometimes this signal is important for the program but it tends to be an indication that it is not optimal to run significant levels of equity beta. There have been a number of occasions where 'unusual' price action has presaged significant profits for the strategy. In this case the positioning across equity indices was mixed with the system short some equity indices but long others. There is a reminder here that even in the realms of systematic trading program's there are elements of art rather than science.

Not another crisis…

This latest episode is the third event that LCM would describe as meriting the description 'crisis' in the just over three years since establishing the strategy live.

In retrospect, LCM would probably have been a bit more circumspect in deploying risk capital had it expected three such events to occur in such a short time span. Fortunately, by its nature the strategy is designed to benefit from significant market moves and it is extremely pleasing how it has played out. Even an event such as the current one, which occurred very suddenly and therefore in the worst possible way for a relatively long-term strategy like LCM's did not result in the strategy's worst monthly return to date. The endogenous risk management had already started a de-risking process and LCM feels content that it lives to fight another day.

Inevitably, we compare ourselves to others who do what we do. This comparison is highlighted in the chart *"Lethame Capital Management Systematic Global Macro vs HFRX Macro Systematic Diversified CTA Index"*. LCM, by nature of its scale does not have the advantage of larger managers who can fully benefit from the diversification advantages that exposure to sometimes many hundreds of assets can offer. Nonetheless, since its inception the strategy has outperformed the HFRX Macro Systematic Diversified CTA Index and furthermore has produced 50% greater return-to-risk.



Furthermore, in this current period of 'crisis' the strategy appears to have performed better than its peers. During March the HFRX Index mentioned declined 6.6%, the second worst monthly return since the inception of the index. LCM's decline of 3.6% was approximately half of that. Despite extensive academic evidence and decades of practical performance strategies such as LCM's remain unloved by the broader investment community. The degree of schadenfreude[3] towards the strategy evident in the media is rather amusing.

LCM, manages its own capital and while it attempts to approach markets as if it were an institutional grade participant at the end of the day its instinct for capital preservation must prevail. To quote LCM's favourite flaneur "…if you want to do well, you must first survive…[1]".

As noted previously LCM's endogenous risk management had already began reducing the risk in the program. In this case LCM's understanding of the nature of the plumbing of the global financial system caused it such concern that it decided to institute a discretionary override and completely exit risk during March. LCM takes the loss of capital extremely seriously and constantly reflects on improving the system. At the end of the day LCM is in the business of taking on risk, for which it expects to generate return. At times though prudence is required and in retrospect from the perspective of its P&L this override was the correct decision.

<u>Q2 2023 – back to business</u>

LCM entered the new quarter with a blank sheet of paper and returns to its endeavors of deploying risk in global markets. The signals in the program are relatively modest and the system has begun deploying significantly less risk than it did when it entered the first quarter. Interestingly the program is currently receiving no signals from the interest rate complex.

LCM's long-standing concern is that markets continue to reel from the after effects of the 2008 financial crisis. The financial system appears to be broken and it seems possible that these episodes will be a feature rather than a bug until the monumental task of changing the system is at least contemplated. The good news is that this will hopefully present a ripe environment for a system such as LCM's – a positively skewed return distribution with the ability to short - and as such LCM relishes the opportunity to deploy risk capital in markets once again.

<u>Program development</u>

This is the first commentary LCM has distributed since Q221 but this doesn't reflect a lack of activity as this activity partly explains the lack of time devoted to communication. As mentioned, 2022 was an excellent year for performance but also represented significant progress in program development. Notable improvements to the program include:

1. The original version of the program concentrated on US exchange traded futures markets that were USD denominated. The current iteration of the program allocates to multi-currency futures contracts across Asian, European and US time zones.

2. Diversification is the most important feature of strategies like LCM's. Within the constraint of the capital available, the increase in the number of available markets as a consequence of point 1 means there is a greater number of instruments with characteristics that allow them to be incorporated into the program. Program diversification has improved significantly as a consequence.

3. In the research process asset allocation between instruments and strategies is perhaps one of the most intellectually stimulating challenges. Optimisation in particular is appealing to those of a quantitative disposition but is fraught with compromises. Initially the program incorporated a version of a non-parametric bootstrapping technique[4,5,6] but eventually concluded it was very hard to justify anything other than a naïve $1/n$ allocation[7]. After a great deal of additional research, the strategy has now settled of a variation of Hierarchical Risk Parity[8] which allows the incorporation of machine learning techniques into the program.

4. On the development side the program has transferred fully to a Linux operating environment. LCM believes that this is

significantly more robust, stable and efficient than a windows-based system. The new environment is substantially better for development in particular.

5. The initial version of the program stored data locally in either flat files or pandas hdf5 format. Considerable development time now means the current iteration utilizes a fully cloud based database infrastructure with all data used by the program stored in cutting edge database technology.

6. Considerable development time has been devoted to incorporating the Apache Kafka messaging protocol into the system environment. This allows for the efficient capture and routing of streaming data into the systems database or the trading model itself.

[1] Taleb. N. N., *'The Odd Lots Podcast'* 6 Apr 2023

[2] https://on.ft.com/3Igkyuy

[3] https://digitaledition.ft.com/article/281870122709594

[4] Tompkins R. G., and D'Ecclesia, R. L., (2006) *"Unconditional Return Disturbances: A Non-Parametric Simulation Approach"* Journal of Banking and Finance

[5] Berrar, D., (2018) *"Introduction to the Non-Parametric Bootstrap"* Tokyo Institute of Technology

[6] Srivatsa, R., Smith, A., and Lekanda, J. (2010) *"Portfolio Optimisation and Bootstrapping"* Journal of Property Investment & Finance

[7] DeMiguel, V., Lorenzo, G., and Uppal, R. (2009) *"Optimal Versus Naïve Diversification: How Inefficient is the 1/N Portfolio Strategy"* Review of Financial Studies

[8] Lopez de Prado, M., (2016) *"Building Diversified Portfolios that Perform Out-of-Sample"* Journal of Portfolio Management

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Lethame Capital Management

Lethame Capital Management (LCM) is a private company established to manage capital using proprietary software and algorithms developed by Principal, Piers Watson, CFA FRM CQF CFTe. LCM's investment program utilises his thirty years of experience as a portfolio and risk manager covering multiple asset classes and follows years of research, analysis and technology development. The program is designed to provide a comprehensive and systematic exposure to a diversified range of return streams.

Program design has been borne out by the performance of the system since inception and is backed by comprehensive back-testing over the past 40 years (see the performance graph and table on the following page).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1994									4.38%	-0.09%	5.94%	-6.26%	**9.87%**
1995	1.47%	0.18%	-4.46%	7.59%	8.84%	1.37%	0.26%	-2.99%	4.38%	5.77%	5.85%	3.01%	**33.73%**
1996	-2.38%	-3.02%	2.66%	4.69%	1.38%	7.76%	-10.11%	3.32%	5.09%	4.65%	19.51%	-4.81%	**30.22%**
1997	6.92%	-5.03%	-1.84%	-0.37%	4.25%	1.79%	11.07%	-6.62%	2.93%	2.25%	-1.56%	1.28%	**32.68%**
1998	0.48%	2.10%	3.31%	-4.54%	7.34%	-0.03%	10.28%	8.94%	-6.51%	-1.29%	6.98%	8.54%	**35.68%**
1999	1.04%	-5.52%	1.01%	1.67%	-0.68%	2.02%	-3.13%	1.09%	-0.16%	-4.88%	2.83%	13.81%	**6.34%**
2000	-2.70%	-2.35%	-2.78%	-0.51%	2.71%	-3.55%	0.41%	6.80%	-3.01%	-4.91%	15.12%	12.07%	**49.69%**
2001	-1.50%	13.16%	14.36%	-12.11%	3.77%	-1.29%	-0.05%	14.05%	17.24%	1.24%	-6.35%	-3.13%	**38.00%**
2002	-1.13%	2.05%	-7.02%	5.24%	2.98%	10.14%	10.84%	2.09%	10.78%	-5.74%	-3.67%	13.08%	**39.79%**
2003	7.62%	11.88%	-8.22%	0.38%	9.08%	-2.19%	-4.35%	1.10%	6.28%	-0.20%	3.61%	8.13%	**23.45%**
2004	4.99%	16.29%	4.23%	-13.36%	0.65%	-2.01%	-5.83%	4.21%	0.61%	6.61%	5.48%	4.99%	**29.49%**
2005	-4.69%	-6.47%	-3.42%	2.42%	4.79%	-1.13%	-2.72%	1.86%	-0.90%	-4.27%	5.10%	-4.50%	**4.83%**
2006	-1.16%	-2.69%	6.65%	3.45%	-3.20%	-2.59%	-7.07%	1.09%	5.59%	3.55%	2.13%	4.36%	**6.22%**
2007	-0.95%	-4.37%	-4.50%	5.95%	5.96%	-3.66%	-2.00%	-3.45%	1.43%	3.46%	4.14%	-0.37%	**20.84%**
2008	12.77%	8.20%	4.03%	-7.42%	0.50%	14.44%	-7.40%	-2.01%	9.80%	17.15%	12.62%	4.98%	**63.44%**
2009	3.66%	5.34%	-4.96%	-3.68%	-5.86%	-1.91%	1.73%	6.58%	5.56%	-1.04%	17.19%	-9.87%	**-15.30%**
2010	3.62%	3.93%	11.47%	4.77%	-3.30%	3.53%	-6.20%	4.78%	-1.66%	6.58%	-5.25%	7.34%	**15.37%**
2011	3.42%	4.16%	-5.87%	9.11%	-2.78%	-8.20%	6.82%	11.66%	-3.50%	-6.10%	1.26%	3.96%	**-10.67%**
2012	5.62%	2.15%	1.57%	2.69%	5.85%	-10.97%	11.00%	-1.44%	-2.13%	-4.41%	-0.99%	-2.87%	**-6.17%**
2013	-2.67%	-0.37%	1.86%	8.49%	-10.51%	-9.74%	4.74%	-4.81%	3.41%	5.83%	2.26%	-9.51%	**1.08%**
2014	-1.00%	2.54%	-7.23%	2.90%	15.93%	10.88%	-5.72%	4.19%	6.29%	6.10%	10.18%	-1.57%	**31.39%**
2015	10.50%	4.36%	6.69%	-3.54%	3.94%	-11.17%	4.21%	-8.74%	10.62%	0.20%	10.02%	-8.31%	**19.47%**
2016	8.73%	8.12%	-5.94%	-2.86%	-3.21%	-0.37%	2.84%	-3.73%	-4.89%	-5.98%	2.31%	9.53%	**-11.08%**
2017	-2.67%	16.23%	0.44%	5.46%	3.30%	-11.18%	2.94%	2.17%	0.86%	15.73%	-0.72%	-0.79%	**3.36%**
2018	17.86%	-11.64%	-3.92%	-0.29%	-0.91%	1.58%	2.96%	2.65%	-2.57%	-2.47%	-2.83%	4.08%	**12.21%**
2019	-4.38%	9.14%	1.48%	5.40%	-2.16%	0.74%	1.88%	6.59%	-3.77%	-2.55%	1.36%	-1.20%	**12.17%**
2020	2.67%	7.11%	8.20%	-1.26%	-2.22%	-1.18%	-0.70%	0.47%	-3.00%	-0.86%	2.85%	6.20%	**18.97%**
2021	-1.83%	6.22%	0.80%	5.01%	1.97%	-2.00%	-0.29%	-0.98%	-2.84%	4.18%	-7.50%	-0.62%	**1.31%**
2022	-0.08%	-0.52%	5.17%	10.07%	-1.40%	7.90%	-6.02%	2.94%	5.62%	-3.90%	-2.48%	0.33%	**17.61%**
2023	-0.68%	1.30%	-3.60%										**-3.01%**
	Simulated												
	Real Time												