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The Adaptive Asset Allocation Report

Issue No. 3

A Model driven Business Cycle Trend Following approach to investing

Robin Griffiths
Editor

► Robin Griffiths is Editor of The Adaptive Asset Allocation Report. Prior to this he was the Editor of the Dynamic Investment Trends Alert, a market newsletter for private investors published by Southbank Investment Research. Robin has served as Head of Multi-Asset Research & Advisory at the ECU Group. He was previously Chief Technical Strategist at HSBC Investment Bank for 20 years, before becoming Head of Global Asset Allocation at Rathbones, and then a director and technical strategist for Cazenove Capital Management. Robin was a Partner of WI Carr and Head of Technical Analysis at Grieveson Grant. Robin is a committee member and former chairman of the International Federation of Technical Analysts, and former chairman, now fellow, of the British Society of Technical Analysts. Robin has been a member of ECU's Global Macro Team for over 20 years. Robin has won several Technical Analyst awards for his research.

Don't poke the bear

Dear Readers,

Welcome to our new home!

We are now available as a newsletter on the ByteTree website. We hope this will make it easier for readers going forward. The Adaptive Asset Allocation model has worked well and is up 17.8% this year. The rally in stock markets was based on false expectations and appears to be petering out. The Federal Reserve has taken the opportunity to clear the air. It used the speech at Jackson Hole to make it unequivocally clear that their policy of rate tightening will stay the same for quite some time to come.

Stock markets are in a bear market. It is a young bear by normal standards. It's just had a rally that will evaporate. We are in what has always been the weakest period of any year. Crashes seem to occur between now and locate October. We could easily get a 25% drop in this period. Even then, the bear will not be over. All reliable indicators point to a recession coming next year. The chance of it being a bad one is modestly high.

This current bear is young and may last several months. The risks are to the downside. We mainly own commodities as an inflation hedge. They have done well . They are volatile but the trends are still relatively strong. The World is not on normal course. There is Global Warming, a war with Russia and a good chance of a different war with China. Inflation is out of control. Life is tough.

In the UK, we don't even have a Prime Minister and the prospective takers don't have a clue about how to control anything. The likely winner will be in charge of the very things she fought against in the past. In this crazy world, the AAA Model tells us that Real Assets are a good place to be. We are in Commodities and don't want to leave. If we own any equity market it should be India. Otherwise, it is all about survival. Doing clever things like poking a bear is not a good strategy. Good luck.

Best Wishes,

Robin Griffiths

Rashpal Sohan
Managing Editor

► Rashpal Sohan is Managing Editor of The Adaptive Asset Allocation Report. Prior to this he was the Managing Editor of the Dynamic Investment Trends Alert, a model driven investment publication for private investors published by Southbank Investment Research. Rashpal is a consultant data scientist who has developed the model for The AAA report. Rashpal holds a keen interest in data driven insights using Visualisation and Machine Learning and holds a Masters in Data Science from City, University of London, with distinction. His dissertation was on the topic of a Risk-Based Dynamic Asset Allocation Strategy using Ensemble Machine Learning and was awarded the City University Computer Science Outstanding Project Prize. The underlying trend algorithm from his dissertation forms the basis of the AAA Model. Rashpal has served as Senior Macro & Quantitative Strategist to the ECU Group, and built several fundamental and quantitative models for use in Dynamic Asset Allocation. Rashpal has over 15 years of experience in Asset Allocation, having previously served as Senior Asset Allocation Analyst for one of the UK's largest discretionary investment management firms, Rathbone Brothers. He holds a first class honors degree in Actuarial Science from the London School of Economics, is a qualified Financial Risk Management (FRM) professional and has passed all three levels of the Chartered Financial Analyst (CFA) Program. As a consultant Data Scientist, Rashpal has done projects for ByteTree, where he helped extract key insights from their Network Demand set of indicators using Machine Learning and Data Visualisation and has also done Data Science projects in Facial Recognition, Reinforcement Learning, Recommender Systems and the influence of regional personality differences on the UK's vote to leave the European Union amongst others. Rashpal has won several Technical Analyst awards for his research, together with his business partner.

Dear Readers,

We are excited to be joining ByteTree and would like to express our gratitude to Charlie Morris and the rest of the team at ByteTree for bringing us on board. Many of you already know Charlie Morris as the editor of the Fleet Street Letter. He is also the Founder and CIO of ByteTree, a research-driven investment adviser providing real-time digital asset data, fundamentals, technicals and crypto research and analysis. We have partnered with ByteTree as there are clear synergies between their research methods and ours. In due course, we will be sending you a promo-code which you can use to sign up to our research.

Our message this month is still very much the same. We remain in a global equity bear market facing the prospect of a US and global recession in the coming year. It may not feel like that after considering how hard equities have rallied since mid-June – but there is a reason for that. Investors have been dreaming of a Fed pivot away from aggressive interest rate hikes given that US inflation has been showing signs of peaking. However, the Fed quashed any such hopes with a clear message delivered at Jackson Hole last week. The gist of their message is captured in our opening quote this month.

The majority of World Equity Markets are still in the red this year after the strong rally and only 25% are trading above their 200-day moving averages. In other words, the equity rally is just a bear market rally and will eventually give way to further falls in the market. One of the reasons we remain cautious is because we don't think the US and global economy has digested the full impact of Fed rate hikes just yet. Monetary policy normally works with a lag of around 15 months, meaning the full shock of the hikes will hit home next year. Economic growth in the USA is set to slow significantly heading into 2023. The probability of a recession is high, and the chances of a soft landing are very low indeed.

The AAA Model continues to hold Commodities as an inflation hedge, low volatility (defensive) equities and the India Equity Market. However, we need to remain cognizant that commodities are volatile and thus prone to large corrections. They could easily slip out of the strongest ranked assets in the AAA Model if global economic growth continues to crater as we expect. However, it is not our job to try and second guess the model – only adapt with it. If and when this happens, we'll change with the model. For now, hang on and buckle your belt – there's turbulence ahead.

If you have any questions or comments, please write in to aaa@bytetree.com. In future we will be hanging out at https://bytetree.com/research/aaa. If you have friends or family who you believe can benefit from our service, please spread the word.

Thank you again for your support over the years and Good luck with your investments.

Best Wishes,

Rashpal Sohan

AAA Model Ranking

Model Ranking Date: **29th August 2022**

IMPORTANT: Please Read the Addendum below before buying or selling any Assets.

ADDENDUM

The model was first run on 26th August 2022 this month. At this time, the strongest ranked assets were Energy Commodities, India Equities, World Low Volatility Equities and Agricultural Commodities. The model was rerun on 29th August 2022. The strongest ranked assets remain the same. Buy these assets and sell those which we no longer hold from last month.

▼ For an explanation of what this portfolio is and how to use it, please see the "Model Guide" we've compiled at the end of this issue.

Buy	• **Agriculture Commodities** • **India Equities**
Hold	• **Energy Commodities** • **World Low Volatility Equities**
Sell	• **Gold Bullion** • **UK Cash**

- **World Equities are in a bear market.**
- **It is too early for this to stop now. It will get worse before it gets better.**
- **Since mid-June indices have rallied over hopes that the US Federal Reserve would ease up on rate hikes. However, at the Jackson Hole speech it was made clear that this would not happen.**
- **Expect rising rates, recessionary growth conditions, falling wages and earnings. A recession is due early next year. Stock markets have not fully priced in events.**
- **The strongest trending assets are still Commodities. We hold them but be aware that some are significantly more volatile than other assets.**

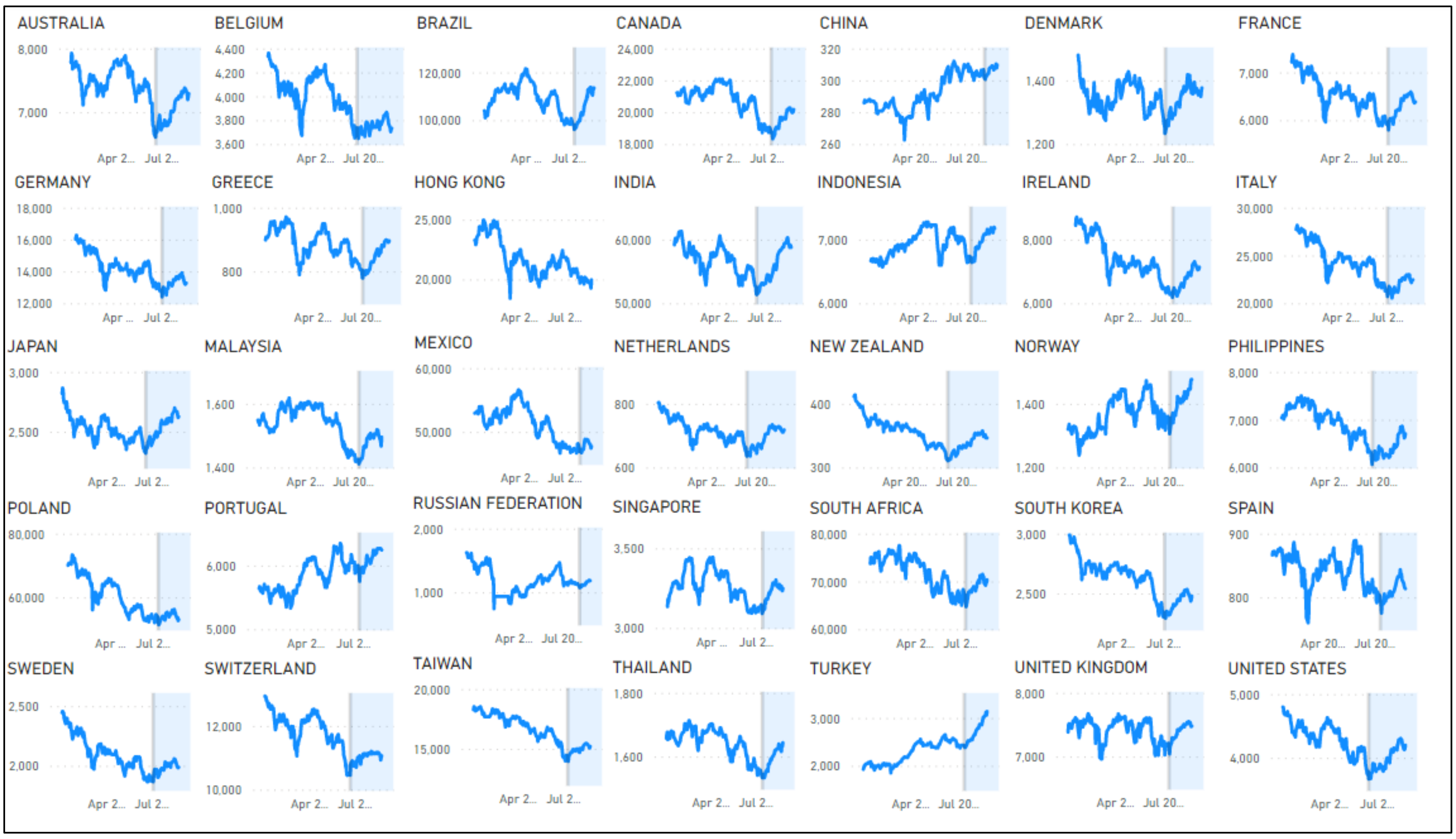
"[the Fed's] overarching focus right now is to bring inflation back down to our 2% goal…[this will cause] some pain to households and businesses…failure to restore price stability would mean far greater pain…restoring price stability will likely require maintaining a restrictive policy stance for some time"
– Fed Chair Powell speaking at the Fed's annual economic symposium in Jackson Hole (26th August 2022)

Bear markets have a special shape to them when plotted on the charts. They fluctuate, making a **pattern of lower-highs and lower-lows**. They are also defined by Moving Averages crossing in the downwards direction. The vast majority of World Equity Markets tend to be in this position trading below their respective 200-day moving averages. **There are plenty of rallies within the overall pattern**. The US Equity Market has experienced its fourth such rally. Each rally is often thought of as a new bull period, but these hopes are always dashed by reality. **The most recent rally was driven by false hopes that the US Fed would stop hiking interest rates**, as some thought they had seen the top in inflationary pressures.

Now, however, the Fed has made it abundantly clear that this is not going to happen. The recent improvement in inflation is a drop of water, falling in the correct bucket, but it is only a drop. **The Fed** will need to see a proper rainfall before it can change course. It **is in the midst of its strongest period of hiking in decades.** It is going to keep going strong. Expect higher rates and slower growth and falling wages. This is thought to be better than the alternative of allowing inflation to run out of control. The pain is the better of the two evils.

When we look at the 36 equity markets that we follow closely, we can see that the majority have rallied since mid-June (Figure 1). Only Hong Kong has missed out. The rally is stronger in some market than others but overall, the pattern of falling highs-and-lows alluded to earlier has been maintained. The correlation of all these moves shows they were all driven by the same expectation that the Fed would change course. That has now stopped. **The rally is over, and markets must drop back.** The period between now and late October is traditionally the weakest season of the year. Sudden crashes of 25% or so can easily occur in this period.

► **Figure 1: The majority of World Equity Markets on our radar have rallied since mid-June**

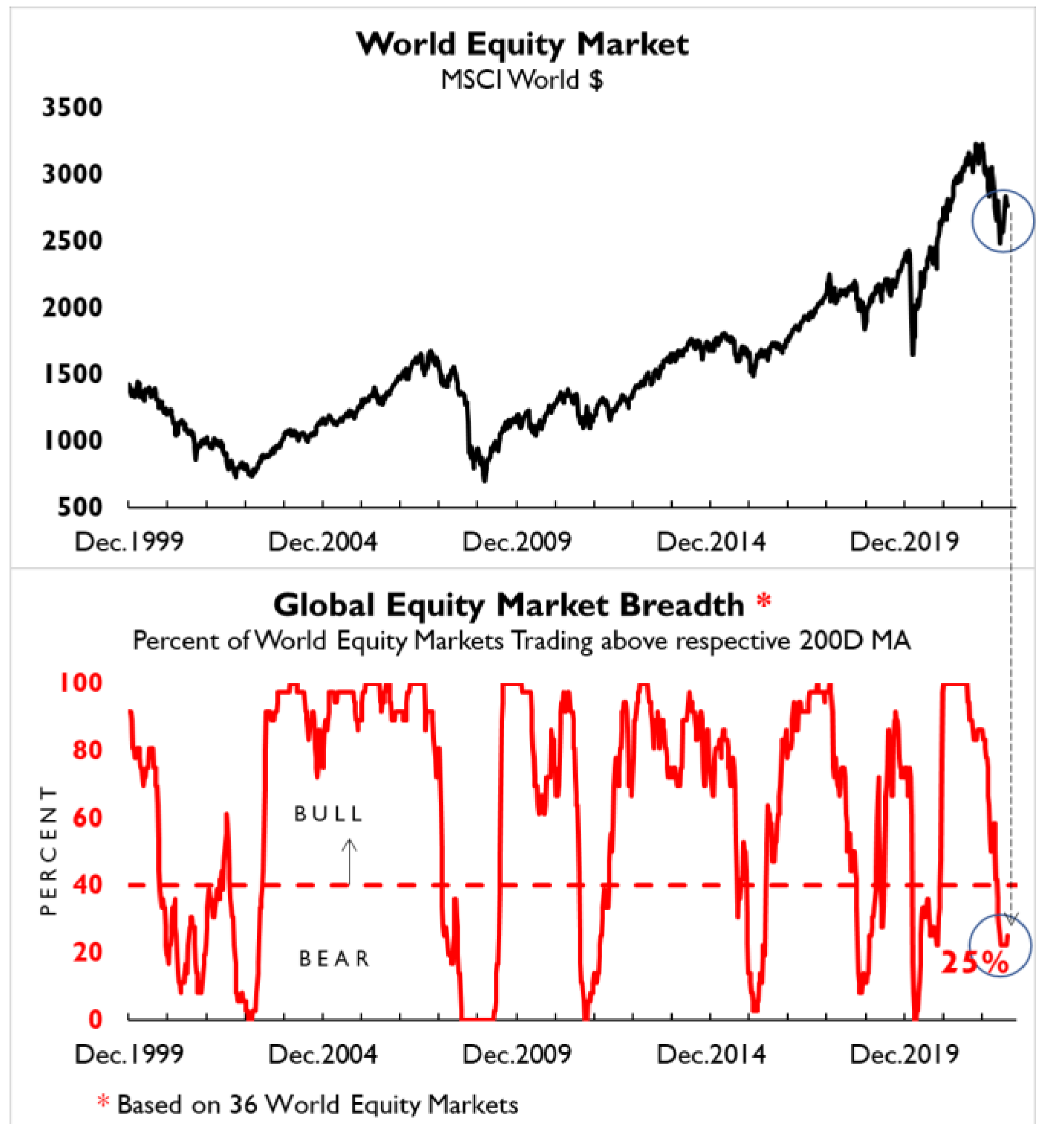


Source: ByteTree, Refinitiv Datastream

The table in Figure 2 shows the performance of these same equity markets since mid-June (third column) and Year-to-Date (last column). We can clearly see that nearly 80% of markets have rallied from mid-June. The US S&P 500 index rose 10.8% over this period whilst Turkey has managed more than double this performance. The rally in the Indian Equity Market has also been strong at 11.9%.This market imports energy so the weak oil price helped a lot. However, **even after the rally, only 28% of markets are in the black this year and a similar number are trading above their respective 200-day moving averages** (Figure 2 chart).

► **Figure 2: The vast majority of World Equity Markets are still in the red this year after the strong rally since mid-June and only 25% are trading above their 200-day moving averages**

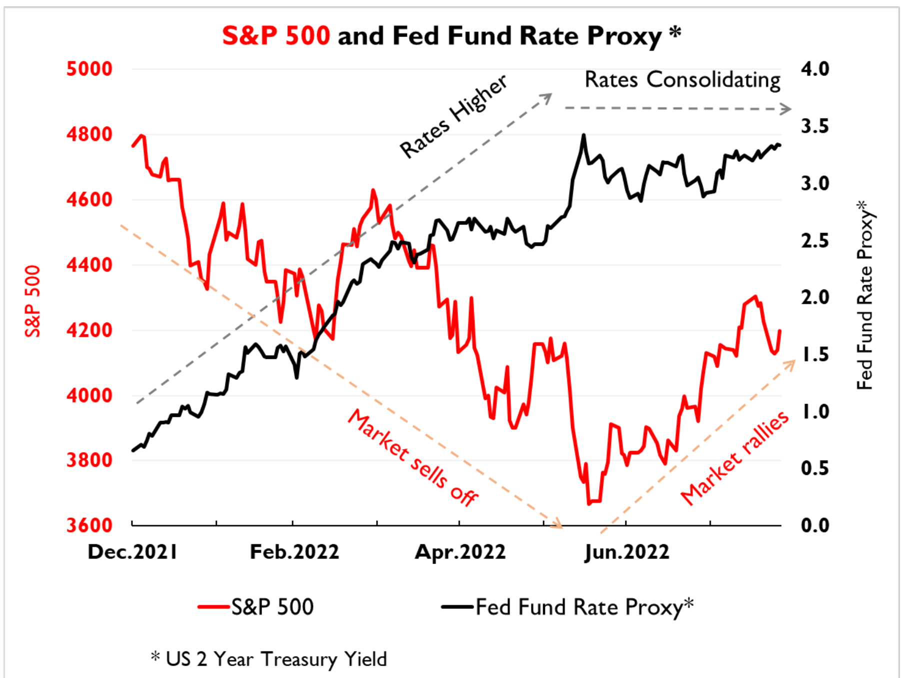
COUNTRY	INDEX	15 Jun 2022 - 25 Aug 2022	YTD to 25 Aug 2022
TURKEY	BIST NATIONAL 100	23.9	68.9
NORWAY	OSLO EXCHANGE ALL SHARE	5.0	12.9
PORTUGAL	PORTUGAL PSI-20	3.9	12.1
INDONESIA	IDX COMPOSITE	2.4	9.0
CHINA	SHANGHAI SE B SHARE	1.0	8.3
BRAZIL	BRAZIL BOVESPA	10.4	8.3
SINGAPORE	STRAITS TIMES INDEX L	4.6	4.0
UNITED KINGDOM	FTSE 100	2.8	1.3
INDIA	S&P BSE (SENSEX) 30 SENSITIVE	11.9	0.9
GREECE	ATHEX COMPOSITE	6.8	0.3
THAILAND	BANGKOK S.E.T.	3.1	-0.9
SOUTH AFRICA	FTSE/JSE ALL SHARE	4.2	-4.6
MALAYSIA	FTSE BURSA MALAYSIA KLCI	2.5	-4.6
CANADA	S&P/TSX COMPOSITE INDEX	2.9	-5.0
SPAIN	MADRID SE GENERAL (IGBM)	0.1	-5.6
PHILIPPINES	PHILIPPINE SE I(PSEi)	6.1	-5.8
AUSTRALIA	ASX ALL ORDINARIES	7.5	-6.3
JAPAN	NIKKEI 500	11.2	-6.8
DENMARK	OMX COPENHAGEN (OMXC)	8.0	-7.0
NETHERLANDS	AEX INDEX (AEX)	8.3	-10.0
MEXICO	MEXICO IPC (BOLSA)	-1.3	-10.4
FRANCE	FRANCE CAC 40	5.8	-10.8
UNITED STATES	S&P 500 COMPOSITE	10.8	-11.9
BELGIUM	BEL 20	-0.7	-13.4
SWITZERLAND	SWISS MARKET (SMI)	2.6	-14.1
INTERNATIONAL	FTSE WORLD $	7.6	-14.5
HONG KONG	HANG SENG	-6.3	-14.7
IRELAND	ISEQ ALL SHARE INDEX	8.4	-15.5
NEW ZEALAND	S&P NEW ZEALAND BMI	10.7	-15.8
GERMANY	DAX PERFORMANCE	-1.6	-16.5
TAIWAN	TAIWAN SE WEIGHED TAIEX	-5.0	-16.6
SOUTH KOREA	KOREA SE COMPOSITE (KOSPI)	1.2	-16.8
SWEDEN	OMX STOCKHOLM 30 (OMXS30)	2.1	-17.9
ITALY	FTSE MIB INDEX	-0.1	-17.9
POLAND	WARSAW GENERAL INDEX	-0.5	-23.4
RUSSIAN FEDERATION	RUSSIA RTS INDEX	-7.6	-25.9
PERCENT POSITIVE		77.8	27.8

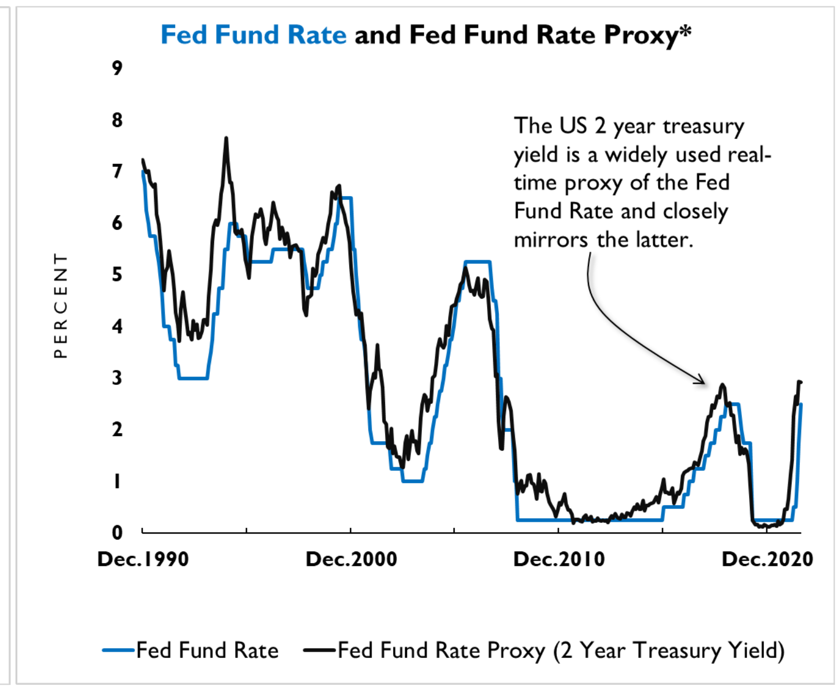


Source: ByteTree, Refinitiv Datastream

To illustrate the reason for the rally **we have shown the performance of the US Equity market** (Figure 2; left chart - red line) **overlaid with a real-time proxy of the Fed Funds rate** (Figure 3; left chart - black line). This proxy, the US 2-year treasury yield, has historically served as a reliable leading indicator of Fed policy closely mirroring the path of Fed Fund rates (Figure 3; right chart). We can see that when rates were being hiked earlier this year, the stock markets fell. However, **since June, the yield on the 2-year treasury has moved sideways as the market has been reappraising its expectations about future Fed Rate hikes. This helped stoke the rally.**

► Figure 3: Equity Markets have rallied as they have reappraised expectations about Fed rate hikes



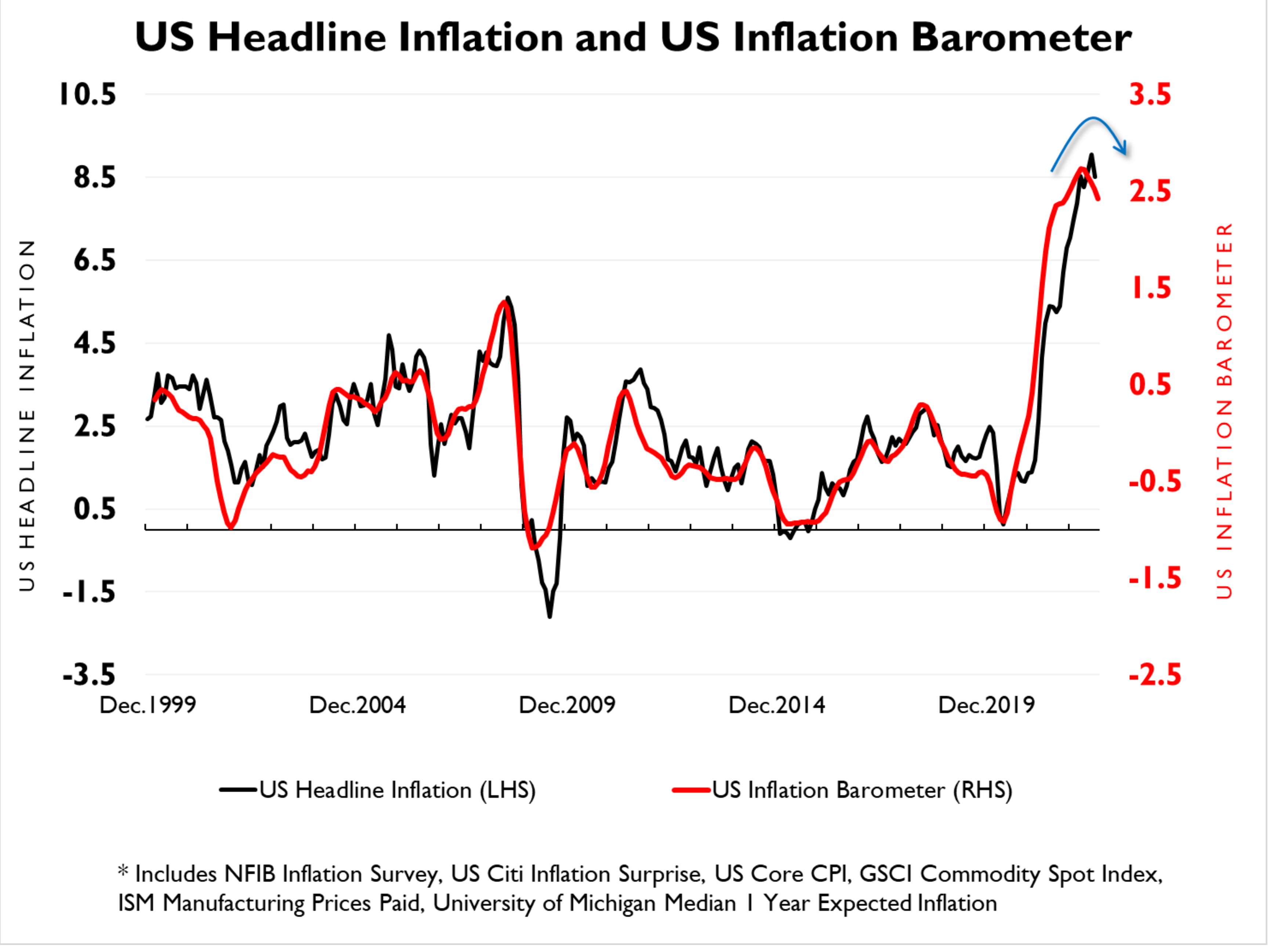


Source: ByteTree, Refinitiv Datastream

The change in market view was not orchestrated in a vacuum, but rather based on the belief that US inflation pressures could be topping out, forcing the Fed to reassess its rate-hiking agenda. Over the last month, we have seen US Headline inflation prints coming in lower than forecast. US Consumer Price Inflation fell from 9.1% in June to 8.5% in July, against expectations of a reading of 8.7% (Figure 4 – black line). The fall has been partly attributed to improving global supply chains and drop in the price of oil and other commodities.

The move lower in the Headline inflation rate is corroborated by the message from our US Inflation barometer which is based on a composite of commonly used inflation measures (Figure 4 – red line). It confirms that **the US Economy has passed peak inflation however**, in the words of the Fed Chair "a single month's improvement falls far short of what the Committee will need to see before we are confident that inflation is moving down". In short, **it is too early to sound the all-clear on the inflation front and for the Federal Reserve to prematurely change its agenda.**

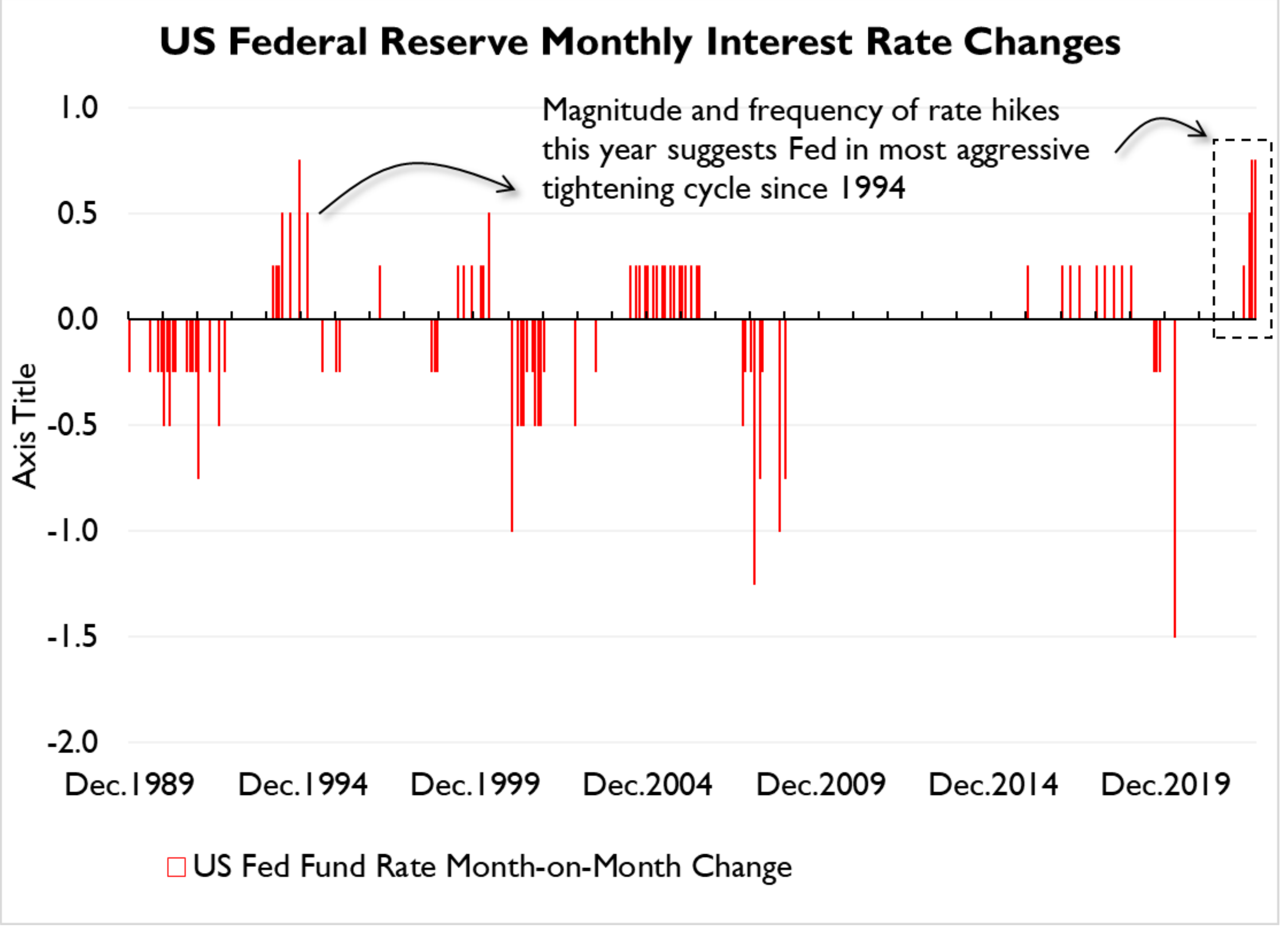
► **Figure 4: The US Inflation Barometer confirms the US Economy has passed peak inflation, but with inflation still very elevated it is premature for the Fed to change its rate-hiking agenda**



Source: ByteTree, Refinitiv Datastream

The magnitude and frequency of US rate hikes this year makes it clear that **the Fed is in the grips of its most aggressive monetary tightening cycle since 1994** (Figure 5). This is the last time that we saw rate hikes of similar magnitude. **Prior to the Fed's announcements last week, investors had been hoping that the Fed Chair might moderate the magnitude and pace of rate increases this year** if inflation were to show further signs of easing. However, the Fed poured cold water on those hope with a very clear message delivered at Jackson Hole: "Restoring price stability will likely require maintaining a restrictive policy stance for some time…[even if this will cause] some pain to households and businesses". In short, **the Fed is saying they would rather keep hiking rates and risk a recession rather than pause and let inflation run out of control**. **The fuel for the equity market rally is over.**

► **Figure 5: The Federal Reserve has been on its most aggressive rate-hiking agenda since 1994 and indicated it's sticking to this script for the foreseeable future**

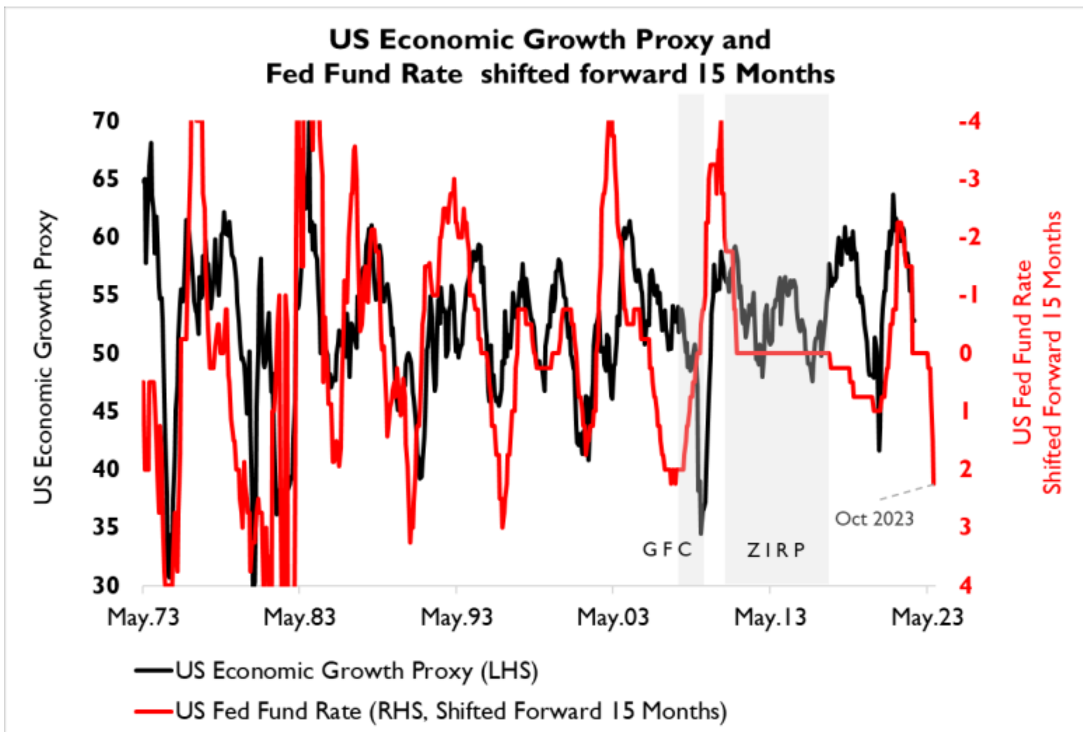


Source: ByteTree, Refinitiv Datastream

Unfortunately, even if the Fed does nothing from here on, a lot of economic pain is already baked into the cake. This is because monetary policy does not work like a light-switch but rather with a lag. Economic theory estimates that interest rate changes take up to 18 months to have a full effect on the economy. We tested this theory by computing the correlation between a widely used proxy of US Economic growth (ISM Manufacturing) and the annual rate of change of Fed Fund rates for various lags ranging between 6 and 24 months.

Our results are shown in Figure 6 (table with heatmap). As can be seen, the optimal lag is between 14 and 16 months, averaging 15. The negative sign of the correlation indicates that higher interest rates lead to slower economic growth and vice-versa. **The chart accompanying this table (Figure 6) plots the two series with Fed Fund rates shifted forward by the optimal lag. It suggests that economic growth in the USA is set to slow significantly heading into 2023.** The probability of a recession is high, and the chances of a soft landing are very low indeed.

► Figure 6: **Even without additional rate hikes, the lag between the impact of Fed hikes and economic growth suggests that the seeds have been sown for more economic pain heading into 2023**



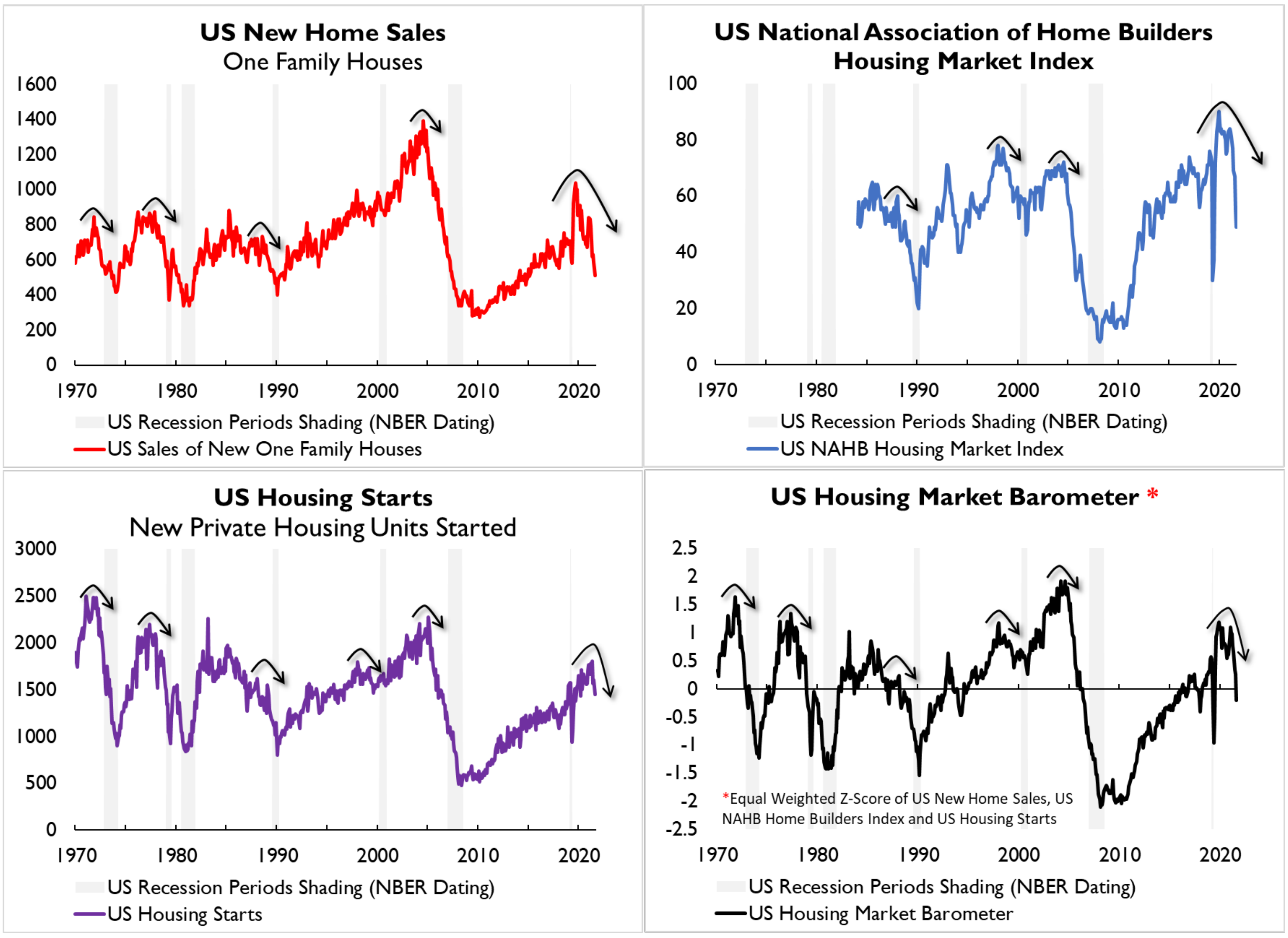
Lag	Correlation
6	-0.147
7	-0.201
8	-0.256
9	-0.303
10	-0.343
11	-0.375
12	-0.401
13	-0.428
14	-0.449
15	-0.451
16	-0.445
17	-0.440
18	-0.427
19	-0.404
20	-0.382
21	-0.365
22	-0.347
23	-0.318
24	-0.287

Correlation between US Economic growth proxy and the Fed Fund Rate appears to suggest that US Fed policy impacts US economic growth around 15 months later. Thus, the Fed rate hikes this year will impact growth next year.

Source: ByteTree, Refinitiv Datastream

There are, however, some parts of the US economy that react more rapidly to interest rate hikes. One of the more important early leaders is the US Housing market. Figure 7 shows a number of important US Housing market indicators ranging from new homes sales, homebuilder sentiment, housing construction started and a composite of the three. As can be seen, all series have a tendency to turn lower before a recession – indicated by the shaded grey bands. **The collapse in these indicators forewarns of significant economic weakness ahead.** There are many Americans who are already living hand-to-mouth. Raising the mortgage rate again will make life very tough indeed**.** Things are going to get much worse before they get better.

► Figure 7: The US Housing market is starting to show significant cracks in the foundation as rate hikes begin to bite



Source: ByteTree, Refinitiv Datastream

This is largely why we do not believe that the equity bear market is over. But the question on everyone's mind is how much further do we have to fall, and how much longer will the bear growl? To answer this question, it helps to put the bear market into perspective, especially after the recent rally. We can do this by analysing the anatomy of past bear markets using the table below (Figure 8). This table showcases the drawdown magnitude, length and economic backdrop surrounding past US bear markets from the middle of the last century.

What we observe is that **most bear markets appear to fall by a quarter, a third or a half.** This heuristic is often used by technicians and whilst not exactly true is a useful approximation. Additionally, in terms of duration, **bear markets typically last just over a year on average**, although the variance can be quite large: between 1 month and 2.5 years. Using the length and drawdown magnitude of the average bear market, **we can see that the current bear market is not that old, nor has it fallen that much** (Figure 8 – last row).

We have just had a good rally based on false hopes that are now dashed. As the rally evaporates, we are headed towards the next low with a drop of at least 20% from here (calculated as the difference between the average and current drop). Additionally, **we can see that normally when the Fed has been hiking interest rates, a recession has culminated more often than not**. History never repeats, but it does rhyme.

► Figure 8: **The Anatomy of a bear market: bear markets typically last just over a year and decline by around 33%.**

Bear Market Low	Length of Bear Market (Months)	% Decline from Peak	Fed Tightening	Recession
Oct 1957	15	-22%	Yes	Yes
Jun 1962	6	-28%	Yes	No
Oct 1966	8	-22%	Yes	No
May 1970	18	-36%	Yes	Yes
Oct 1974	21	-48%	Yes	Yes
Aug 1982	20	-27%	Yes	Yes
Dec 1987	3	-34%	No	No
Oct 1990	3	-20%	No	Yes
Oct 2002	31	-49%	Yes	Yes
Mar 2009	17	-57%	Yes	Yes
Mar 2020	1	-34%	Yes	Yes
Jan 2022	?	-13%	Yes	**?**
Average*	**13**	**-34%**	**82%**	**73%**

* Excluding Jan 2022 Bear Market

Source: ByteTree, ClearBridge Investments

Our rationale is not based only on simple historical averages but rather **is grounded in more fundamental truth.** According to our analysis, **the next leg of the bear market will be driven by a contraction in earnings**. To understand exactly why, we need to appreciate that **the intrinsic value of any stock market [P] can be expressed as the product of the Price-to-Earnings Ratio ["P/E" Ratio] and the Earnings-Per-Share** ["E"]. Putting this into simple mathematical equations, what we are saying is that:

$$\boldsymbol{P = \frac{P}{E} \times E}$$

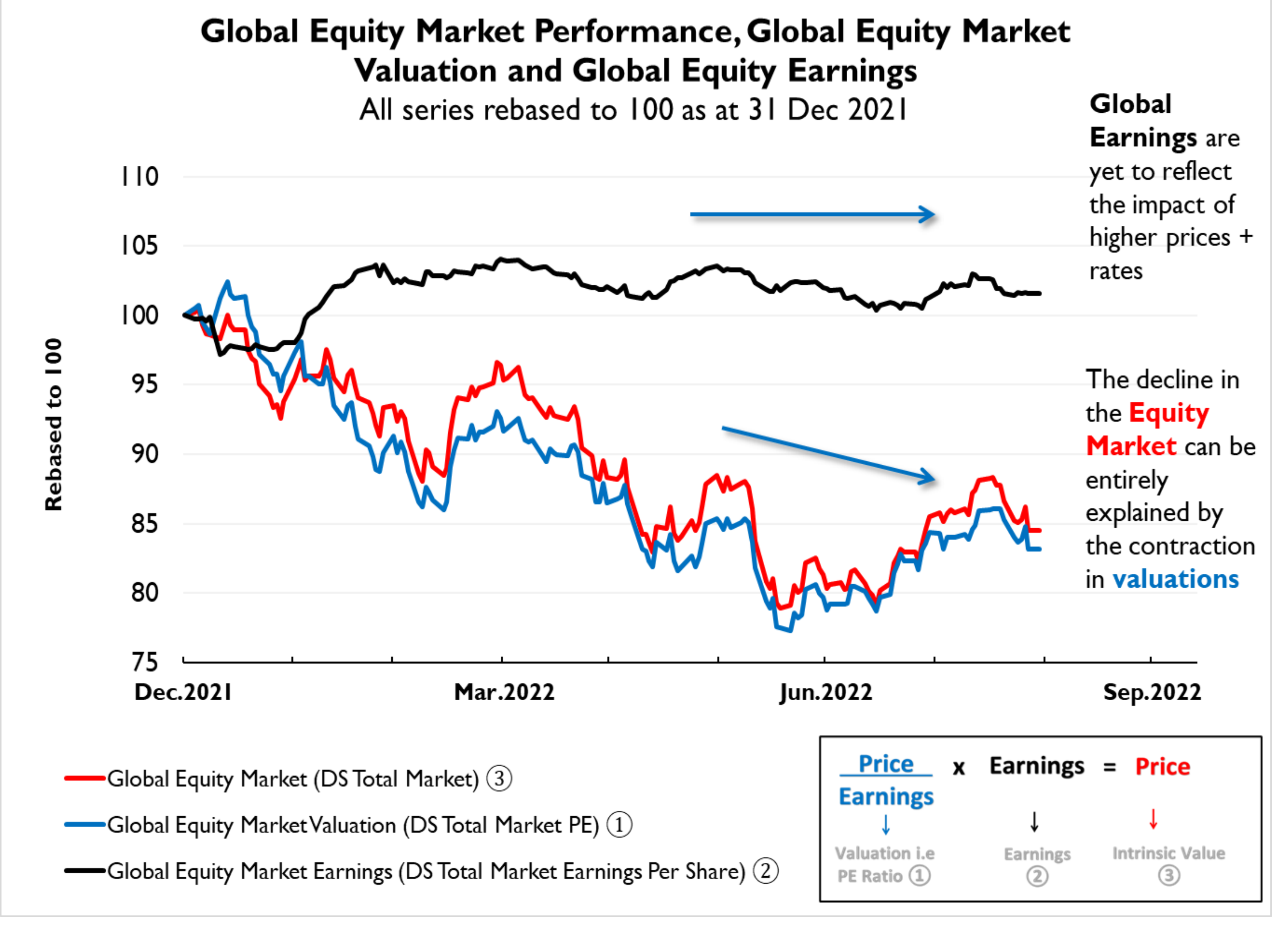
It's easy to see that the "E" in the "P/E" Ratio cancels with the "E" from Earnings-per-share leaving P = P as shown below:

$$\boldsymbol{P = \frac{P}{\cancel{E}} \times \cancel{E}}$$

This very useful formulation, known as the "Absolute PE Method", allows us to breakdown the performance of the market into two key components: the ratings of the earnings ("P/E" Ratio) and the earnings themselves ("E"). **In a bear market, the first fall is often associated with the rating dropping back to a lower growth expectation. Later, if earnings drop then this also feeds through to further drops in the market.**

Figure 9 plots the performance of the World Equity Market (Figure 9; red line) along with the two components mentioned earlier: the P/E Ratio (Figure 9; blue line) and the Earnings-Per-Share (Figure 9; black line**). We can see that at present, the decline in the World Equity Market this year has been driven solely by a fall in the rating** ("P/E" Ratio). Earnings have hardly budged, but that will change as we head into recession.

► **Figure 9: The drop in the global equity market this year can be explained primarily by valuation contraction**



Source: ByteTree, Refinitiv Datastream

Figure 10 plots the same Earnings-per-share ("E") shown in Figure 9 above, however this time as an annual rate of change along with a widely used proxy for global economic growth. As can be seen, the two series are highly correlated, with the global growth series leading by 6 months. In other words, **as economic growth continues to drop, so will global equity earnings. In our view, this will drive the next leg of the bear market.**

► Figure 10: As the global economy heads into recession earnings are likely to fall and drive the next leg of the bear market

Source: ByteTree, Refinitiv Datastream

The AAA Model continues to hold Commodities as an inflation hedge even after the recent corrections. However, we need to remain cognizant that these assets are volatile and thus prone to large corrections. To illustrate this, we can calculate the volatility of the different assets in the AAA Model over five-years (Figure 11 – column 3) and rank them in descending order. When we do this, we find Commodities feature either at the very top of the table or towards the top. Gold is the exception, but it is still as volatile as Global Equities.

If we now rank these assets again, based on one-year volatility (Figure 11 – column 4) and compare the difference with the five-year volatility figures, we can see that **not only are Commodities the most volatile asset class in the AAA Model, but they are even more volatile than earlier** (Figure 11 – column 5).

What this volatility means for the AAA Model is that in the short run the volatile moves can make the rankings "look wrong" for a while. However, it is the strength of trend that later bails out the situation. We have to mention this as half of the Strongest Ranked Assets are Commodities. It is still too early to sell out of them now, but we must be prepared to live with the volatility. We did lighten our holdings earlier by coming out of metals, but the model still holds Energy and Agriculture commodities as they are trending strongly.

► Figure 11: Commodities are the most volatile assets in the AAA Model so investors must be prepared to handle the volatility

Asset	ETF	5 Year Vol [a]	1 Year Vol [b]	Difference b - a
Energy Commodities	AIGE	30.9	38.5	7.6
China Equities	HMCH	21.7	22.5	0.8
India Equities	XCX5	18.9	16.4	-2.5
Agricultural Commodities	AGAP	17.7	20.3	2.6
Industrial Metal Commodities	AIGI	16.7	25.0	8.3
EU Equities	CEU1	15.1	9.2	-5.8
EM Equities	VFEM	15.0	8.1	-7.0
UK Equities	FTAL	14.5	8.3	-6.2
US Equities	CSP1	14.4	12.8	-1.5
Inverse UK Equities	XUKS	13.8	8.7	-5.2
Japan Equities	SJPA	13.7	13.5	-0.2
World Equities	SWDA	13.6	11.5	-2.1
World Quality Equities	IWFQ	13.4	12.3	-1.1
Gold Bullion	PHGP	12.1	9.2	-2.9
UK Index Linked Gilts	INXG	11.3	12.1	0.8
Low Volatility Equities	MVOL	10.8	10.3	-0.5
EM Govt. Bonds ($)	JPEA	10.0	8.3	-1.7
Global Govt. Bonds	IGLA	8.2	6.4	-1.9
UK Corporate Bonds	SLXX	7.4	6.5	-0.8
Global High yield bonds	HYLA	7.0	5.5	-1.5
UK Gilts	IGLT	6.9	8.2	1.2
Global Corporate Bonds	CRPA	6.8	6.3	-0.5

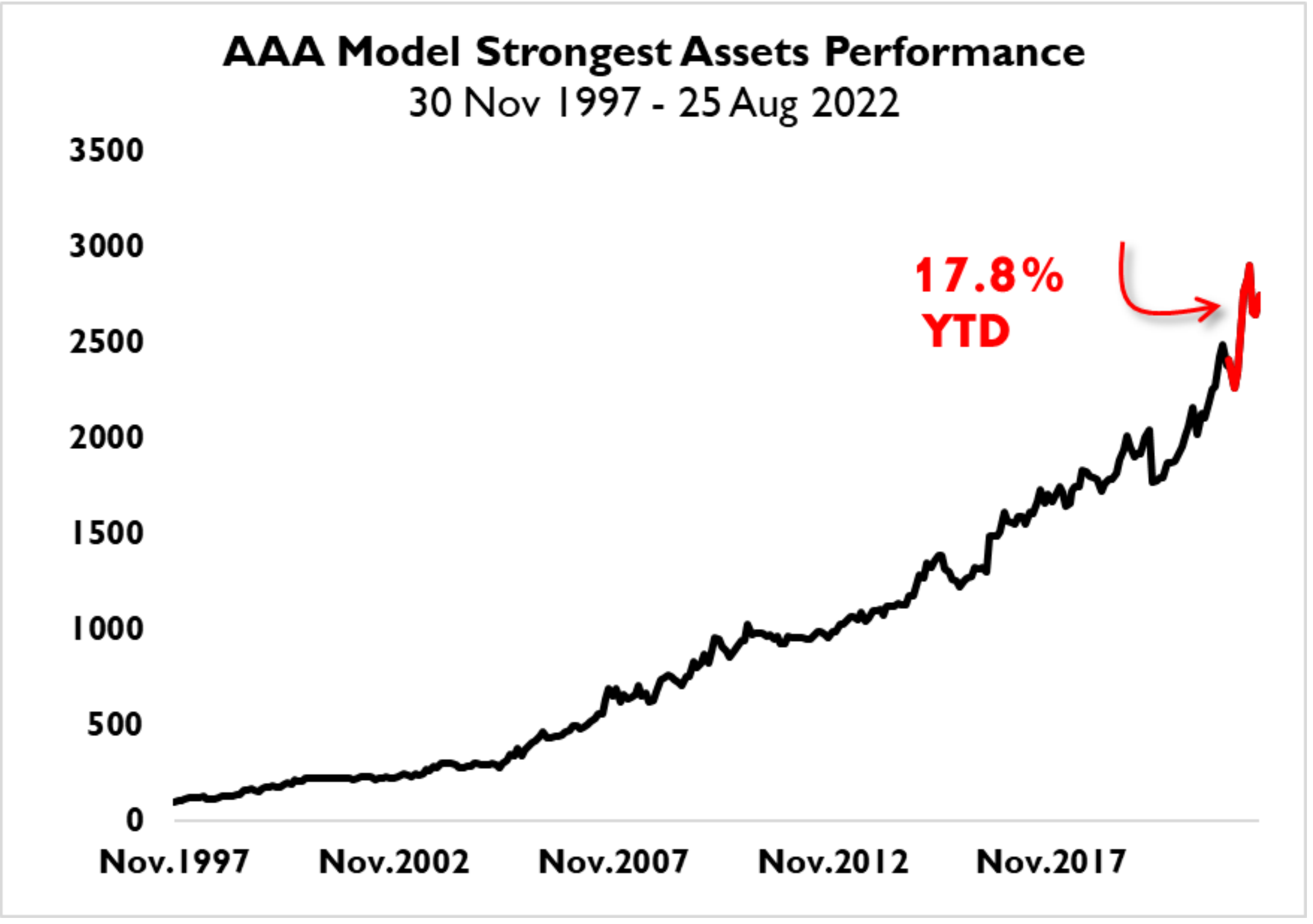
Source: ByteTree, Refinitiv Datastream

We can see that the volatility of commodities has increased this year but the model has done well in covering this with some diversification. It is still up 17.8% this year, having been up over 20% at the peak. The Russia war is holding energy commodity prices elevated and the Americans seem keen on starting another war with China. Most high-tech devices now use chips coming from one factory in Taiwan, so why not start a war there ? We are living in a world that is on the edge of craziness. The volatility in commodities may well help us instead of harming us. **We remain confident of the model and how it adapts.**

There is only one country stock market in the top category and that is India. It is the star of Asia, has strong demographics and is also a net importer of energy. The recent drop in oil has clearly helped. However, **if the price of oil rises again then this will harm the performance of this market.** We have often admitted that this is our favourite long-term market and that has not changed.

Good luck in future. **Expect more volatile swings. The Adaptive Asset Allocation Model is keeping us in Commodities** for now as the best way to survive a tough period in overvalued stock markets. **With the global economy heading for a recession next year this could easily change**, but our attitude is not to try to second guess the model – only adapt with it. Avoid the bear, and certainly do not poke him.

► **Figure 12: Even after the correction in commodities this year the AAA Model is weathering the storm quite well and is up 17.8% Year-to-Date**



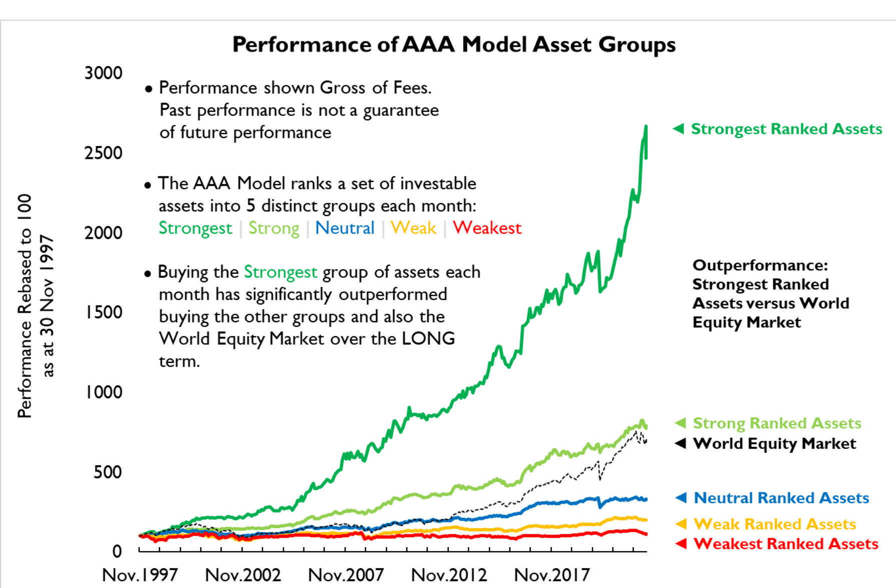
Source: ByteTree, Refinitiv Datastream

►Model Guide: What is the AAA model and how to use it?

- The AAA model is a technical model which ranks a list of important assets using our proprietary *Business Cycle Adaptive Trend* ranking algorithm.
- As different assets outperform at different stages of the business cycle*, the AAA model aims to identify which are the strongest and weakest trending assets at each phase of the business cycle.
- The model is run monthly and outputs the complete list of ranked assets divided into 5 distinct groups based on their trend-strength: Strongest, Strong, Neutral, Weak and Weakest.
- Whilst we will show the complete list of ranked assets as a table in the Appendix (Figure B), the assets to buy each month are the ones labelled as "STRONGEST".
- The chart below (Figure A) shows the difference in performance between buying the assets labelled as Strongest each month compared to buying the others [Strong, Neutral, Weak and Weakest]. The main point to take away from this chart is that the Strongest trending assets significantly outperform the other groups over the long term hence are the ones to buy. Of course, investors also need to bear in mind that **past performance is never a guarantee of future results.**
- The rankings are updated monthly and any changes to the rankings need to be mirrored in your portfolio [buy any assets that are promoted to the Strongest asset group each month and sell any that have left the group]. These trends do not change as rapidly as those for individual shares and typically means holding four assets each month.
- The strongest assets can be purchased using Exchange Traded Funds (ETFs) or Managed Funds. A representative sample of the former is shown in the Appendix for illustration purposes however this list should not be considered recommendations.

* Greed assets [risk assets] generally do better in times of economic expansion and investor risk-adoration. Conversely, Fear assets [defensive assets] generally do better in times of economic contraction and investor risk-aversion.

► Figure A: Buying the Strongest ranked assets has significantly outperformed the other groups over the long term



► Figure B: The AAA Model ranks a list of key assets each month but only the Strongest assets should be bought

	August 2022	Representative ETF Name Distributing ETF Name; Accumulating ETF Name	Representative ETF Ticker	
			Distributing*	Accumulating*
Strongest	Energy Commodities	No Distributing ETF ; ETFS Commodity Securities Energy DJ-UBSCI	-	AIGE
	India Equities	No Distributing ETF ; DB X-TRACKERS MSCI India Index UCITS ETF ACC	-	XCX5
	Agricultural Commodities	No Distributing ETF ; ETFS Commodity Securities Agriculture Dow Jones UBS CI	-	AGAP
	World Low Volatility Equities	No Distributing ETF ; iShares Edge MSCI World Minimum Volatility UCITS ETF	-	MVOL
Strong	Gold Bullion	No Distributing ETF ; ETFS Physical Gold	-	PHGP
	US Equities	iShares S&P 500 UCITS ETF USD DIST ; ISHRS Core S&P 500 UCITS USD (ACC) ETF	IUSA	CSP1
	EM Equities	Vanguard FTSE Emerging Markets UCITS ETF USD ; No Accumulating ETF	VFEM	-
	EM Govt. Bonds ($)	iShares J.P. Morgan USD EM Bond UCITS ETF DIST ; iShares J.P. Morgan USD EM Bond UCITS ETF ACC	SEMB	JPEA
	UK Cash	No Distributing ETF ; No Accumulating ETF	-	-
Neutral	UK Equities	iShares Core FTSE 100 UCITS ETF DIST ; SPDR FTSE UK All Share UCITS ETF	ISF	FTAL
	Industrial Metals	No Distributing ETF ; ETFS Industrial Metals ETC	-	AIGI
	Global High yield	iShares Global High Yield Corp. Bond UCITS ETF DIST ; iShares Global High Yield Corp. Bond UCITS ETF ACC	IGHY	HYLA
	World Equities	iShares MSCI World UCITS ETF USD DIST ; iShares Core MSCI World UCITS ETF USD ACC	IWRD	SWDA
	Japan Equities	iShares MSCI Japan UCITS ETF DIST ; iShares Core MSCI Japan IMI UCITS ETF ACC	IJPN	SJPA
Weak	Inverse UK Equities	No Distributing ETF ; DB X-TRACKERS FTSE 100 SHORT DAILY ETF	-	XUKS
	Global Govt Bond	iShares Global Govt. Bond (USD) DIST UCITS ETF ; iShares Global Govt Bond UCITS (ACC) ETF	SGLO	IGLA
	China Equities	HSBC MSCI CHINA ETF ; No Accumulating ETF	HMCH	-
	World Quality Equities	No Distributing ETF ; iShares Edge MSCI World Quality Factor UCITS ETF	-	IWFQ
	EU Equities	iShares MSCI Europe ex UK UCITS ETF EUR (DIST) ; iShares MSCI EMU UCITS ETF ACC	IEUX	CEU1
Weakest	UK Corporate Bonds	iShares Core £ Corp Bond GBP UCITS ETF ; No Accumulating ETF	SLXX	-
	UK Gilts	iShares Core UK Gilts UCITS ETF GBP ; No Accumulating ETF	IGLT	-
	Global Corporate Bonds	iShares Global Corp Bond UCITS (USD) DIST ; iShares Global Corp Bond UCITS (USD) ACC	CRPS	CRPA
	UK Index Linked Gilts	iShares Index Linked Gilts UCITS ETF ; No Accumulating ETF	INXG	-

* *Distributing* units pay out dividends and income whilst *Accumulating* units reinvest it. Please select the ones that suit you. In some cases only one option is available.

Appendix

AAA Model Rankings GBP Portfolio with representative ETF Tickers

	August 2022	Representative ETF Name Distributing ETF Name; Accumulating ETF Name	Representative ETF Ticker	
			Distributing*	Accumulating*
Strongest	Energy Commodities	No Distributing ETF ; ETFS Commodity Securities Energy DJ-UBSCI	-	AIGE
	India Equities	No Distributing ETF ; DB X-TRACKERS MSCI India Index UCITS ETF ACC	-	XCX5
	Agricultural Commodities	No Distributing ETF ; ETFS Commodity Securities Agriculture Dow Jones UBS CI	-	AGAP
	World Low Volatility Equities	No Distributing ETF ; iShares Edge MSCI World Minimum Volatility UCITS ETF	-	MVOL
Strong	Gold Bullion	No Distributing ETF ; ETFS Physical Gold	-	PHGP
	US Equities	iShares S&P 500 UCITS ETF USD DIST ; ISHRS Core S&P 500 UCITS USD (ACC) ETF	IUSA	CSP1
	EM Equities	Vanguard FTSE Emerging Markets UCITS ETF USD ; No Accumulating ETF	VFEM	-
	EM Govt. Bonds ($)	iShares J.P. Morgan USD EM Bond UCITS ETF DIST ; iShares J.P. Morgan USD EM Bond UCITS ETF ACC	SEMB	JPEA
	UK Cash	No Distributing ETF ; No Accumulating ETF	-	-
Neutral	UK Equities	iShares Core FTSE 100 UCITS ETF DIST ; SPDR FTSE UK All Share UCITS ETF	ISF	FTAL
	Industrial Metals	No Distributing ETF ; ETFS Industrial Metals ETC	-	AIGI
	Global High yield	iShares Global High Yield Corp. Bond UCITS ETF DIST ; iShares Global High Yield Corp. Bond UCITS ETF ACC	IGHY	HYLA
	World Equities	iShares MSCI World UCITS ETF USD DIST ; iShares Core MSCI World UCITS ETF USD ACC	IWRD	SWDA
	Japan Equities	iShares MSCI Japan UCITS ETF DIST ; iShares Core MSCI Japan IMI UCITS ETF ACC	IJPN	SJPA
Weak	Inverse UK Equities	No Distributing ETF ; DB X-TRACKERS FTSE 100 SHORT DAILY ETF	-	XUKS
	Global Govt Bond	iShares Global Govt. Bond (USD) DIST UCITS ETF ; iShares Global Govt Bond UCITS (ACC) ETF	SGLO	IGLA
	China Equities	HSBC MSCI CHINA ETF ; No Accumulating ETF	HMCH	-
	World Quality Equities	No Distributing ETF ; iShares Edge MSCI World Quality Factor UCITS ETF	-	IWFQ
	EU Equities	iShares MSCI Europe ex UK UCITS ETF EUR (DIST) ; iShares MSCI EMU UCITS ETF ACC	IEUX	CEU1
Weakest	UK Corporate Bonds	iShares Core £ Corp Bond GBP UCITS ETF ; No Accumulating ETF	SLXX	-
	UK Gilts	iShares Core UK Gilts UCITS ETF GBP ; No Accumulating ETF	IGLT	-
	Global Corporate Bonds	iShares Global Corp Bond UCITS (USD) DIST ; iShares Global Corp Bond UCITS (USD) ACC	CRPS	CRPA
	UK Index Linked Gilts	iShares Index Linked Gilts UCITS ETF ; No Accumulating ETF	INXG	-

* *Distributing* units pay out dividends and income whilst *Accumulating* units reinvest it. Please select the ones that suit you. In some cases only one option is available.

Source: ByteTree, Refinitiv Datastream

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