28th Feb 2023

The Adaptive Asset Allocation Report

Issue No. 9

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.

Rent. Don't Own.

Dear Readers,

Our AAA Model is engaged in a pain trade to buy the previously weakest equity markets. It is a dash-to-trash and has been driven by hopes of a Fed pivot and economic soft landing. The weakest trending markets were significantly cheaper than the strongest ones.

The headline USA inflation rate, which was over 9%, has now declined to around 6%. Investors have extrapolated this to mean that the worst for inflation is behind us, so interest rates won't have to climb anymore, and an economic soft landing is on the cards. Some people want to believe this even though a large amount of evidence points to this line of thinking as being wrong.

However, this pain trade can go on for longer. From a seasonal point of view, we are in the strongest part of the year for equities. We are also in the third year of the US Presidential cycle, which is normally the strongest for US equities. At the same time, technical breadth indicator readings remain very strong. But make no mistake, even though the momentum behind the trend is strong, this remains a trade and not a long-term investment. Rent the rally whilst it lasts, but do not get suckered into owning it, believing it's the start of a new bull market. The facts do not support this view.

Finally, think about putting in place a portfolio stop-loss system. In a bear market, we need to preserve capital. As we are still in a bear market and own equities, there is a risk that the portfolio could be hit by a 10% crash (or more) before the model adapts. We saw this during the pandemic-led selloff in 2020. So, we need to pick a level of portfolio drawdown − say 10% − which if breached, forces us to cut our losses and liquidate the portfolio. If this happens, you don't need to wait for the next AAA Report, you just act! However, don't make it too tight otherwise normal volatility will trigger early selling when there is no need.

Remember, if the portfolio drawdown is 50%, then we have to double our money just to get back on side. This is hard to do but recovering from a 10% drop is easier. We say this because we are in a global bear market, see a recession coming and believe losing money against this backdrop is very easy.

In short, rent the equity rally (don't own it), have a portfolio stop-loss in place and stay aware. 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,

Apologies for sending the document a few days later than usual. I had to do some number crunching related to a few questions I have been receiving from our readers.

From the questions, it's clear that the performance of the AAA Model has been less than stellar in recent months and is leading some readers to question whether it's "broken" and can still work in these volatile markets? My conclusion is that yes ~~we~~ it can, but returns will not be as high as they have in the past. At the same time, implementing the strategy will remain challenging. Whilst trend following is simple, following the strategy is not.

I am aware that AAA readers are fed-up of the Model recommending assets one month, only to see them reverse the next (hint: China last month). There's a reason why this behaviour is seen more frequently with some assets than others. I have delved into this, and proposed a solution.

There are a few new pages in the Appendix which are worth taking a look at. Appendix 3 ranks the Assets by their Risk Profile. Notice where the China Equity Market ranks! Appendix 4 tabulates the performance of the AAA Model Strongest Assets (the normal model) and the Strongest Assets excluding the Riskiest Assets. The reason we've included the latter is because we understand that not everyone is willing or able to hold the very riskiest of assets – like Energy Commodities, India Equities, China Equities, etc. So if you ever find any of these assets ranked amongst the Strongest Assets, and you don't want to hold them because they don't align with your risk profile, then just skip them and run your finger down the ranking table until you hit the next strongest asset which do. Repeat until you own the 4 top ranked assets.

Our model rankings highlight that the pain trade continues. The strongest trending assets are all equities. However, unlike the market, we must not get overly excited with the drop in US inflation and expectations of a soft landing. Monetary policies have a time lag of 14-18 months before their full effects are felt in the economy. This means that even if no further actions are taken now, we will still experience the impact of the Fed's tightening policies last year.

The situation is not as good as it seems and being "less bad" does not equate to being good. All indicators point towards an impending recession, with some suggesting that it may have already begun. It's crucial to remain vigilant and not complacent.

If you have any questions or comments, please write in to aaa@bytetree.com. You can find our research online 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
GBP Portfolio

Model Ranking Date: **28th February 2023**

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

ADDENDUM

The model was first run on 17th February 2023 this month. At this time, the strongest ranked assets were Europe Equities, UK Equities, China Equities and World Quality Equities. The model was rerun on 28th of February 2023 and the strongest assets are now EU Equities, UK Equities, World Equities and World Quality Equities. Buy or Hold these.

▼ 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	• **UK Equities** • **World Equities** • **World Quality Equities**
Hold	• **Europe Equities**
Sell	• **China Equities** • **Japan Equities** • **Global High yield**

- **The AAA model started a pain trade last month: owning equities. This trade has so much momentum behind it that it appears poised to continue.**
- **The top two groups in our ranking table are all equity markets. Bonds and commodities are to be avoided.**
- **In the USA, inflation is off the top and investors are betting on a soft landing for the economy. In practice, there is little chance of this happening.**
- **Rent the rally but be prepared to sell later this year as the model adapts.**
- **We also need to put in place a portfolio stop-loss level which if breached, forces us to cut our losses and liquidate the portfolio.**

“It is like a seal trying to balance a ball on its nose for hours on end – it can be done, but only with great difficulty.”

– BCA Research [explaining why the Fed is unlikely to achieve a soft landing]

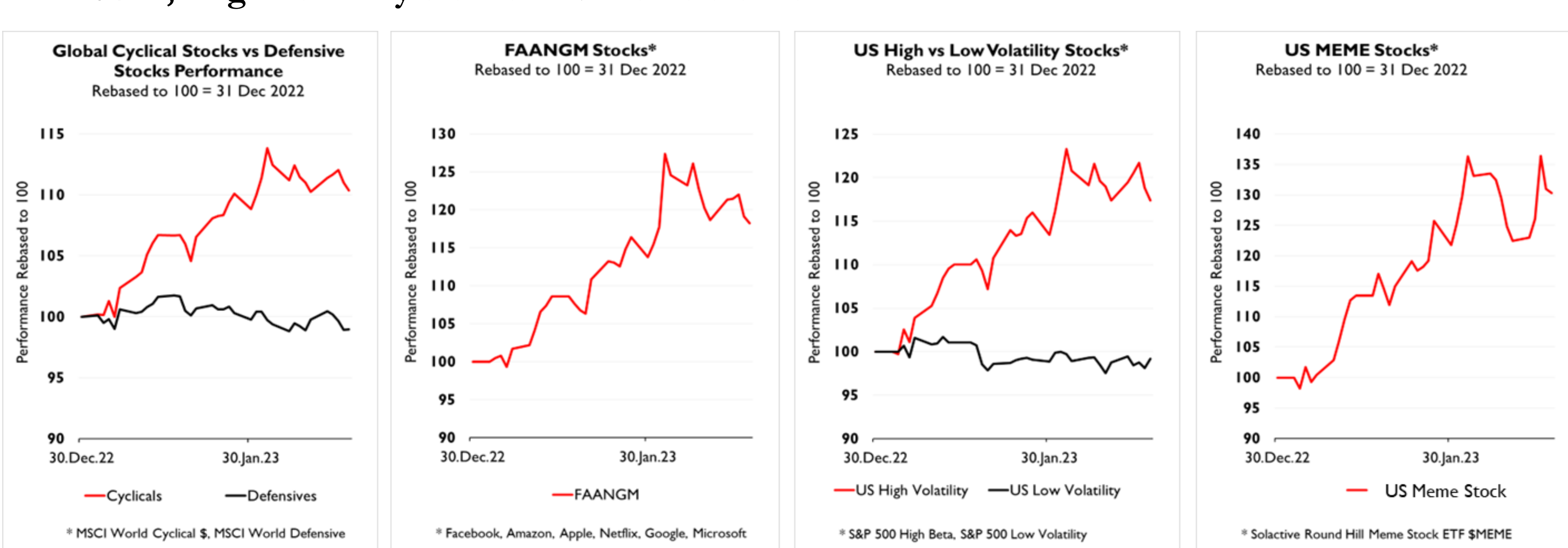
A month ago, the AAA model made a confounding move. It signaled a switch into equities even though recession risks have been rising. The trend in that direction has increased and is in full momentum. The model is now entirely long high-risk assets and the top two groups in the AAA Model portfolio are now all equities. We can see that what has rallied the most is the lower quality investments (Figure 1). These include Meme stocks, High volatility stocks , Cryptos, FAANGM stocks (Figure 1) etc. **We called it the “Pain Trade”. The message now is to take more pain, but not to forget that it is only a trade**. We continue to rent this rally, but do not want to own it.

Pain trades of this type are not unusual. Professional traders know how to navigate them, but they are hard for others. **We are still in a global equity bear market and early in the move** – so it will last longer and go lower than current levels. For a long time, everyone has wanted to only own the “good” stocks and avoid the rest. They had done so to such an extent that the valuation basis had been considerably stretched. **A considerable valuation gap has developed between the “good” and “bad” equities.** It has become clear that the gap must close. The most pumped-up and over-borrowed market is the USA. **That has partly been driving this “dash-to-trash”.**

The other reason for this rally is misguided hopes of an economic soft landing. The apparent good news is that the US headline inflation rate, having been as high as 9.2%, has now dropped back to just over 6%. Investors are extrapolating this trend to mean that the worst for inflation is behind us, the Fed won’t have to raise interest rates anymore – and could in fact lower them – making an economic soft landing more plausible. **Authorities like to put a good spin on the news and increase confidence.** We’ve seen this movie before.

We also have to remember that **seasonally, we are in the strongest part of the year.** From late November up into the New year is a good trade. Secondly, that can go as far as May. Finally, **we are in the third year of the Presidential election cycle**, which has **historically been the best year for US Equities** out of the four. Sounds like a great story, and it is one we have heard before, but it won’t last. For now, **the momentum is so high that it is propping up the market,** so it is worth trading**. But when it reverses, the subsequent correction will be severe.** So, we **do not want to own this rally – just rent it**. All the evidence points to a recession coming, and it could be severe. Many of the great and famous investors like Munger, Grantham and many others are clear that the setback is under way. They do not want people to buy anything yet. In the case of the US dollar and stocks, the risks are too high to hold. Rent the rally elsewhere. Currently that **includes European and UK stocks on the AAA Model.**

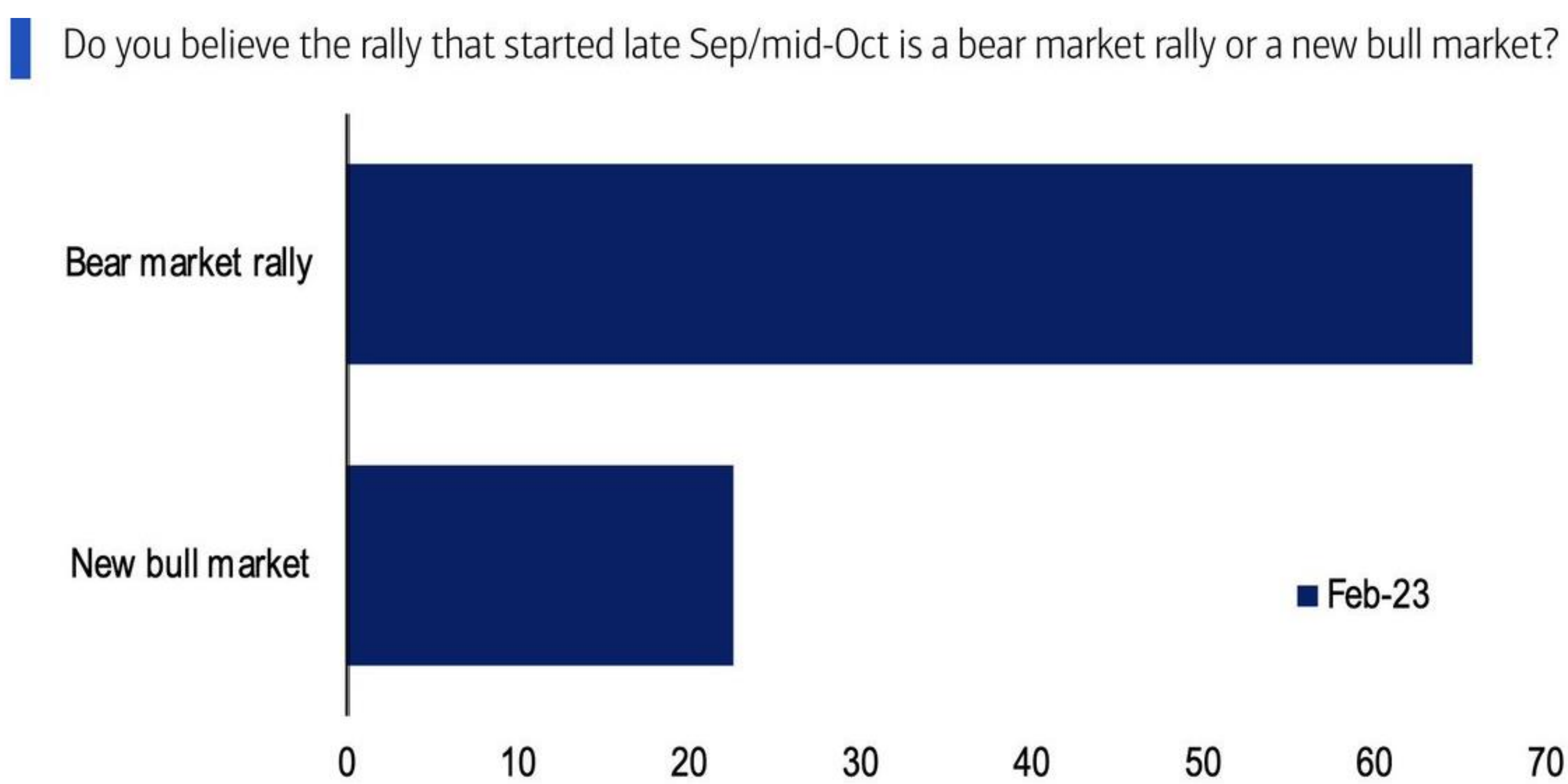
► **Figure 1: The most risk segments of the market have rallied including cyclical stocks, FAANGM, High volatility stocks and Meme stocks**



Source: ByteTree, Refinitiv Datastream

Professional investors have not been taken in. According to the results of the latest BofA ML Global Fund Manager Survey – a closely followed survey that polls the views of approximately 300 institutional, mutual and hedge fund managers around the world – **the majority see this rally for what it really is: a bear market rally** (Figure 2). However, it can go on further yet, but we do not want to stay in longer than we have to. Volatility normally picks up as we get near the inflection point, so **we can expect a choppy ride.**

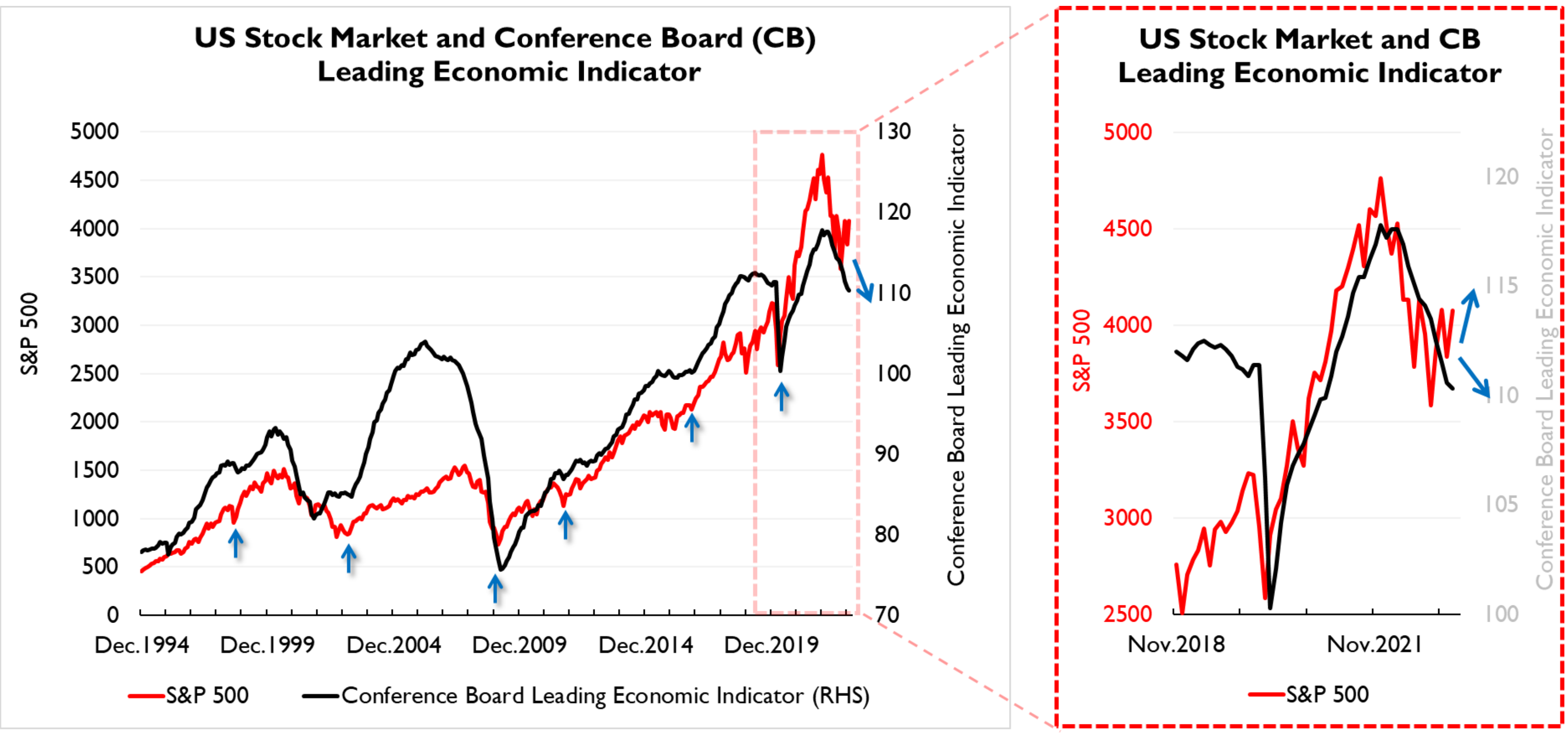
► **Figure 2: Two in every three institutional investors believes that the current rally is a bear market rally and not the start of a new bull market**



Source: ByteTree, BofA Global Fund Manager Survey

Historically, the US stock market has not bottomed out until the Conference Board Leading Economic Indicator has managed to do so. This is depicted using the blue arrows in Figure 3 below. I have been using this indicator for years – in fact since Gail Fosler used to crunch the numbers. As far as economic indicators go, this one has a great track record of predicting turning points in the stock market. There has only been one minor false signal in decades. Most recently, **we have seen the indicator fall for 10 consecutive months whereas the stock market has bottomed out and continued to rally**. What this tells us is that **one of these has got it wrong – and we believe it's the stock market.** When economic reality catches up, there will be a nasty correction.

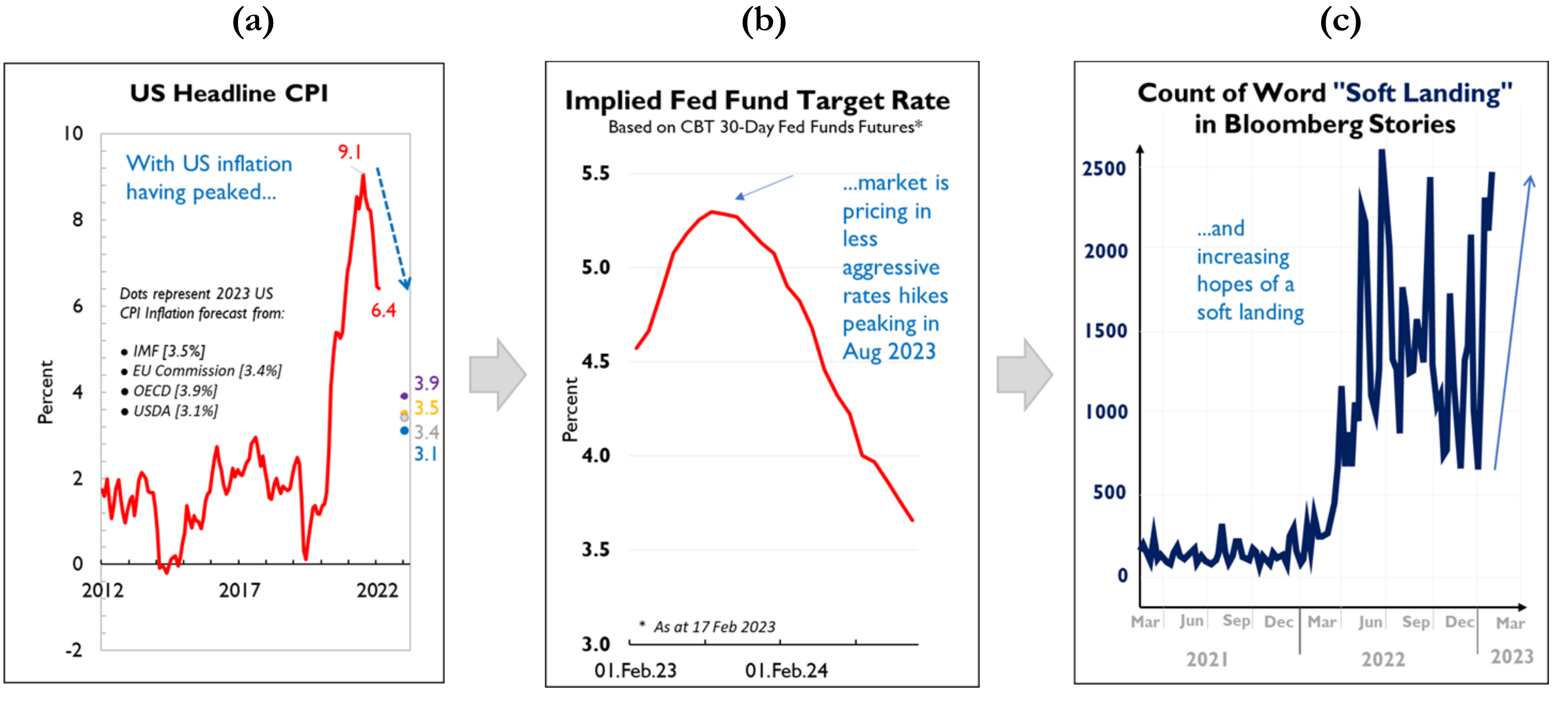
► Figure 3: Historically the US stock market has not bottomed until the CB LEI has bottomed making the current stock market rally unsustainable



Source: ByteTree, Refinitiv Datastream

We can see where the current optimism emanates from. With the US inflation rate having peaked and coming off (Figure 4a), the market is convinced that will lead to less aggressive rate hikes before they peak and start to come back down again (Figure 4b). **The hope is that this will make an economic soft landing more feasible**. You only have to look at how many times the word "soft landing" has cropped up in Bloomberg Stories (Figure 4c) to appreciate how much the market has bought into this crazy idea.

► Figure 4: Cooling US Inflation, less aggressive Fed rate hikes and hopes of an economic 'soft landing' have been driving the rally since September last year

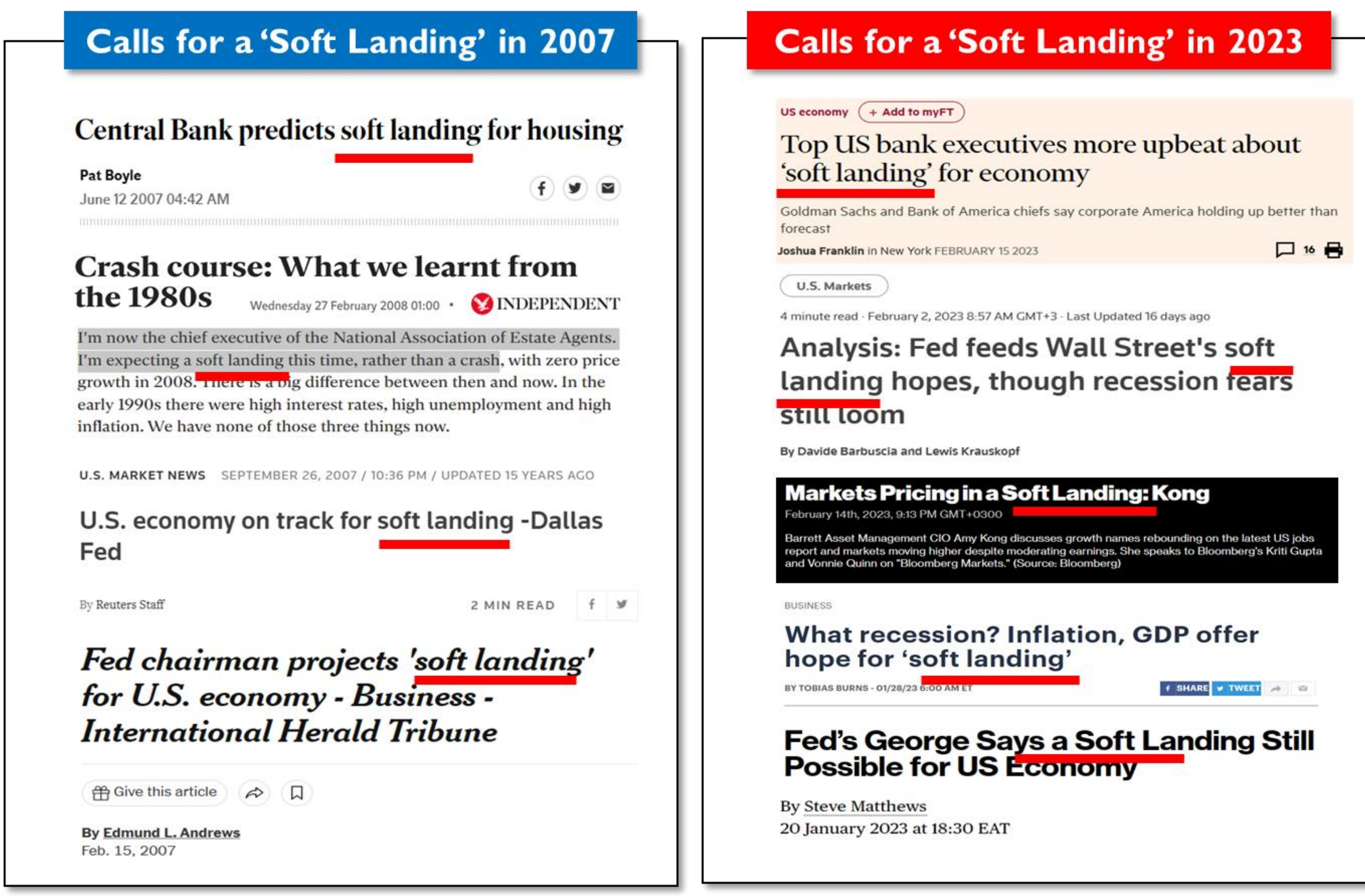


Source: ByteTree, Refinitiv Datastream, Piper Sandler

We have, of course, seen all of this before – back in 2007. A search of economic stories and headlines from around that time (Figure 5a) reveals that the Federal Reserve, CEOs, big news agencies and other commentators were all banging their economic 'soft landing' drums just as hard as they are now (Figure 5b). The same sort of commentaries that were being made back then are being made now. They might have seemed credible back then but turned out to be ludicrously wrong and a nasty correction followed. Plus ça change, plus c'est la même chose. History repeats.

► Figure 5: **The 'soft landing' brigade is banging their drum just as hard now as they were back in 2007 before the Great Financial Crisis**

(a) **(b)**



Calls for a 'Soft Landing' in 2007

Central Bank predicts soft landing for housing

Pat Boyle
June 12 2007 04:42 AM

Crash course: What we learnt from the 1980s
Wednesday 27 February 2008 01:00 • INDEPENDENT

I'm now the chief executive of the National Association of Estate Agents. I'm expecting a soft landing this time, rather than a crash, with zero price growth in 2008. There is a big difference between then and now. In the early 1990s there were high interest rates, high unemployment and high inflation. We have none of those three things now.

U.S. MARKET NEWS SEPTEMBER 26, 2007 / 10:36 PM / UPDATED 15 YEARS AGO

U.S. economy on track for soft landing -Dallas Fed

By Reuters Staff 2 MIN READ

Fed chairman projects 'soft landing' for U.S. economy - Business - International Herald Tribune

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By Edmund L. Andrews
Feb. 15, 2007

Calls for a 'Soft Landing' in 2023

US economy + Add to myFT

Top US bank executives more upbeat about 'soft landing' for economy

Goldman Sachs and Bank of America chiefs say corporate America holding up better than forecast

Joshua Franklin in New York FEBRUARY 15 2023

U.S. Markets

4 minute read · February 2, 2023 8:57 AM GMT+3 · Last Updated 16 days ago

Analysis: Fed feeds Wall Street's soft landing hopes, though recession fears still loom

By Davide Barbuscia and Lewis Krauskopf

Markets Pricing in a Soft Landing: Kong
February 14th, 2023, 9:13 PM GMT+0300

Barrett Asset Management CIO Amy Kong discusses growth names rebounding on the latest US jobs report and markets moving higher despite moderating earnings. She speaks to Bloomberg's Kriti Gupta and Vonnie Quinn on "Bloomberg Markets." (Source: Bloomberg)

BUSINESS

What recession? Inflation, GDP offer hope for 'soft landing'

BY TOBIAS BURNS - 01/28/23 6:00 AM ET

Fed's George Says a Soft Landing Still Possible for US Economy

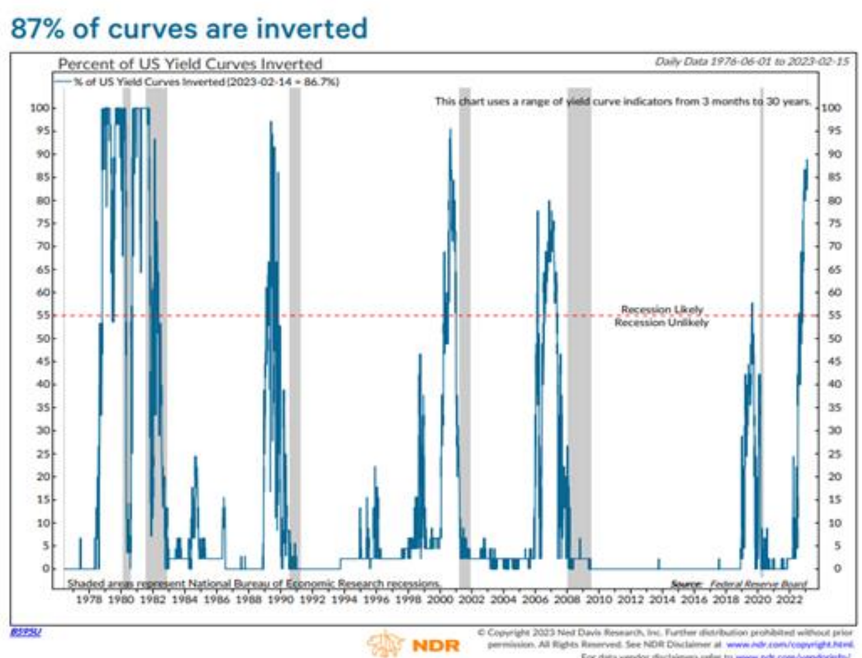
By Steve Matthews
20 January 2023 at 18:30 EAT

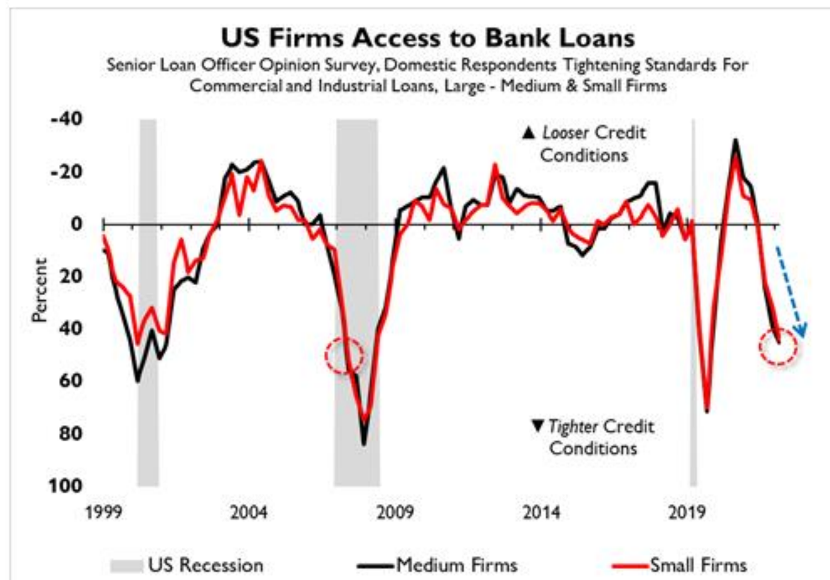
Source: ByteTree, Reuters, Independent, Independent.ie, International Herald Tribune, Financial Times, Bloomberg

Whilst calls for a soft-landing are prominent in the media right now, **there are still plenty of signs pointing to a US recession ahead**. **The US Treasury Yield curve has inverted** – in fact, 87% of them. Historically, when around half the curves have inverted, a recession has followed (Figure 6a). At the same time, **banks are cutting back on lending** with 44% of banks having tightened lending standards(Figure 6b). The last time we saw this degree of tightening was during the pandemic and GFC. The **average US Recession probability** – based on four credible sources – **stands at 72% , with American CEOs the most pessimistic** (Figure 6c). Lastly, **new manufacturing orders is at levels which have coincided with a U.S. recession every single time for the last seven decades.** Whilst any one of these indicators could be flashing a false signal, the odds of all four indicators simultaneously flashing a false signal is very slim. All things considered, a US recession is the most likely outcome under the current economic trajectory.

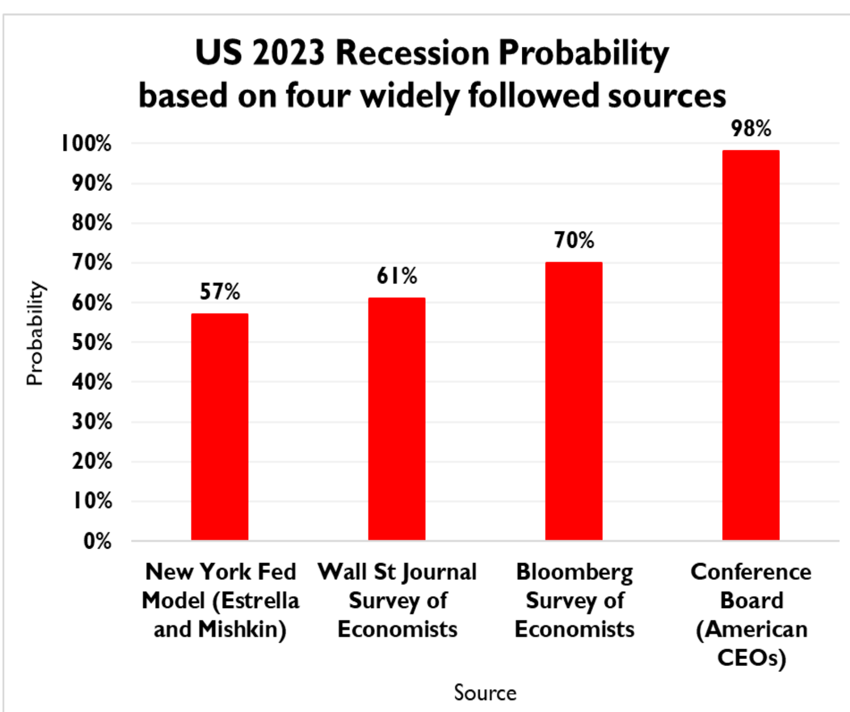
► Figure 6: **Whilst calls of a soft-landing are prominent in the media right now, there are still plenty of signs pointing to a US recession ahead**

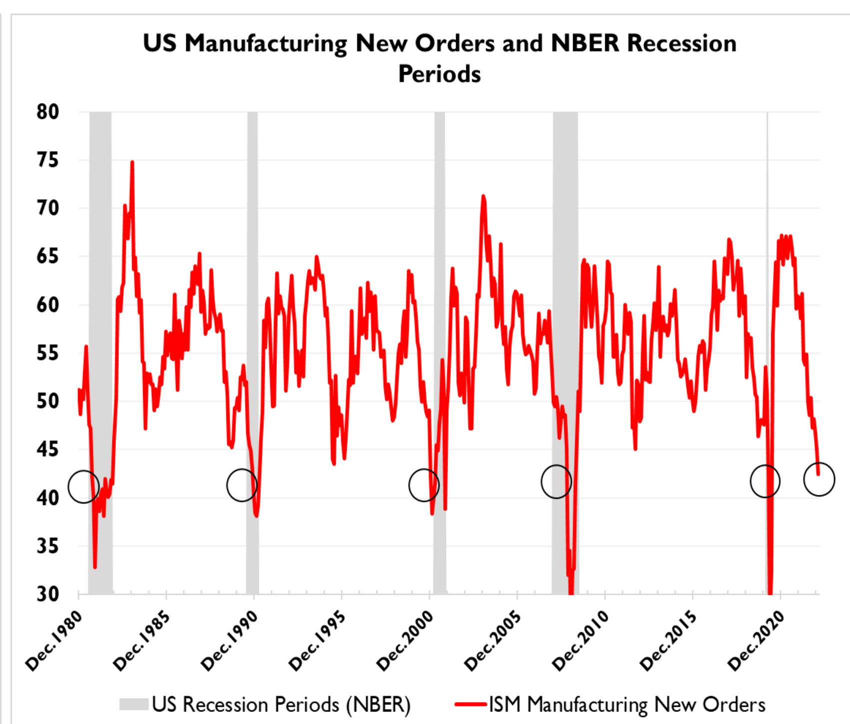
(a) (b)





(c) (d)





Source: ByteTree, Refinitiv Datastream, Ned Davis Research

We can see how the AAA Model rankings have evolved over the past year (Figure 7). Back in March, the equity markets were all jumbled up. Some were ranked as Strong, others not so good. At the time, there was a preference for commodities which the model got right. Now, **the trend in equities is super strong.** They are the only asset class in the top two groups in our ranking table. **The momentum is so strong that it should be followed**, even though we do not think it will last very long. The trend may well end before May.

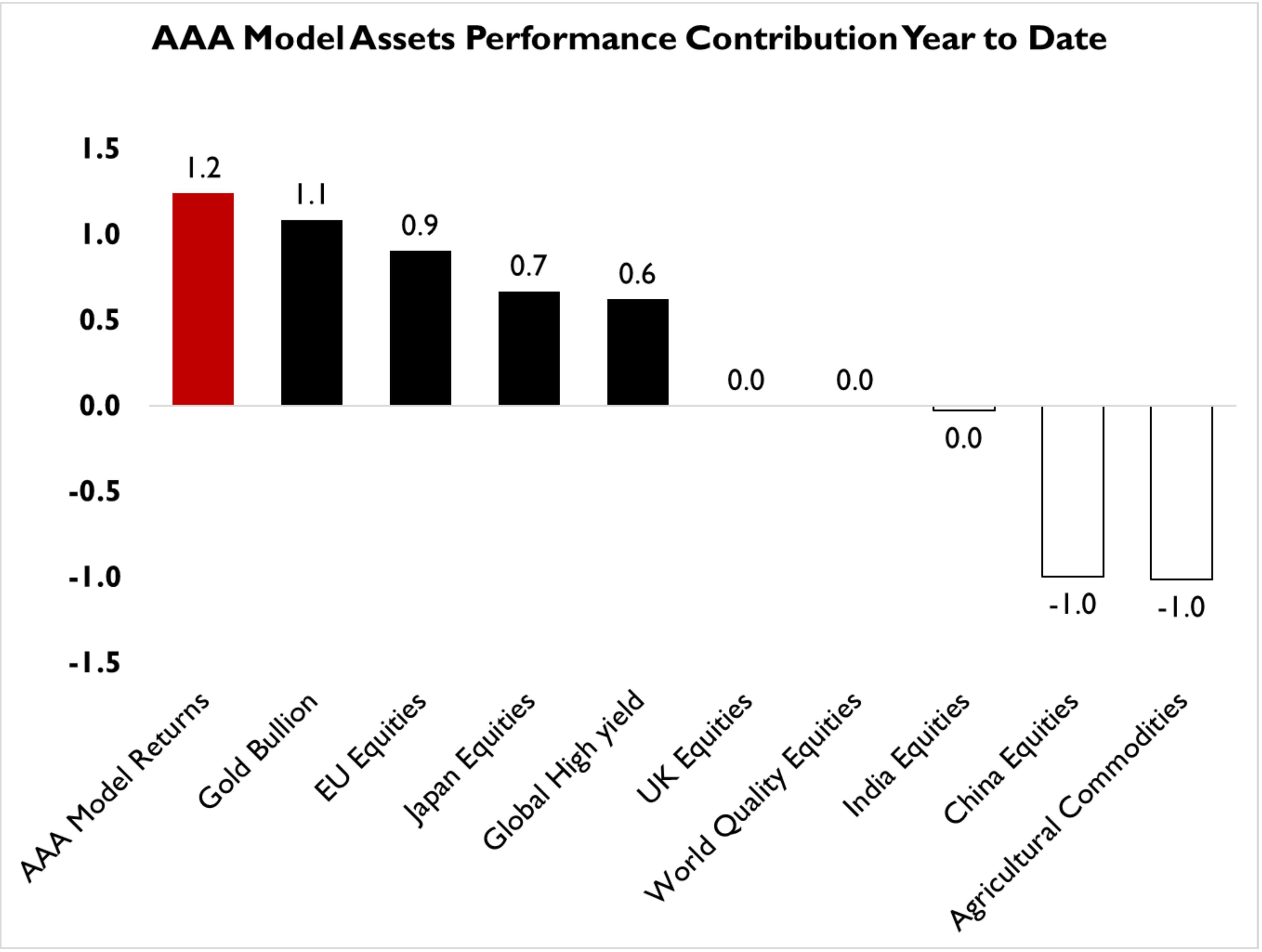
As an inflection develops, volatility will increase. The Model handles them quite well but not perfectly. One thing we can introduce is a portfolio stop-loss level. In a large bear market, we may own the best groups but still end up losing money. However, **implementing a portfolio stop-loss level of 10% would lead us to liquid all positions so that in a crash scenario we would take a hit from which we could recover**. Bear markets evolve quickly, so having such a stop-loss would reduce the need to wait for the next AAA Report in order to act.

► Figure 7: The AAA Model asset rankings have continued to evolve over the past year with the Strongest and Strong Assets all Equities since last month

Source: ByteTree, Refinitiv Datastream

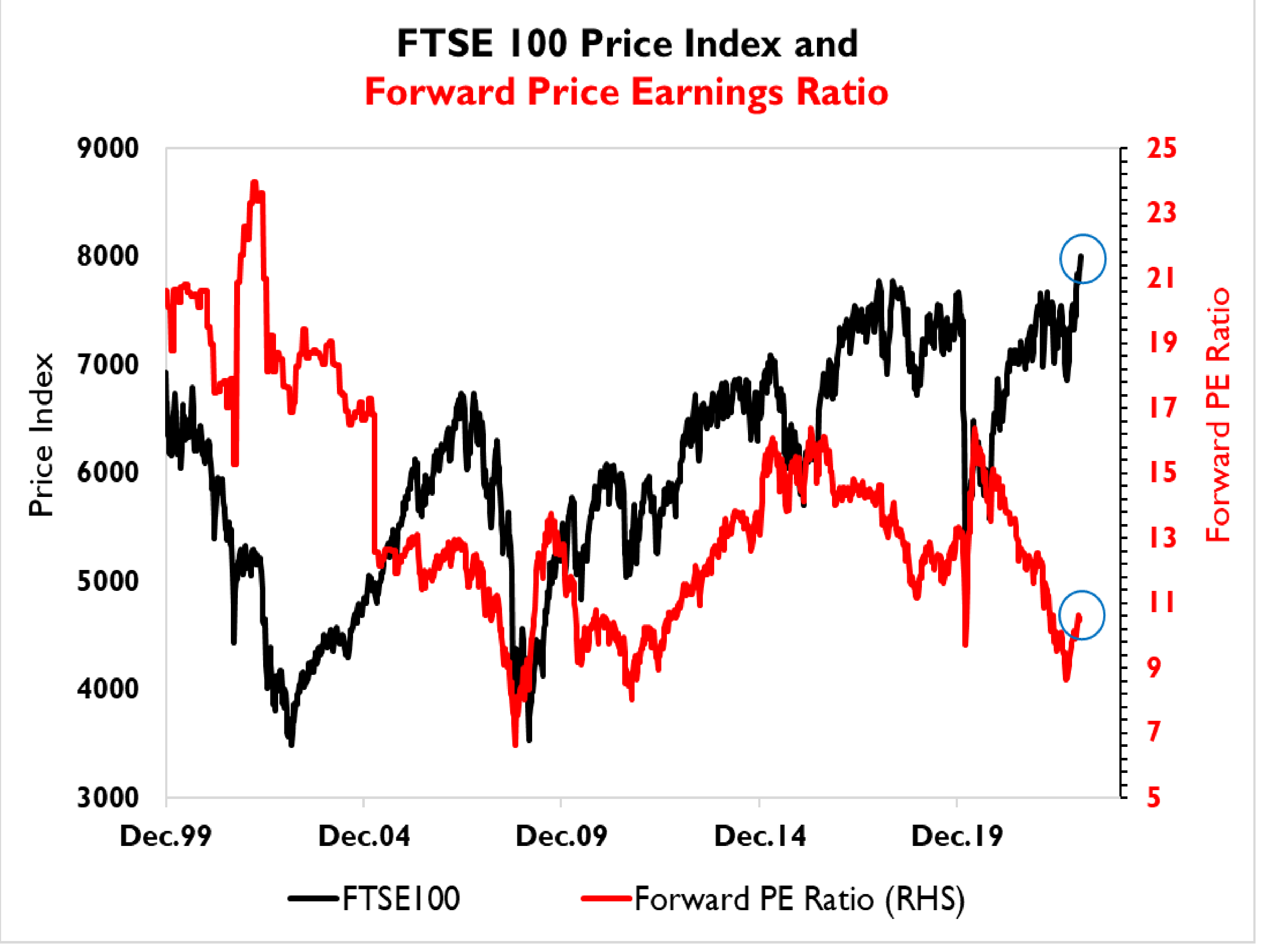
The AAA model has done OK recently in that it is up 1.2% since the beginning of the year. Figure 8 shows the assets we have held since the end of last year (26th December 2022) along with their contribution to the performance. Over this period, the model has benefitted from owning Gold Bullion, EU Equities, Japanese Equities and High Yield bonds. The largest detractors in performance have been Agricultural commodities and China Equities. **On the whole, we have made more on the winning trades than the losing ones.** We have back tested to see if dealing mid-month would result in better performance in volatile times but found this was not the case. As a result, **we want to stick with the model as it is but add in a portfolio stop-loss in case we go into crash conditions**.

► **Figure 8: The AAA Model is up 1.2% this year having benefitted from owing Gold Bullion EU Equities, Japan Equities and High Yield bonds since 26th December 2022**



As the dash-to-trash has continued, many are amazed that **the UK equity market has made a new all-time high, even whilst the UK economy is the weakest in Europe.** We must remember that **the UK stock market does not reflect the UK economy**, because of the composition of the index. The vast majority of the revenues of the FTSE 100 are derived from overseas – up to 80%. In fact, 13% come from China alone. As a result, **the stock market is performing better than the economy**. At the same time, the stock market is cheap (Figure 9). At the lowest, the forward rating was 9 times earnings. Historically, the extreme low is 7x but it has never been that low for long. During the low in 1970s, you could pick up Shell on a yield and a Price Earnings Ratio of 7x. Since that time, I have never seen it that low. But even now, the UK stock market is not expensive.

► **Figure 9: The UK Stock market is relatively cheap trading on a forward price earnings ratio of 10.5 vs the long-term average of 13.8**



Source: ByteTree, Refinitiv Datastream

We have had **two readers writing in noting that the performance of the AAA Model has been less than stellar** in recent months and is leading to an angst-fueled investment experience. Their questions are reproduced below for the benefit of our readers. The gist is **"does the model still work in these volatile markets"?**

Reader 1:

> I have tracked the AAA performance since day one, and **the last 18 months have been rocky**. My cumulative profits are now less than 18 months ago and since April 2022 I have **given back over half of my total profits since day 1.** I also note we **currently have a 10% loss on our China fund.**
>
> I guess **for a low-risk strategy,** I have lost some faith. For the first 18 months, we were chugging along nicely with 24 funds having 17 closed in profit, compared to 22 having 15 closed in a loss the last 18 months.
>
> I am sure other readers will have reached out to you and maybe this is **something you could include in a newsletter?**
>
> Finally, I follow Charlie as well and note each month at the end he **keeps track of performance** over the years and year to date. Are you **able to do a similar thing** I am sure it would stave off any concerns?

Reader 2:

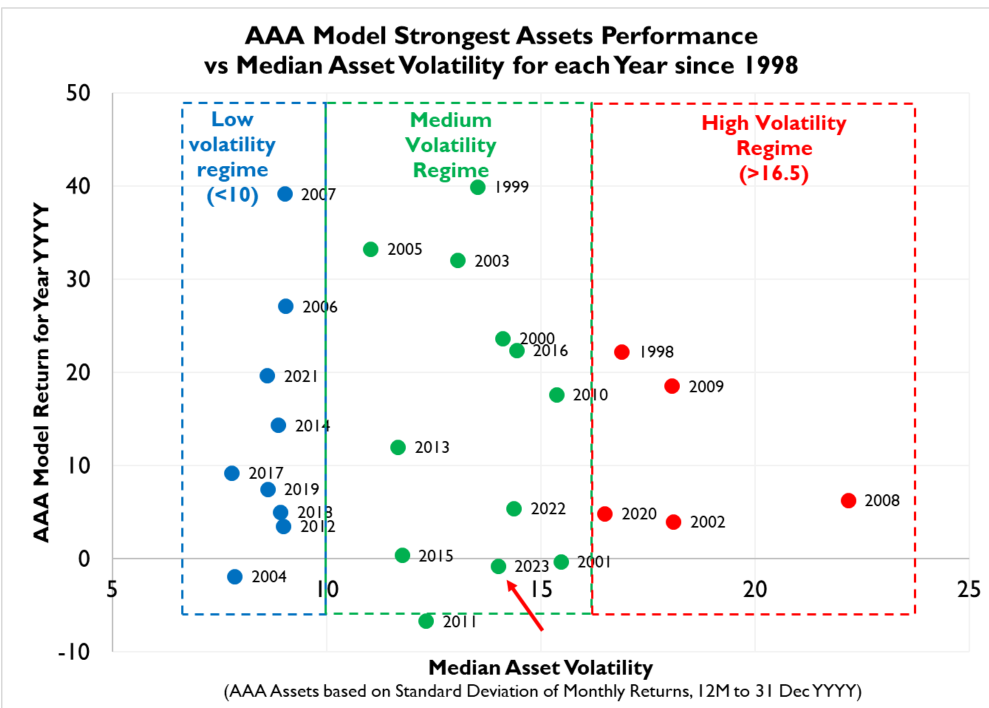
> I have been actively following your work for a year now, and have been impressed by your research and the past performance, but the **results have not been what I had hoped for**, and I am concerned that the **Model may no longer work in the current environment**.
>
> It seems to me that the model has **frequently identified a trend, only to have that reverse** the next month, so we are buying assets which have risen strongly, only to have them reverse the next month because they are now weak, and selling those which have had a bad month only to miss the recovery the next month.
>
> This resulted last month in a particularly large change, replacing three assets.
>
> My **biggest concern for this month is China**, which you say "has had a long period of underperformance and had become cheap" and this may well be true, but surely the model is based on recent performance and not value. You say "We believe this trend will continue strongly but will not proceed in a linear fashion" which suggests that the thing to do is to hold it, regardless of setbacks, but (unless I've misunderstood completely), the model will say to sell as soon as it has a month of performing worse than other assets.
>
> …
>
> **My concern here is that we sell at a loss, only for it to rise strongly again next month**, giving a buy signal in the model, and so the cycle repeats, buying high and selling low, rather than holding an underpriced asset until it is no longer cheap. This is a certain way to lose money.
>
> I would add that exactly the reverse seems to have happened with Agriculture Commodities, which had a poor January but has since resumed the upward trend from December.
>
> Clearly, the **Model works well when trends are generally strong and consistent**, and change over longer periods, but **does it really work when markets are this volatile**?

The simple answer is that **we believe trend following continues to work, however returns will be lower than the past and implementing the strategy will remain challenging in the current macro and market environment.** Like every investment strategy, trend following has its pros and cons. Pro - trend following is simple. Con – following the strategy is not; especially due to whipsaws, sudden reversals (1998, 2020) and sideways markets (2003- 2004, 2011-2012). It is generally believed that volatility is an anathema for trend following strategies, however this is not entirely true. According to Fan and Kleshchelski, "it is not volatility per se that matters to trend-following. **Ultimately, trend following strategies need strong trends to perform well. This can happen in high or low volatility regimes**". This is borne out by the performance of the AAA strategy, analyzed across different volatility regimes (Low, Medium and High) as shown in Figure 10.

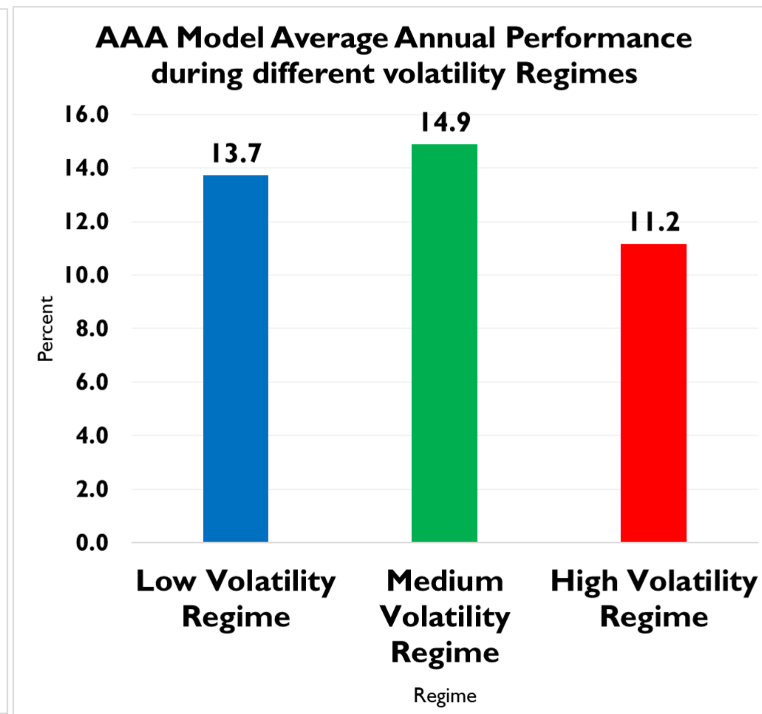
These regimes are measured by calculating the median asset volatility of the AAA Model assets each year and determining cut-off points to separate the different volatility clusters; this was done by visually scanning Figure 10a. We can see that when we plot a scatter plot of the AAA Model performance each year (Figure 10a; y-axis) against the median asset volatility over the year (Figure 10a; x-axis), there is no obvious relationship between the return generated and the median asset volatility over the year. Admittedly, **high volatility years** like 2002, 2008 and 2020 **deliver slightly lower returns, on average,** than low-or-medium volatility years, **but there is still quite a lot of return dispersion during the latter.** It is also noticeable that **some of the years that have delivered the lowest returns** (2004, 2011 and 2012) **have been years where equity markets were range-bound** – rather than trending. All things considered, **if we have reason to believe that trend-following will not do well going forward, it's because we believe markets will not be trending strongly**, rather than a high-volatility regime being the deterrent.

► Figure 10: The AAA Model has generated lower returns in high volatility regimes, however there is quite a lot of return dispersion during both low and medium volatility regimes

(a)



(b)

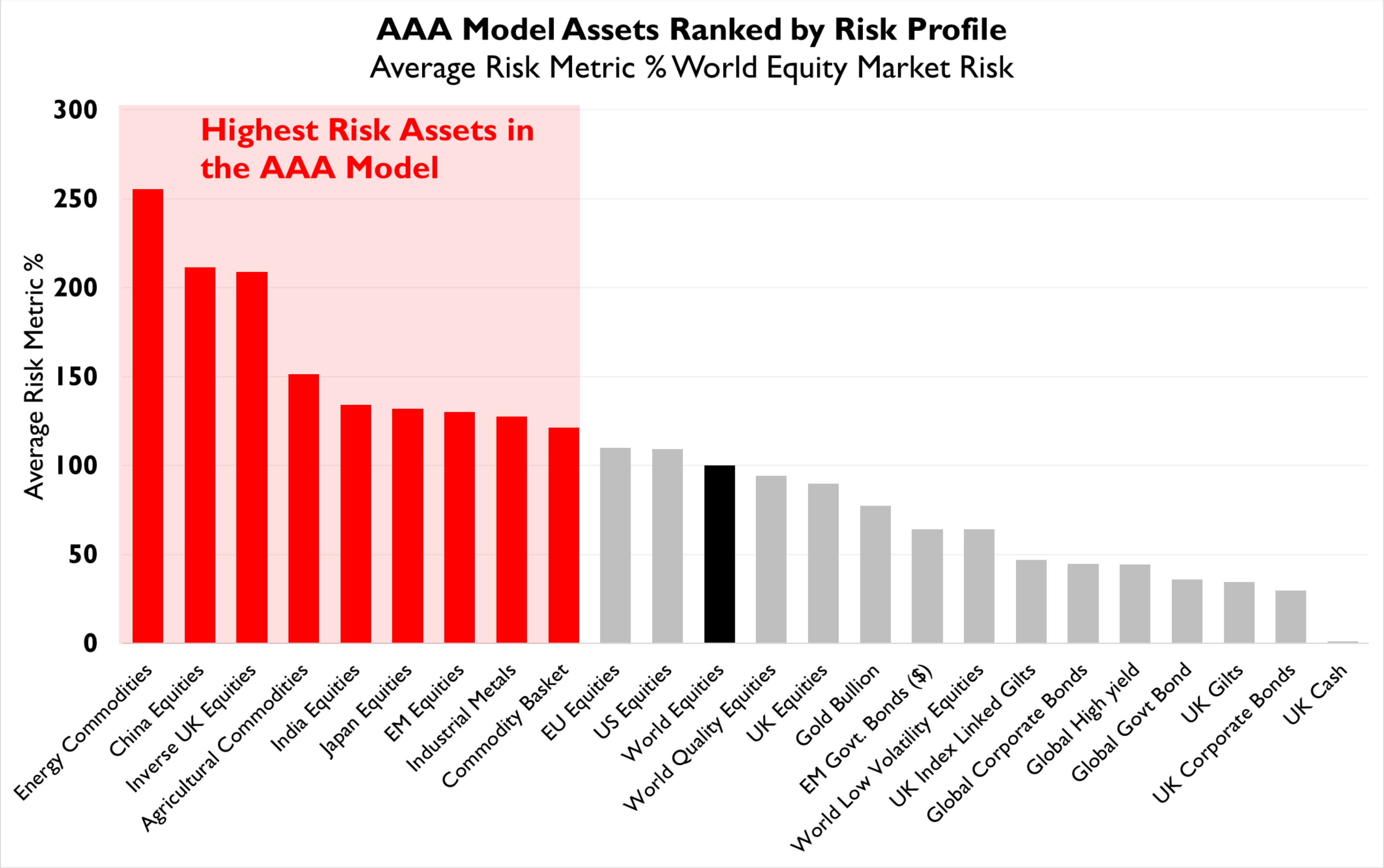


Source: ByteTree, Refinitiv Datastream

There's no denying that the AAA Model is going through a rough patch. We noticed this from June last year, when the AAA model, having been up 20% on the year, started to slowly erode performance as US inflation peaked, commodities corrected and trends started to reverse. It's been a choppy ride since and whilst the model has continued to adapt, it is true that "the model has frequently identified a trend, only to have that reverse the next month" as we have recently seen with **the China equity market. In fact, the reversal has been so pronounced that it is one of the biggest detractors in our performance this year** (Figure 8). The Chinese equity market is consolidating after a strong rise, following a surge in demand from foreign buyers. The volatility has been amplified by investors debating whether the reopening of the economy will eventually lead to a self-fulfilling recovery or whether the rebound will be short-lived with confidence dissipating soon.

Whilst we believe in the long-term trend of China, we have observed that **many of our readers struggle when investing in this market due the volatility.** Reversals are commonplace, especially after a strong rally. We have also seen this with the India Stock market, many times over, and some commodities such as Energy, Industrial Metals and Agriculture Commodities. There is no sugar coating it – **these assets are very volatile and so sharp reversals are to be expected from month-to-month**. Our analysis of the AAA Model assets reveals that **nine assets in particular are prone to this behavior owing to their risk profile** [Appendix 3]**. These assets are highlighted in Figure 11** and include Energy Commodities, China Equities, Inverse Equities, Agriculture Commodities, India Equities, Japan Equities, EM Equities, Industrial Metals and Commodity Basket. Energy Commodities, for example, are 2.5x as volatile as World Equities, whilst the China Equity Market, the second most risky asset on this list, is 2.1x as volatile as World Equities.

► **Figure 11: The highest risk assets in the AAA Model are more prone to being bought one month and swiftly reversing the following month owing to their volatile nature**



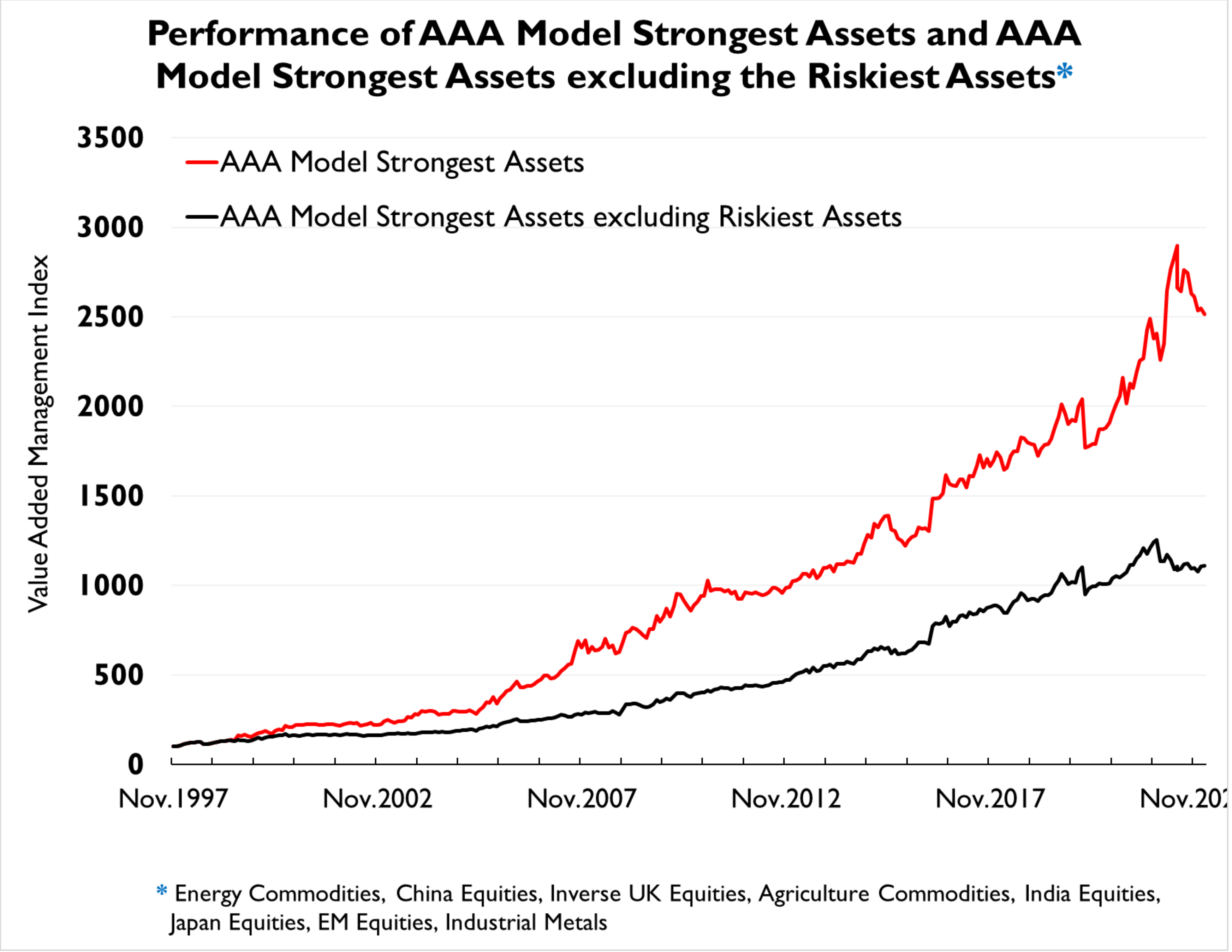
Source: ByteTree, Refinitiv Datastream

If these assets are so risky, then why do we include them in the AAA Model in the first place? Return potential. Despite their volatility and propensity for sharp reversals, we have found that investors who can tolerate the volatility are frequently rewarded over the long term. This is borne out in the historical performance of the AAA Model strongest trending assets (Figure 12 - red line) which significantly outperforms the AAA Model strongest trending assets which exclude these high risk assets (Figure 12 – black line).

However, we accept that **not all our readers have the ability and/or the willingness to invest in the riskiest assets in the AAA Model**. In this case, **readers have the option to exclude these assets and buy the next strongest ranked asset(s) in the AAA Model** that are not part of the Riskiest Assets group. Ultimately, investors should never take more risk than they are able or willing to.

Going forward**, we will report the performance of both of these portfolios** (the standard AAA Model Strongest Assets and the AAA Model Strongest Assets excluding the riskiest assets) **in** [Appendix 4](#) along with key comparison benchmarks. We hope this helps our readers.

► **Figure 12: Despite being prone to sharp reversals month-to-month, the riskiest assets have significantly enhanced the returns of the AAA Model over the long term**



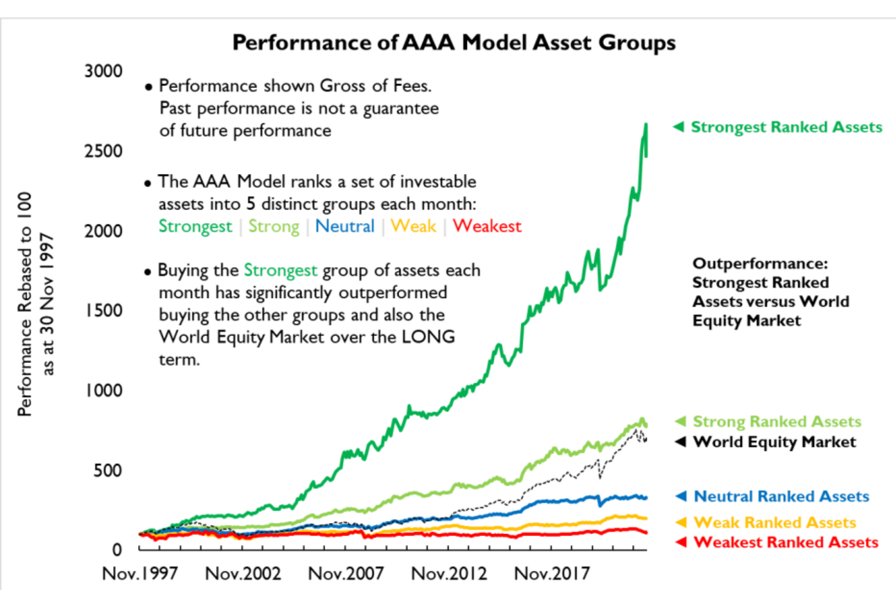
Source: ByteTree, Refinitiv Datastream

▶ 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 done in GBP, 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.
- However, not all investors have the ability and / or willingness to invest in the riskiest assets in the AAA Model [see Appendix 3 for asset risk comparison]. In this case, investors have the option to exclude these assets and buy the next strongest ranked asset(s) in the AAA Model that is (are) not part of the Riskiest Assets group [the Riskiest Assets are highlighted in Appendix 3]. Investors should never take more risk than they are able or willing to.

* 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

	February 2023	Representative ETF Name Distributing ETF Name; Accumulating ETF Name	Representative ETF Ticker Distributing*	Representative ETF Ticker Accumulating*
Strongest	EU Equities	iShares MSCI Europe ex UK UCITS ETF EUR (DIST) ; iShares MSCI EMU UCITS ETF ACC	IEUX	CEU1
	UK Equities	iShares Core FTSE 100 UCITS ETF DIST ; SPDR FTSE UK All Share UCITS ETF	ISF	FTAL
	World Equities	iShares MSCI World UCITS ETF USD DIST ; iShares Core MSCI World UCITS ETF USD ACC	IWRD	SWDA
	World Quality Equities	No Distributing ETF ; iShares Edge MSCI World Quality Factor UCITS ETF	-	IWFQ
Strong	Global High yield	iShares Global High Yield Corp. Bond UCITS ETF DIST ; iShares Global High Yield Corp. Bond UCITS ETF ACC	IGHY	HYLA
	China Equities	HSBC MSCI CHINA ETF ; No Accumulating ETF	HMCH	-
	India Equities	No Distributing ETF ; DB X-TRACKERS MSCI India Index UCITS ETF ACC	-	XCX5
	US Equities	iShares S&P 500 UCITS ETF USD DIST ; ISHRS Core S&P 500 UCITS USD (ACC) ETF	IUSA	CSP1
	Japan Equities	iShares MSCI Japan UCITS ETF DIST ; iShares Core MSCI Japan IMI UCITS ETF ACC	IJPN	SJPA
Neutral	UK Cash	No Distributing ETF ; No Accumulating ETF	-	-
	World Low Volatility Equities	No Distributing ETF ; iShares Edge MSCI World Minimum Volatility UCITS ETF	-	MVOL
	Global Corporate Bonds	iShares Global Corp Bond UCITS (USD) DIST ; iShares Global Corp Bond UCITS (USD) ACC	CRPS	CRPA
	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
	Gold Bullion	No Distributing ETF ; ETFS Physical Gold	-	PHGP
Weak	UK Corporate Bonds	iShares Core £ Corp Bond GBP UCITS ETF ; No Accumulating ETF	SLXX	-
	EM Equities	Vanguard FTSE Emerging Markets UCITS ETF USD ; No Accumulating ETF	VFEM	-
	Industrial Metals	No Distributing ETF ; ETFS Industrial Metals ETC	-	AIGI
	Global Govt Bond	iShares Global Govt. Bond (USD) DIST UCITS ETF ; iShares Global Govt Bond UCITS (ACC) ETF	SGLO	IGLA
	UK Gilts	iShares Core UK Gilts UCITS ETF GBP ; No Accumulating ETF	IGLT	-
Weakest	Agricultural Commodities	No Distributing ETF ; ETFS Commodity Securities Agriculture Dow Jones UBS CI	-	AGAP
	UK Index Linked Gilts	iShares Index Linked Gilts UCITS ETF ; No Accumulating ETF	INXG	-
	Inverse UK Equities	No Distributing ETF ; DB X-TRACKERS FTSE 100 SHORT DAILY ETF	-	XUKS
	Energy Commodities	No Distributing ETF ; ETFS Commodity Securities Energy DJ-UBSCI	-	AIGE

* *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 [1]

AAA Model Rankings GBP Portfolio with representative ETF Tickers

	February 2023	Representative ETF Name Distributing ETF Name; Accumulating ETF Name	Representative ETF Ticker	
			Distributing*	Accumulating*
Strongest	EU Equities	iShares MSCI Europe ex UK UCITS ETF EUR (DIST) ; iShares MSCI EMU UCITS ETF ACC	IEUX	CEU1
	UK Equities	iShares Core FTSE 100 UCITS ETF DIST ; SPDR FTSE UK All Share UCITS ETF	ISF	FTAL
	World Equities	iShares MSCI World UCITS ETF USD DIST ; iShares Core MSCI World UCITS ETF USD ACC	IWRD	SWDA
	World Quality Equities	No Distributing ETF ; iShares Edge MSCI World Quality Factor UCITS ETF	-	IWFQ
Strong	Global High yield	iShares Global High Yield Corp. Bond UCITS ETF DIST ; iShares Global High Yield Corp. Bond UCITS ETF ACC	IGHY	HYLA
	China Equities	HSBC MSCI CHINA ETF ; No Accumulating ETF	HMCH	-
	India Equities	No Distributing ETF ; DB X-TRACKERS MSCI India Index UCITS ETF ACC	-	XCX5
	US Equities	iShares S&P 500 UCITS ETF USD DIST ; ISHRS Core S&P 500 UCITS USD (ACC) ETF	IUSA	CSP1
	Japan Equities	iShares MSCI Japan UCITS ETF DIST ; iShares Core MSCI Japan IMI UCITS ETF ACC	IJPN	SJPA
Neutral	UK Cash	No Distributing ETF ; No Accumulating ETF	-	-
	World Low Volatility Equities	No Distributing ETF ; iShares Edge MSCI World Minimum Volatility UCITS ETF	-	MVOL
	Global Corporate Bonds	iShares Global Corp Bond UCITS (USD) DIST ; iShares Global Corp Bond UCITS (USD) ACC	CRPS	CRPA
	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
	Gold Bullion	No Distributing ETF ; ETFS Physical Gold	-	PHGP
Weak	UK Corporate Bonds	iShares Core £ Corp Bond GBP UCITS ETF ; No Accumulating ETF	SLXX	-
	EM Equities	Vanguard FTSE Emerging Markets UCITS ETF USD ; No Accumulating ETF	VFEM	-
	Industrial Metals	No Distributing ETF ; ETFS Industrial Metals ETC	-	AIGI
	Global Govt Bond	iShares Global Govt. Bond (USD) DIST UCITS ETF ; iShares Global Govt Bond UCITS (ACC) ETF	SGLO	IGLA
	UK Gilts	iShares Core UK Gilts UCITS ETF GBP ; No Accumulating ETF	IGLT	-
Weakest	Agricultural Commodities	No Distributing ETF ; ETFS Commodity Securities Agriculture Dow Jones UBS CI	-	AGAP
	UK Index Linked Gilts	iShares Index Linked Gilts UCITS ETF ; No Accumulating ETF	INXG	-
	Inverse UK Equities	No Distributing ETF ; DB X-TRACKERS FTSE 100 SHORT DAILY ETF	-	XUKS
	Energy Commodities	No Distributing ETF ; ETFS Commodity Securities Energy DJ-UBSCI	-	AIGE

* *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.

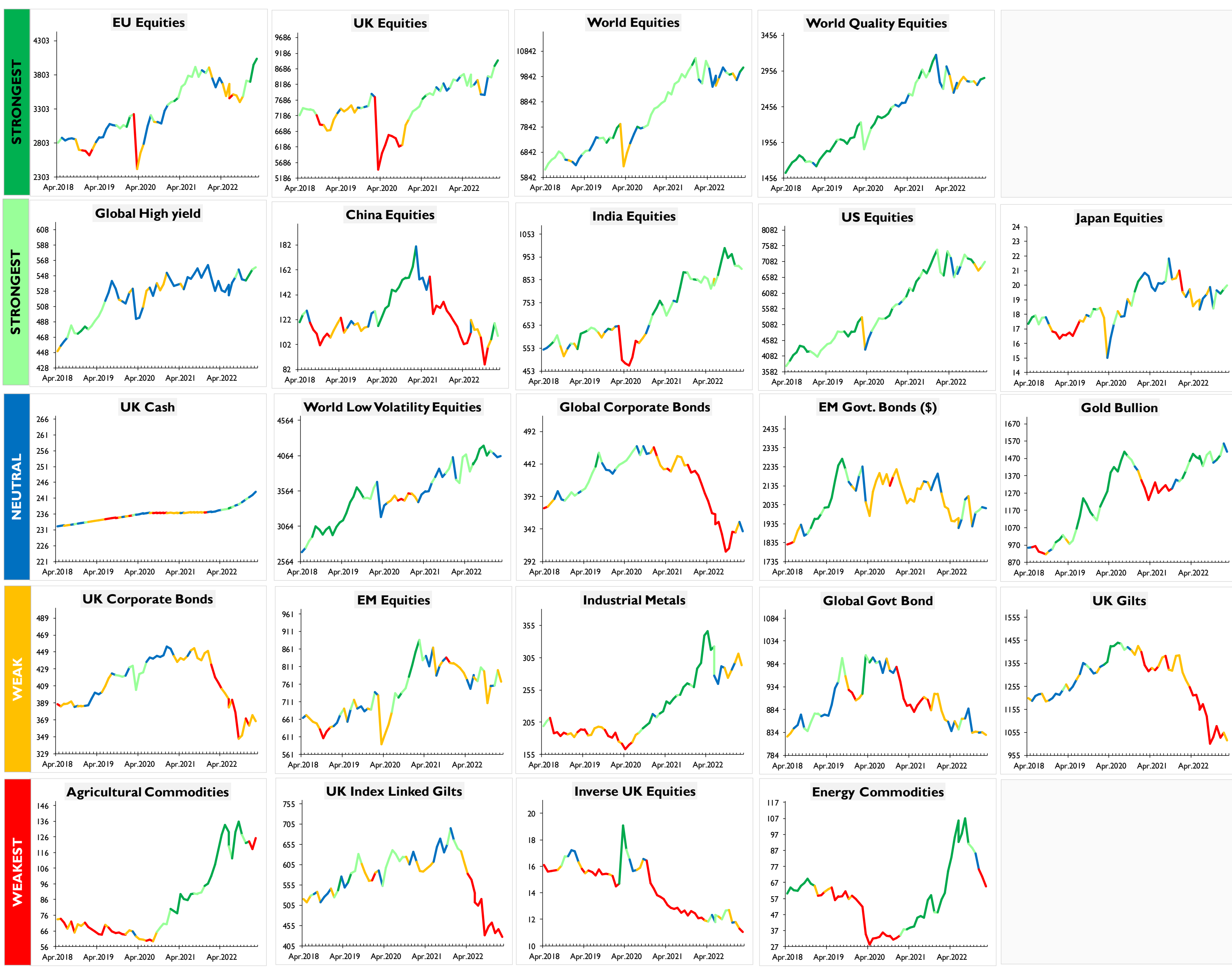
Source: ByteTree, Refinitiv Datastream

Appendix [2]

AAA Assets with Historical Model Rankings

The Charts below illustrate the Total Return performance in GBP of each of the AAA Model Assets arranged in order of the Latest Asset Rankings [see Appendix 1] from Strongest to Weakest, overlaid with historical Asset Rankings over the last 3 years, colour-coded as follows:

■ Strongest | ■ Strong | ■ Neutral | ■ Weak | ■ Weakest



Source: ByteTree, Refinitiv Datastream

Appendix [3]

AAA Assets Ranked by Risk

AAA Assets Ranked from Highest to Lowest Risk [Table 3.3] using historical monthly returns based on four risk metrics (standard deviation, maximum drawdown, average drawdown and Beta vs World Equity Market).

Table 3.1

Shows the absolute values of each risk metric and asset over the analysis period. The results are colour-coded so that Red means riskier and Green means less risky.

Table 3.2

Expresses the results, for each risk metric, in Table 3.1 as a % of the same value for the World Equity Market to make it easier to compare how much riskier (or less risky) each asset is relative to the World Equity Market. The last column [Average Risk Metric] is the simple average of the first columns in Table 3.2. An 'Average Risk Metric' value of over 100% means the asset is riskier than the World Equity Market, whilst a value less than 100% means the converse. The magnitude of the values serve to indicate how just much riskier (or less risky) each asset is compared to the World Equity Market, a widely used investment risk benchmark.

Table 3.3

Sorts the results in Table 3.2 based on the 'Average Risk Metric'. This makes it easier to see which are the Riskiest and Lowest Risk Assets. The "Highest Risk Assets" are marked below, using a cut-off threshold of 120%.

Analysis Period 31.12.1996 to 17.02.2023 based on Total Return Monthly data

	Risk Metrics				As % of World Equity Market				
	Standard Deviation	Max Drawdown	Average Drawdown	Beta (vs World Equity Market)	Standard Deviation	Max Drawdown	Average Drawdown	Beta (vs World Equity Market)	Average Risk Metric
China Equities	30.9	83.7	34.9	0.97	208.6	171.8	368.2	97.0	211.4
Energy Commodities	30.3	94.5	56.1	0.33	204.5	193.8	590.8	33.3	255.6
India Equities	26.0	53.7	14.6	0.97	175.6	110.1	153.3	96.9	134.0
EM Equities	21.8	59.6	13.1	1.13	146.9	122.3	137.7	113.2	130.0
Industrial Metals	19.9	55.0	19.5	0.58	134.1	112.8	205.3	57.9	127.5
Agricultural Commodities	19.1	53.7	31.6	0.33	128.9	110.1	332.5	33.5	151.3
EU Equities	18.1	50.7	9.9	1.10	122.0	104.1	104.4	109.7	110.1
Japan Equities	16.9	59.2	20.8	0.73	113.9	121.4	219.4	73.0	131.9
Gold Bullion	16.0	37.5	10.9	0.09	108.1	76.9	114.7	9.4	77.3
US Equities	15.6	48.9	12.3	1.01	105.1	100.3	130.1	101.4	109.2
Commodity Basket	14.9	55.0	22.5	0.34	100.9	112.8	236.7	34.4	121.2
World Equities	14.8	48.7	9.5	1.00	100.0	100.0	100.0	100.0	100.0
UK Equities	14.5	42.9	8.4	0.84	97.8	88.1	88.5	84.4	89.7
Inverse UK Equities	14.5	89.0	60.7	-0.84	97.8	182.7	639.7	-84.4	208.9
World Quality Equities	14.4	43.8	9.2	0.92	97.0	89.9	97.2	92.4	94.1
EM Govt. Bonds ($)	13.3	34.0	4.2	0.53	89.6	69.8	44.6	53.1	64.3
World Low Volatility Equities	11.7	30.2	4.4	0.68	78.9	62.0	46.7	68.4	64.0
Global High yield	9.7	19.5	2.5	0.45	65.7	40.0	26.7	44.9	44.3
UK Index Linked Gilts	9.5	38.0	3.0	0.14	63.9	77.9	31.9	14.0	46.9
Global Govt Bond	8.8	16.9	4.2	0.06	59.2	34.7	44.0	6.1	36.0
Global Corporate Bonds	8.1	34.5	3.3	0.19	54.5	70.8	34.5	19.5	44.8
UK Gilts	6.6	30.4	2.7	0.01	44.8	62.3	28.8	1.4	34.3
UK Corporate Bonds	5.8	24.0	1.8	0.11	39.0	49.2	19.5	10.9	29.6
UK Cash	0.7	0.0	0.0	0.00	4.9	0.0	0.0	-0.3	1.2

	Assets Ranked by Average Risk Metric. *Risk shown as % relative to World Equity Market. A value larger than 100% means the Asset is riskier than the World Equity Market and vice versa*
Highest Risk Assets	**Energy Commodities**
	China Equities
	Inverse UK Equities
	Agricultural Commodities
	India Equities
	Japan Equities
	EM Equities
	Industrial Metals
	Commodity Basket
	EU Equities
	US Equities
	World Equities
	World Quality Equities
	UK Equities
	Gold Bullion
	EM Govt. Bonds ($)
	World Low Volatility Equities
	UK Index Linked Gilts
	Global Corporate Bonds
	Global High yield
	Global Govt Bond
	UK Gilts
	UK Corporate Bonds
	UK Cash

Source: ByteTree, Refinitiv Datastream

Appendix [4]

AAA Model Performance: Strongest Assets and Strongest Assets excluding Riskiest Assets

The performance table below shows the historical performance of the AAA Model Strongest Asset portfolio ["AAA Model"] and the AAA Model Strongest Asset portfolio excluding the Riskiest Assets ["AAA Model excluding Riskiest Assets"] along with key comparison benchmarks.

The AAA Model performance excluding Riskiest Assets has been computed to allow readers to monitor the performance of the AAA Model if they chose to buy the Strongest Ranked AAA Model assets excluding the highest risk assets identified in Appendix [3] above, especially taking into consideration how much more volatile these assets are compared to World Equities (see Appendix 3 for comparison).

Not all investors have the ability and willingness to own the highest risk assets in the AAA Model, hence investors should take into account their capacity and tolerance for risk before investing in any of these assets.

Period	Performance Measured to 27.Feb.2023 Model | Benchmark	Representative Benchmark	Return CAGR	Risk Std. Dev.	Risk Max DD.	Risk-Adjusted Return Sharpe Ratio	Risk-Adjusted Return Calmar Ratio
2 Year to Date	**AAA Model**		-0.8%	3.7%	-1.2%	-1.14	-0.7
	AAA Model excluding Riskiest Assets		3.0%	5.3%	0.0%	-0.09	-
	Trend Funds	Barclay BTOP 50 Index GBP	-0.4%	14.8%	-3.2%	-0.26	-0.1
	UK Equities	FTSE 100 Total Return GBP	6.7%	4.6%	0.0%	0.69	-
	World Equities	MSCI World Total Return GBP	5.1%	3.4%	0.0%	0.46	-
	Conservative Multi-Asset Portfolio	FTSE UK Private Investor Conservative Total Return GBP	1.6%	3.8%	0.0%	-0.50	-
	Balanced Multi-Asset Portfolio	FTSE UK Private Investor Balance Total Return GBP	3.1%	4.5%	0.0%	-0.09	-
	Global Growth Multi-Asset Portfolio	FTSE UK Private Investor Global Growth Total Return GBP	4.4%	7.2%	0.0%	0.13	-
	UK Cash	3M Libor GBP	0.7%	0.2%	0.0%		
12 12 Months	**AAA Model**		-4.9%	12.6%	-13.2%	-0.66	-0.4
	AAA Model excluding Riskiest Assets		-5.2%	7.9%	-8.0%	-1.10	-0.7
	Trend Funds	Barclay BTOP 50 Index GBP	20.8%	16.9%	-12.3%	1.03	1.7
	UK Equities	FTSE 100 Total Return GBP	8.6%	13.4%	-6.6%	0.38	1.3
	World Equities	MSCI World Total Return GBP	-2.5%	12.8%	-9.9%	-0.47	-0.3
	Conservative Multi-Asset Portfolio	FTSE UK Private Investor Conservative Total Return GBP	-3.4%	5.6%	-5.5%	-1.23	-0.6
	Balanced Multi-Asset Portfolio	FTSE UK Private Investor Balance Total Return GBP	-1.6%	7.9%	-5.8%	-0.65	-0.3
	Global Growth Multi-Asset Portfolio	FTSE UK Private Investor Global Growth Total Return GBP	-2.5%	12.2%	-9.0%	-0.49	-0.3
	UK Cash	3M Libor GBP	2.5%	0.4%	0.0%		
36 3 Years	**AAA Model**		12.5%	13.9%	-13.2%	0.65	0.9
	AAA Model excluding Riskiest Assets		5.3%	9.1%	-14.0%	0.20	0.4
	Trend Funds	Barclay BTOP 50 Index GBP	9.9%	12.4%	-12.3%	0.52	0.8
	UK Equities	FTSE 100 Total Return GBP	18.2%	12.1%	-6.6%	1.22	2.7
	World Equities	MSCI World Total Return GBP	17.6%	12.9%	-10.8%	1.09	1.6
	Conservative Multi-Asset Portfolio	FTSE UK Private Investor Conservative Total Return GBP	3.6%	5.1%	-8.3%	0.02	0.4
	Balanced Multi-Asset Portfolio	FTSE UK Private Investor Balance Total Return GBP	9.7%	7.6%	-7.1%	0.81	1.4
	Global Growth Multi-Asset Portfolio	FTSE UK Private Investor Global Growth Total Return GBP	16.0%	12.0%	-10.4%	1.05	1.5
	UK Cash	3M Libor GBP	1.0%	0.4%	0.0%		
60 5 Years	**AAA Model**		8.9%	13.5%	-13.5%	0.40	0.7
	AAA Model excluding Riskiest Assets		5.6%	10.9%	-14.0%	0.19	0.4
	Trend Funds	Barclay BTOP 50 Index GBP	9.9%	11.4%	-12.5%	0.56	0.8
	UK Equities	FTSE 100 Total Return GBP	6.2%	17.2%	-29.7%	0.16	0.2
	World Equities	MSCI World Total Return GBP	11.3%	15.1%	-21.2%	0.52	0.5
	Conservative Multi-Asset Portfolio	FTSE UK Private Investor Conservative Total Return GBP	3.0%	5.6%	-8.3%	-0.10	0.4
	Balanced Multi-Asset Portfolio	FTSE UK Private Investor Balance Total Return GBP	5.9%	9.5%	-14.6%	0.25	0.4
	Global Growth Multi-Asset Portfolio	FTSE UK Private Investor Global Growth Total Return GBP	9.6%	14.4%	-20.8%	0.43	0.5
	UK Cash	3M Libor GBP	0.9%	0.3%	0.0%		
304 30 Nov 1997 - 27 Feb 2023	**AAA Model**		13.6%	14.0%	-13.5%	0.72	1.0
	AAA Model excluding Riskiest Assets		10.0%	10.1%	-14.0%	0.64	0.7
	Trend Funds	Barclay BTOP 50 Index GBP	6.0%	11.8%	-20.0%	0.21	0.3
	UK Equities	FTSE 100 Total Return GBP	5.6%	14.5%	-44.4%	0.14	0.1
	World Equities	MSCI World Total Return GBP	8.2%	14.7%	-48.7%	0.32	0.2
	Conservative Multi-Asset Portfolio	FTSE UK Private Investor Conservative Total Return GBP					-
	Balanced Multi-Asset Portfolio	FTSE UK Private Investor Balance Total Return GBP	6.2%	9.7%	-32.8%	0.28	0.2
	Global Growth Multi-Asset Portfolio	FTSE UK Private Investor Global Growth Total Return GBP					-
	UK Cash	3M Libor GBP	2.8%	0.7%	0.0%		

Source: ByteTree, Refinitiv Datastream

Disclaimer