25th January 2023

The Adaptive Asset Allocation Report

Issue No. 8

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.

Dramatic Regime Change

Dear Readers,

Our AAA Model has surprised us by going to a full equity position even in a global bear market and with a recession coming for sure. It feels odd and is the Pain Trade. We have been through a period where the top performing market has been the USA and the top performing currency - the dollar. Beating it has been hard to do. Now, the Fed has been hiking interest rates and seem determined to go all the way to 5% by June. They also have no desire to cut them any time soon.

This perception has brought about some group thinking. First, inflation is too high but has now peaked and will decline. This means that commodities can now be sold. Secondly, if US Equities are falling and the dollar is in decline, sell out now and buy much better value elsewhere – notably China, Japan and European equities. The valuation gap is just too large so it must be closed. This is the "Pain Trade".

Markets believe this and it's causing a dramatic regime change in the asset rankings. The momentum behind it is so strong that we must own it. As Maynard Keynes reminded us, "Markets can stay irrational longer than you [we] can stay solvent". However, the current low is a great trading position but not a long-term hold. Our indicators show a high risk of a selloff later this year which would lead to a super-low. That low will be a great buying chance.

We think most investors are too relaxed and have not fully realised the risks ahead. We are convinced that we are in a Global bear market, which has not yet ended. However, we need to switch from the very-overvalued US Equity market into better valued ones. We should follow the model. Expect more volatility in future and a final true-low later in the year.

Before I go, I would like to ask you to leave us a review on [Trustpilot](#) if you can spare a few minutes. It will help us give our readers a better service in the future. Thank you for your continued support.

Best Wishes,

R. J. Griffiths

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,

Markets are going through a dramatic regime change. That's just a fancy way of saying the model rankings have changed quite a bit since the last issue. We've noticed that the US Equity market has fallen all the way to the bottom of the weak asset category. Meanwhile, the strongest assets are nearly all equities – of a global nature. This dichotomy speaks volumes.

It is rather befuddling that the AAA Model is holding an equity centric portfolio in the middle of a bear market. We think this is the "Pain Trade" – we don't like it, but we just have to run with it. Given that we have lived through the most aggressive Fed tightening cycle since the early 80s, we are not convinced the bear market is over. Much like a frog being slowly boiled alive, the full impact of the rate hikes is yet to be felt. It all works with a bit of a lag.

Classical harbingers of a recession are screaming of a US recession around the corner and the global manufacturing sector already appears to be in one. The one thing that caught my eye this month is just how inverted the US treasury yield curve has become. This is an indicator with a sixty-year track record of correctly predicting recessions, so we should certainly take notice. If a recession envelopes the US and global economy, then earnings will contract and drive the next leg of the bear market. This is our theory in a nutshell. Let's see how reality unfolds.

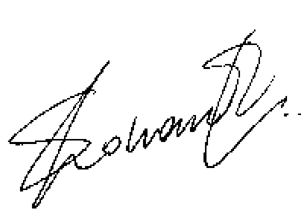
This month, we've taken the time to analyse the long-term performance of the AAA Model. One of our readers made an astute observation that the performance over the last ten years has not been as stellar as the first ten. We agree with this and have tried to explain why. The model is not broken. In fact, it's easily beaten cash and inflation over the last decade and delivered good absolute and risk-adjusted returns. However, the market environment has changed due to continued central bank intervention. As a result, protracted equity bear markets have been repealed and the model has been unable to gain the compounding edge that it has enjoyed prior to Quantitative Easing. This edge comes from preserving capital during the protracted equity bear markets then compounding from a higher base in the subsequent bull market.

Thank you all for your questions. They allow us to understand your concerns and give us a chance to add value where we can. If your question is one that we believe can benefit all readers, then we'll let you know and try and answer it in the next document. Finally, I just wanted to alert you to a new addition to the document. It's shown in Appendix 2 and allows you to track the total return performance of the AAA Assets along with their historical rankings. The latter are colour coded and overlaid on the performance chart. We hope you like it.

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: **24th January 2023**

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

ADDENDUM

The model was first run on 20th January 2023 this month. At this time, the strongest ranked assets were Europe Equities, China Equities, Japan Equities and Global High yield bonds. The model was rerun on the 24th of January 2023 and the strongest assets remain the same. 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	• **Europe Equities** • **China Equities** • **Japan Equities**
Hold	• **Global High yield**
Sell	• **Agriculture Commodities** • **Gold Bullion** • **India Equities**

- **Markets have gone through a dramatic regime change.**
- **The once dominant holding in the USA and the king dollar are being abandoned. The market was expensive, inflation has peaked, and a recession is due.**
- **Europe, Japan, and China Equities are winners on a relative basis but will still correct in a global recession.**
- **Commodities have dropped back as demand has decreased due to a peak in global inflation and global growth slowdown.**
- **Gold, India Equities, and UK Equities are still strong and come in the second category in the asset ranking tables.**

"Change is the only constant in life"
– Heraclitus

Ever since 1945, we have lived in a world that has been dominated by the US economy and stock market. The dollar went on to become the major currency of the World and this combination gave US investments superior performance. Additionally, the free money policies that started back in 2009 have caused these assets to be pumped up into clear bubble territory. Just owning the US equity market has been a winning strategy. **Now that regime appears to have changed.**

The US is still number one in a few areas such as military spending, innovation and technology, higher education, and entertainment. **In other areas** such as Manufacturing, Economic growth and digitalization **it has been surpassed by the rapidly ascending China and India economies**. The Asian part of the world is now working to reduce its dependence on the US dollar and promote the use of their own currencies in international trade. China, for example, has signed currency swap agreements with several countries to facilitate trade without the need for the US dollar. Additionally, there have been several initiatives in the region to establish new trading and payment systems that bypass the US dollar, such as the Belt and Road Initiative and the Asian Infrastructure Investment Bank. Whilst it will take time for these initiatives to gain a strong foothold in the region, nonetheless, the ball is in motion.

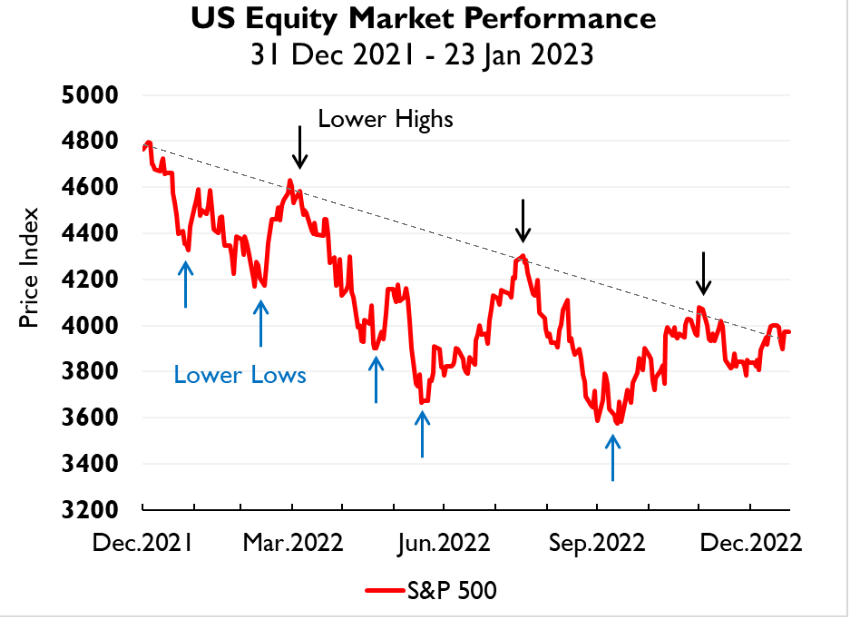
In terms of value, **the US equity market is much more expensive than its eastern counterparts**. Future earnings are rated at 18 times, but in Japan it is at 12x and in China at 11x. **This relative gap has caused a switch from the US equity market into cheaper ones**, triggering a sea change in the asset trend rankings. As the recession develops, even these markets will drop back, but for now we must go with them.

The second change we have observed is that **it is now perceived that global inflation has topped out**. It is still very high, but most investors believe it will decline. As a result, **the holdings in commodities have dropped suddenly in the Model**. The momentum is now negative. Only Gold differentiates itself, by behaving more like a currency than a metal.

Ever since last year, Global equity markets have been in a bear phase. The pattern on the charts is one of falling-highs and lower-lows, below falling moving averages (Figure 1). We can see, however, that this has continued for the US equity market (Figure 1a) but **in the rest of the world**, excluding the US, **the down trend has been breached, and a new relative up trend has emerged** (Figure 1b). **This is a strong trend but will not last very long**. It is currently helping to close the relative value gap, but as the global economy cools further into recession, then all markets will drop. **The model says we should follow it, even though it seems illogical to buy equities in a global bear phase**.

► Figure 1: The US and World Equity Markets have mapped out a classical bear market pattern since last year

(a)



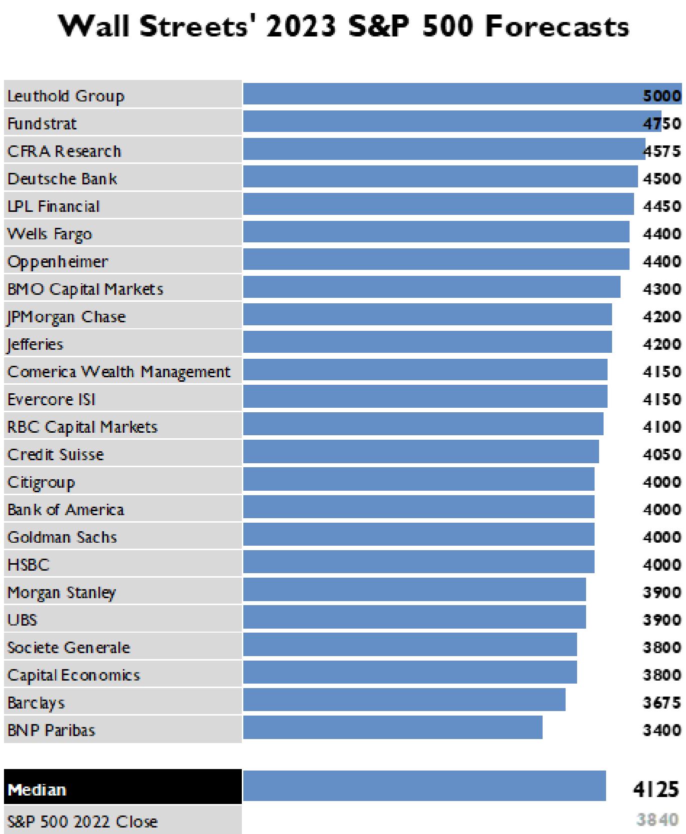
(b)

Source: ByteTree, Refinitiv Datastream

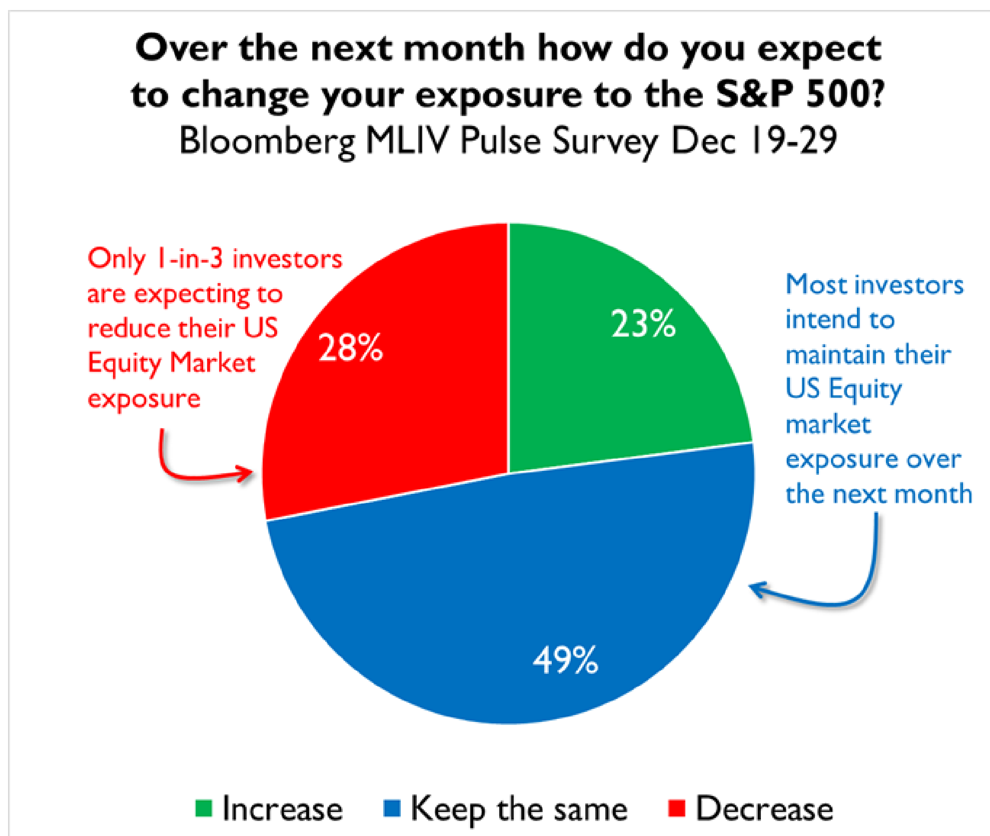
Despite the uncertainty in the market, investors appear to be maintaining a sense of optimism. According to a survey by Fortune, Wall Street strategists predict a 7% rise in the S&P 500 this year, following last year's double-digit decline (Figure 2a). Only two firms on this list are forecasting a meaningful setback in the US equity market. As a result, many investors plan to maintain their exposure to US equities, with only 1-in-3 considering a reduction (Figure 2b). **These optimistic projections do not reflect the true risks present in the market.**

► Figure 2: Judging by Wall Streets' S&P 500 Forecasts and investors anticipated allocations to US Equities this year, investors are underestimating the risks that lie ahead

(a)



(b)

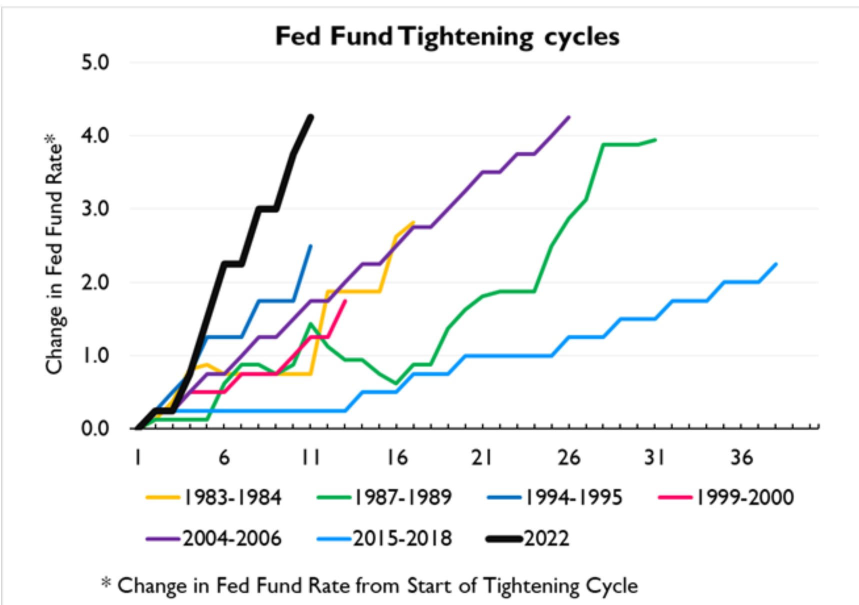


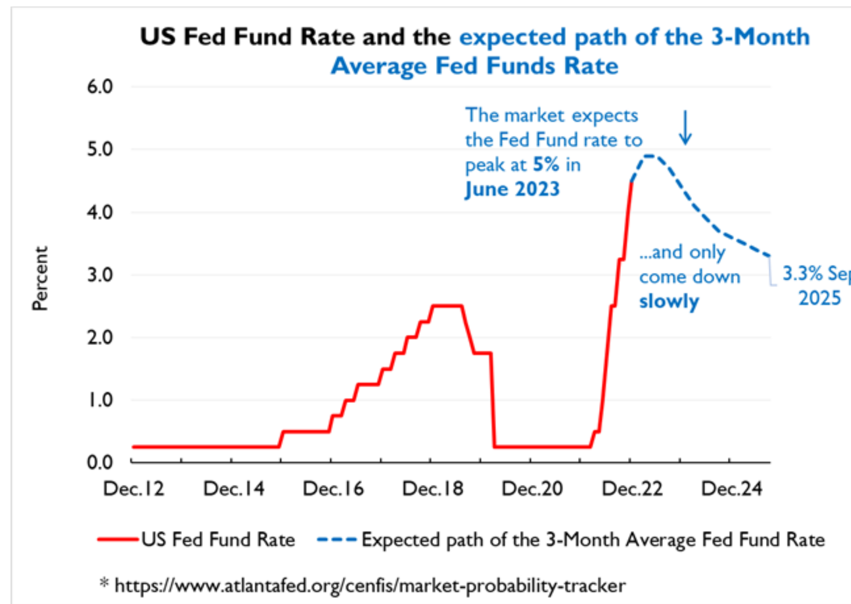
Source: ByteTree, Fortune, Bloomberg MLIV Pulse Survey

One of the main reasons we are bearish on the outlook for the US economy and stock market this year is due to the pace and extent of monetary tightening we saw last year. Historically, Fed tightening cycles have often resulted in economic recessions. Adding salt to the wound, the most recent tightening cycle has been the most aggressive since the early '80s (Figure 3a) and has continued in the face of an economic slowdown. Markets anticipate the Federal Reserve will continue hiking interest rates to 5% by June and hold them there through 2023, before gradually cutting them in 2024 (Figure 3b). These actions are likely to have unintended consequences, **making a soft landing very unlikely in the near future.**

► Figure 3: We've experienced the most aggressive Fed tightening cycle since the early 80s and the Fed is not done hiking rates

(a) **(b)**



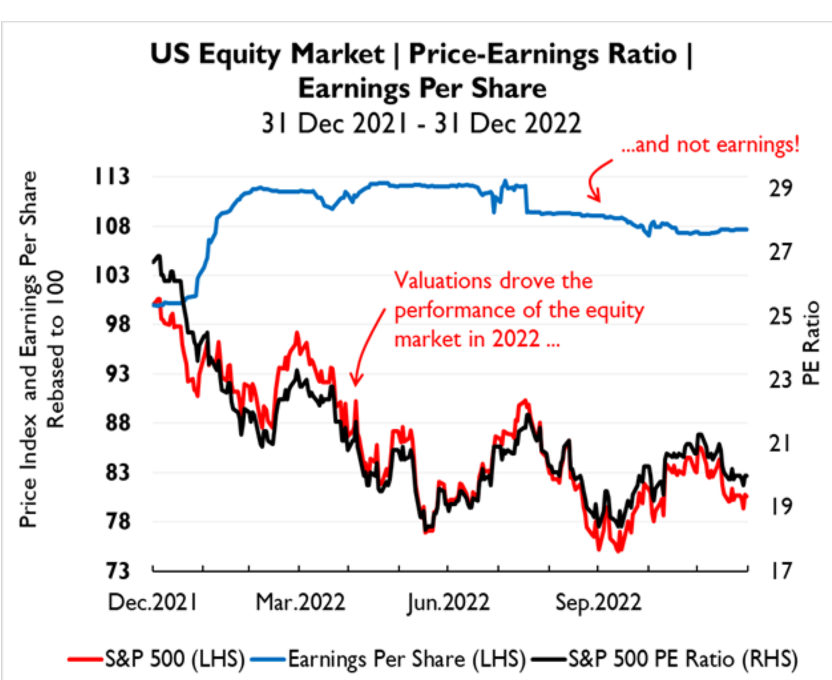


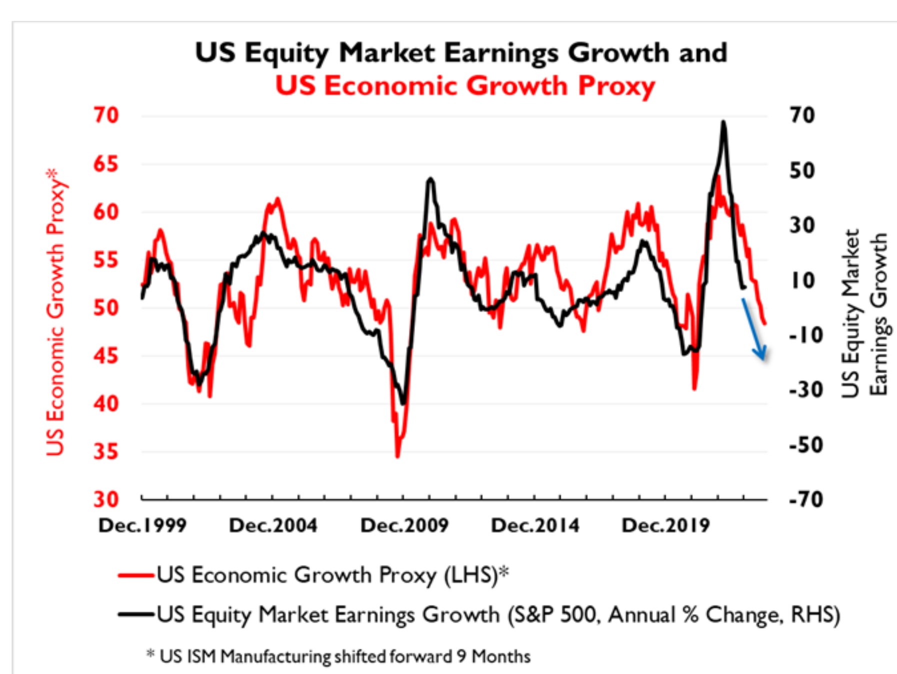
Source: ByteTree, Refinitiv Datastream, AtlantaFed Market Probability Tracker

Last year, the fall in the US equity market was driven primarily by a collapse in valuations (Figure 4a). In fact, we can see that the US Equity market and Price-Earnings multiple were moving in lockstep for most of the year. **This year,** as the US and global economy fully respond to the effects of tighter financial conditions in place since rate-hikes began last year, **we expect the bear market will resume - but be driven by a collapse in earnings**. This is in line with historical norm, as earnings have been closely tied to the economic cycle and a slowdown in economic growth has frequently led to a contraction in earnings (Figure 4b).

► Figure 4: Whilst a contraction in valuations drove the bear market last year, expect earnings contraction to drive the next leg of the bear market this year

(a) **(b)**





Source: ByteTree, Refinitiv Datastream

We prefer to be data-driven in our approach and the simple reality is that **there are many classic signals screaming that a US recession is on the horizon** (Figure 5). Firstly, Government bond markets are showing signs of a recession, with **a steep inversion of nominal bond yield curves** (Figure 5a). This is a recession indicator that has not been wrong in over six decades, and it's even more inverted now. Additionally, US Industrial Production has fallen in six of the past 8 months (Figure 5b), with large drops in November and December. This means that **the manufacturing sector is already in recession. The Federal Reserve Bank of Philadelphia** produces an index that measures economic conditions in the 50 US states and the **diffusion index doesn't paint a pretty picture of the US Economy** (Figure

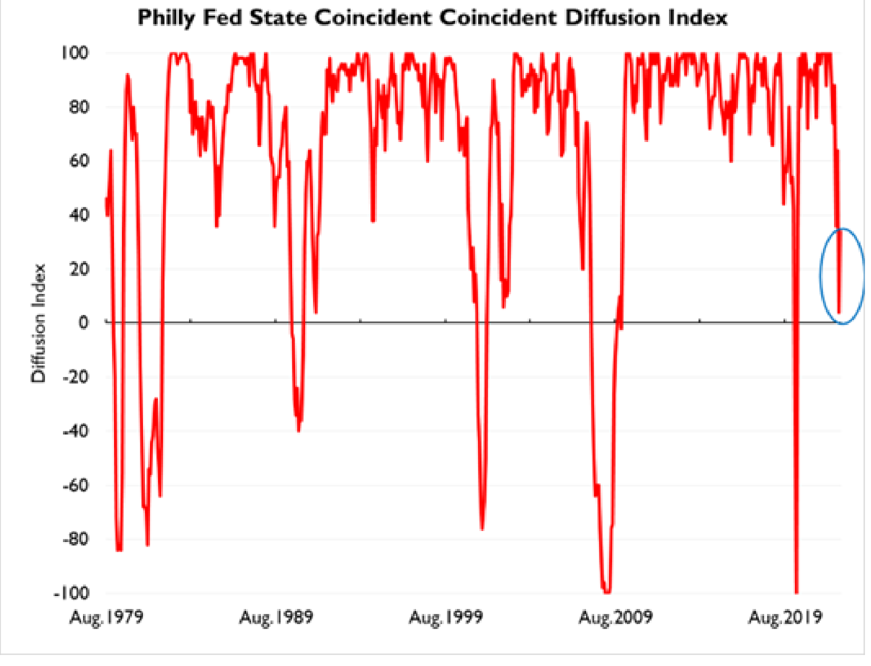
5c). Finally, **the US Services sector**, which accounts for more than two-thirds of the US economic activity, **is also in contraction** (Figure 5d). Taken together, all these indicators suggest a recession lies ahead in the broader economy.

► Figure 5: Classical harbingers of a recession are screaming that a US recession is around the corner

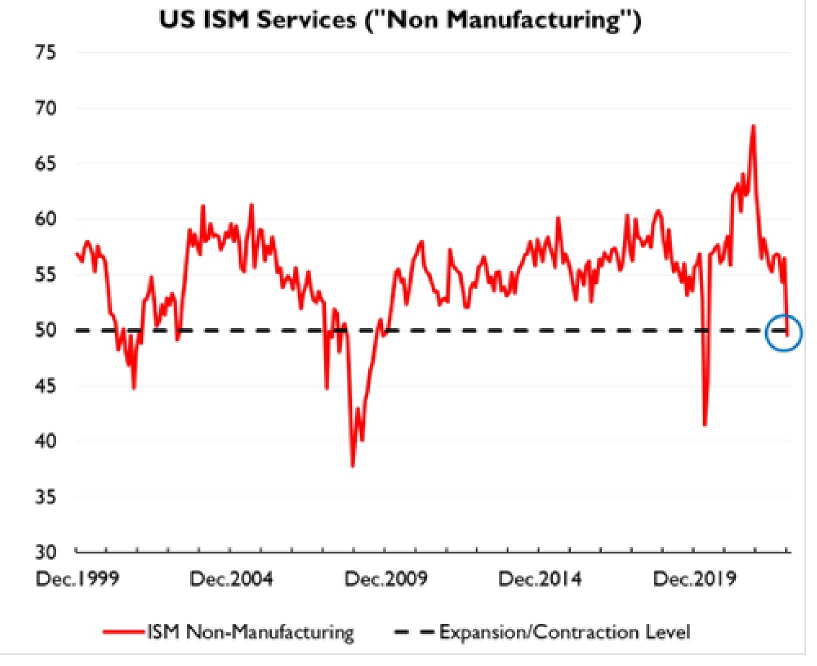
(a)

(b)

(c)



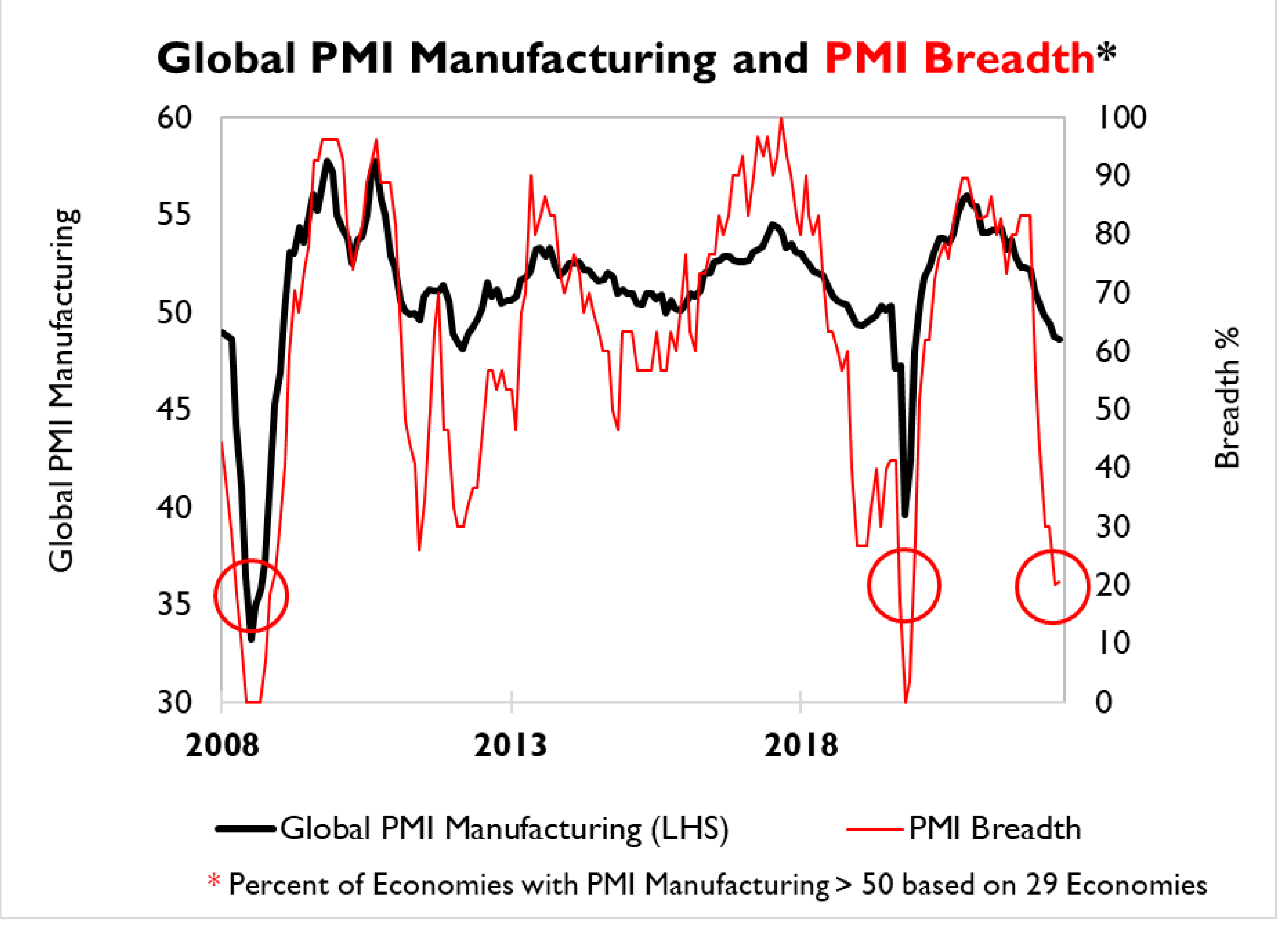
(d)



Source: ByteTree, Refinitiv Datastream

Of course, the US Economy is not the only problem child. We can be as certain as sun rises in the east that **if the US economy falls into recession, then the rest of the world will follow**, in a domino fashion. Historically, manufacturing surveys have served as a canary-in-the-coalmine when it comes to predicting global recessions. This **makes the collapse in the breadth reading of the Global PMI Manufacturing series worrisome** (Figure 6). We can see that **almost 80% of the 29 economies surveyed are in contraction territory** (Figure 6) and the overall indicator is at levels which in the past have coincided with a global recession. The global manufacturing industry is clearly in economic contraction and warns of a global recession ahead.

► **Figure 6: Global PMI Manufacturing breadth readings are at levels which have in the past coincided with a global recession**

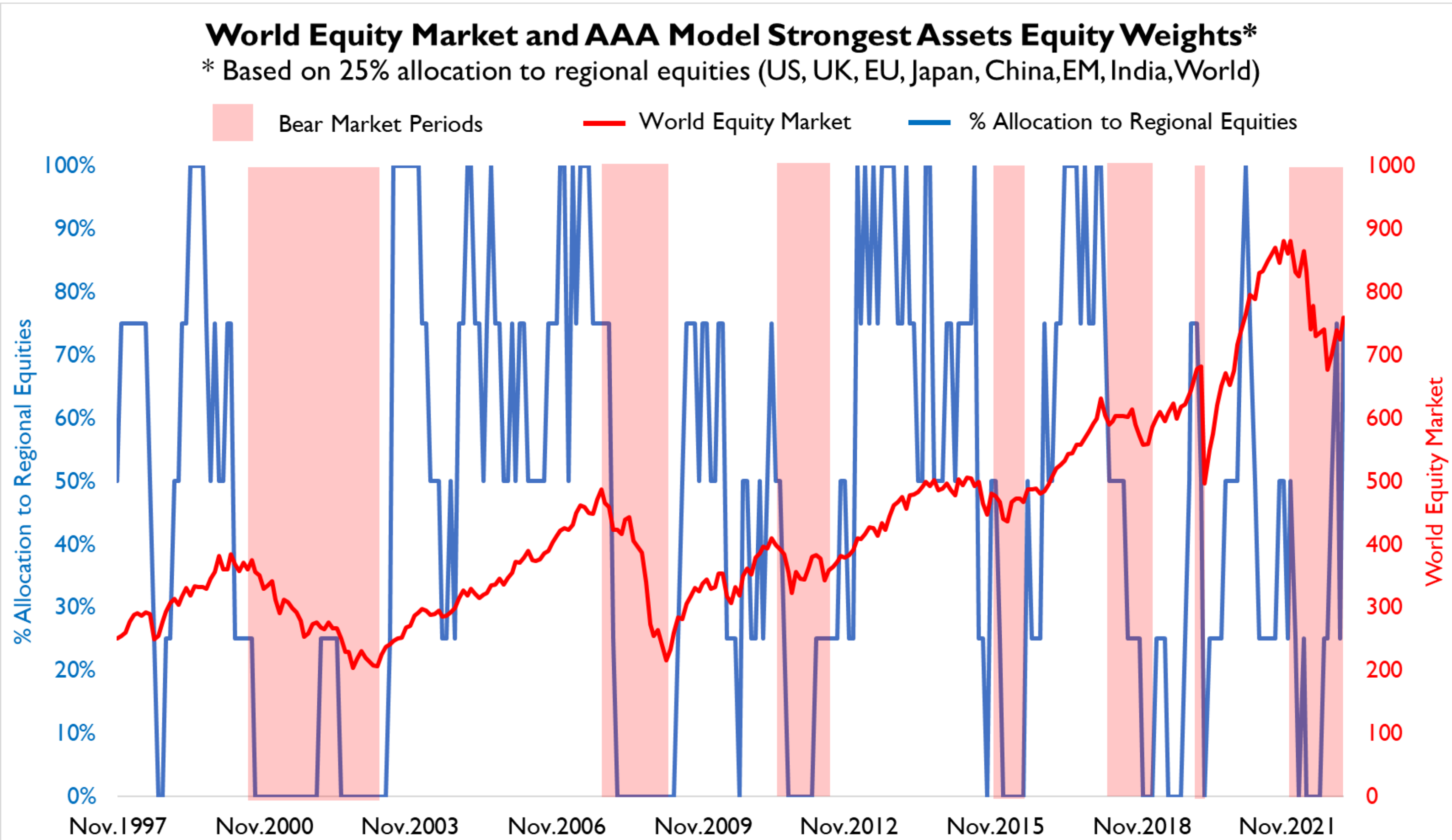


Source: ByteTree, Refinitiv Datastream

It feels odd that our indicators are suggesting that a recession is on the horizon, yet our model is putting us into global equities in the middle of a bear market. Looking back at the historical equity weightings in the model (Figure 7 – blue line), we can see that this is not normal; the model has never allocated more than 50% to equities in a bear market – depicted as the pink shaded bands in Figure 7. Clearly something untoward is happening and leads us to believe that this is the "Pain Trade".

To buy into the bullish hypothesis, we have to believe – at a minimum – that the Fed is done hiking rates and will start to cut them imminently, the yield curve inversion signals (Figure 5a) are wrong this time, corporate earnings will not fall as suggested by leading indicators (Figure 4b) and the Global PMI Manufacturing breadth readings are just an anomaly. We must believe this and more – which we simply cannot rationalize. So, **for now, whether we like it or not, we have to accept this as the "Pain Trade" and just run with it**. There will come a time when we reverse this position, but not yet.

► **Figure 7: Historically the AAA Model has not allocated anywhere close to 75% in equities during a bear market making the current weighting anomalous**



Source: ByteTree, Refinitiv Datastream

One of our readers has made the astute observation that **the extraordinary gains from our Model were delivered in the first ten years** (1999 – 2008), **whereas the performance over the last ten years** (2013-2022) **has "still [been] good, but not extraordinary"**. This begs the question: why are these two ten-year periods so different?

Firstly, we agree - there is indeed a stark difference in performance between the first ten years compared with the last ten. If we plot the 3-year rolling returns of the AAA model and overlay the 3-year rolling returns of the World Equity Market over the same period (Figure 8a), we can see that **prior to Dec 2011, the AAA Model consistently outperformed the World Equity Market** (Figure 8a – red line). As an aside, the reason we have chosen to use three-year rolling returns is to try and reduce the impact of short-term movements (individual years). Five-year returns would also have sufficed.

Secondly, observe that **there has been no period, on a three-year rolling basis, where returns from the AAA model have been negative**. Contrast that with the World Equity Market which dipped significantly below zero twice – both in 2002 and 2008.

If we now **compare our performance to other trend funds**, using the Barclay BTOP 50 Index in GBP, we find that the AAA Model has consistently outperformed both pre-and-post QE although **the edge we appeared to have prior to QE has dissipated** (Figure 8b). In other words, the Model has still outperformed other trend funds post QE, but not by as much as the period prior to it. What this tells us is that **things have gotten tougher due to continued interventions by Central banks.**

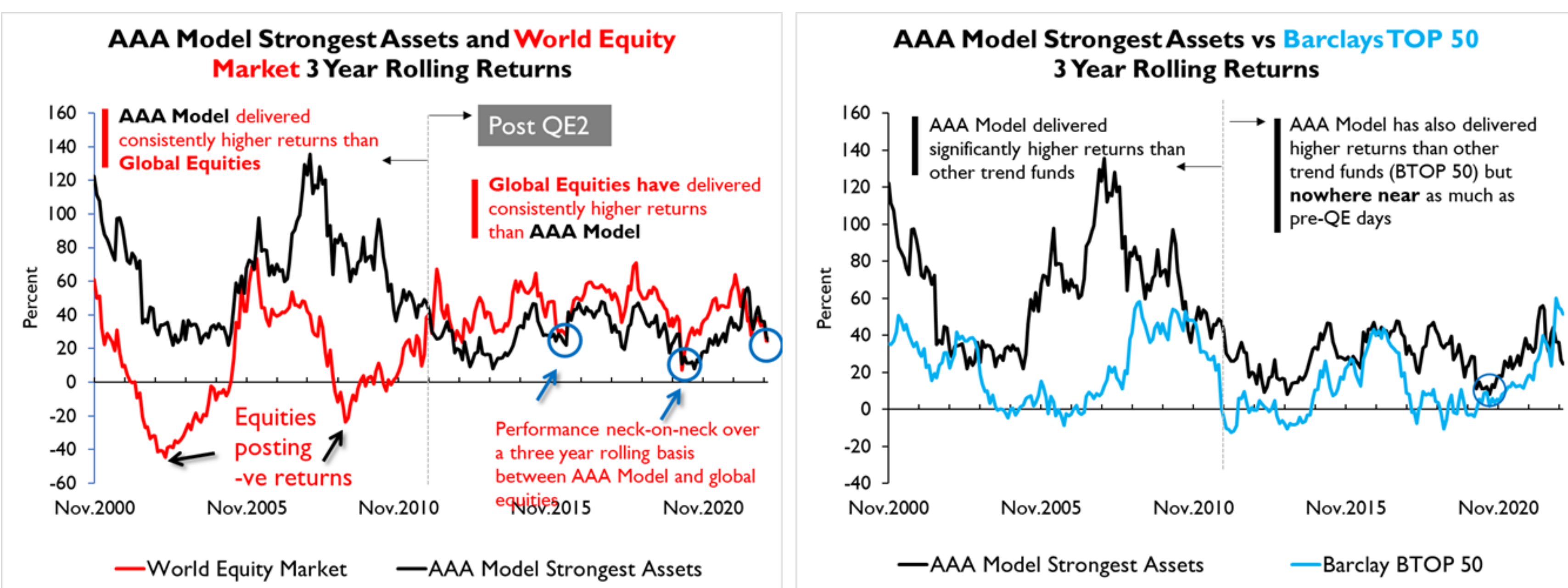
Prior to QE, the US equity market underperformed global ones – specifically from 2002-2008. Since then, the equation has been flipped on its head. As a result, successive bouts of money printing by central banks have meant that **if we had been invested in any AAA Model assets other than the US equity market, we would have underperformed**. That's because the latter has outperformed other equity markets in the AAA model by a wide margin. Just to highlight how extreme the outperformance of US versus Global equities has been, consider that £100 invested in the US equity market on 1st March 2009 has grown to £820 as at 20 Jan 2023; these figures include dividends reinvested. The same £100 invested in the Global (excluding US) equity market has grown to £383, including dividends reinvested.

Considering that the AAA Model holds 4 assets in the strongest asset category, at most we would have held 25% in US equities when it was ranked amongst the strongest assets. **In short, prior to QE, the opportunity was in global equities (over the US)**, which helped to enhance our returns. **Post QE, it's been the other way around, with the AAA Model only able to hold a maximum of 25% in US equities** based on the policy of holding an equal position in the top four strongest ranked assets.

Another key reason for the difference in performance between the first and the last ten years of the model **is down to the fact that the first ten years encapsulated two large drawdown periods** (bear markets) during which time the model was able to preserve capital and race ahead, as it compounded from a higher base, when the next bull market begun. By contrast, after a 50% drawdown, the global equity market had to generate 100% just to return to the same level prior to the fall. **Since QE, protracted bear markets have been outlawed**. As a result, the model has not been able to replicate its prior stellar performance as the market environment has changed.

► Figure 8: The AAA Model is not performing as well as it used to prior to QE and compared with Global Equity Markets, but it has still done better than many trend funds before and since

(a) (b)



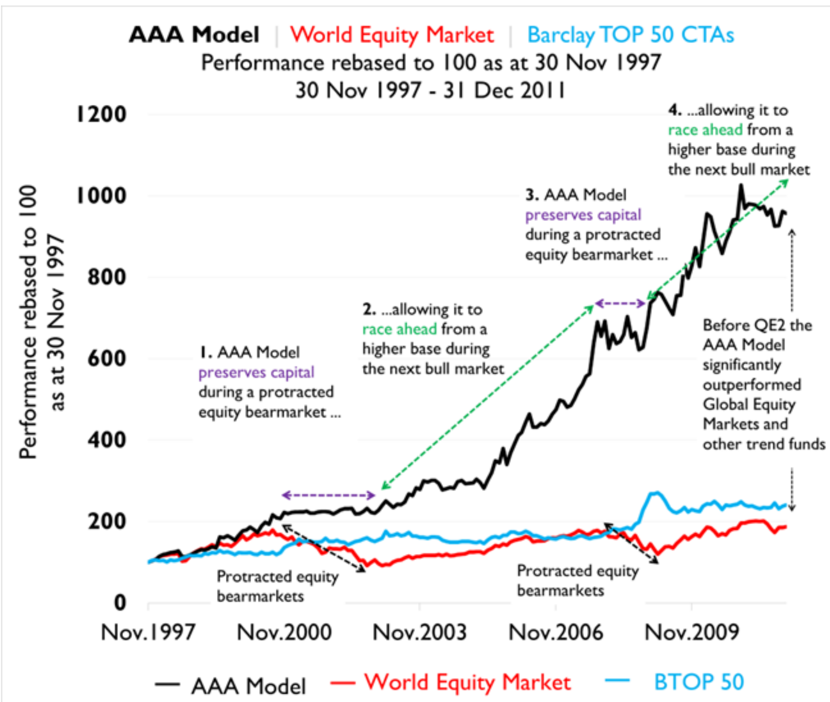
Just to highlight the stark difference in the AAA model's performance prior to and post QE, we have **shown the performance of the model over the period 1998 to December 2011** (Figure 9a), when the model was ahead − determined using Figure 8a − and **again from Dec 2011 to today** (Figure 9b). As can be seen, the performance difference is stark. Prior to QE, the global equity market was punctuated by two protracted bear markets, during which the AAA Model managed to significantly preserve capital – especially compared to the global equity market − allowing it to compound from a higher base in the subsequent bull market. **This preserve-grow-preserve-grow function of the Model ensured it gained a significant lead over the global equity market over this period** (Figure 9a)**.**

In contrast, **since 2011 there have been no protracted global equity bear markets,** as seen in Figure 9b, **due to continued central bank intervention**. Even during the COVID-19 related carnage, central bankers stepped in forcefully to try and short-circuit the selloff and propel markets to new all-time highs. Going forward, we do not believe Central banks can continue playing this game − printing money ad infinitum − to keep equity markets permanently elevated. **Now that the domination of the US is coming to an end, things should be different in the future.**

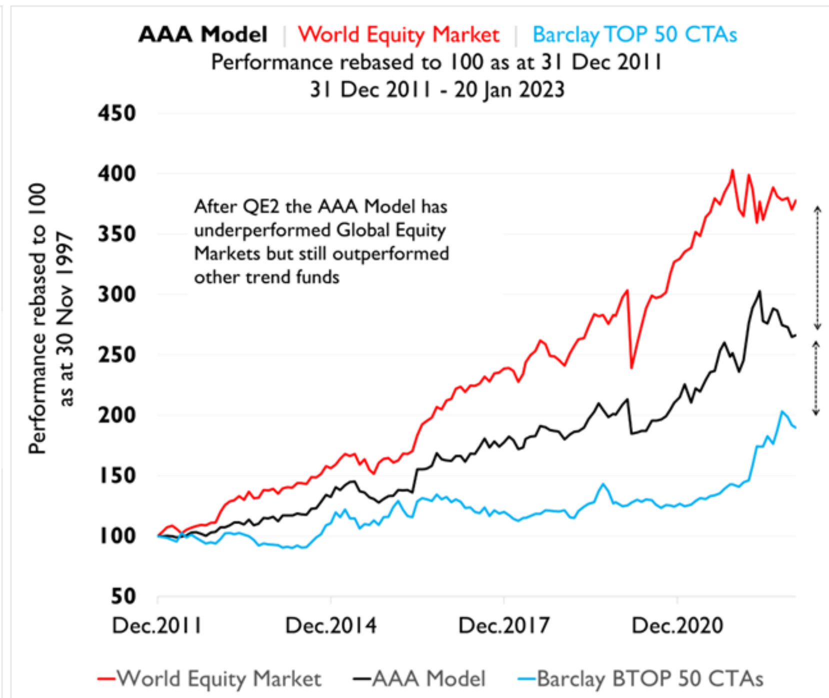
Admittedly, the AAA Model has not outperformed the US or World Equity markets since central banks wholeheartedly embraced QE. **Beating the global equity market** would have been an added boon, but this **has not been the aim, nor has it been achieved**. **The Model was designed**, instead, **to provide investors with a good return with minimal downside risks** – measured primarily in terms of drawdown. It has delivered on this front. But how can we tell - we still need a benchmark to compare with.

► Figure 9: The "preserve-grow-preserve-grow" function of the AAA Model allowed it to significantly outperform the Global equity market prior to QE, something it has been unable to replicate since as protracted equity bear markets have been repealed by central bank intervention

(a)



(b)



Source: ByteTree, Refinitiv Datastream

At a minimum, all models should be compared with cash, because this is the return our readers would have achieved if they had done nothing other than kept their money in cash over the same period. As **many of our readers relate to the FTSE 100,** and are trying to beat it, in the past **we have preferred to compare our performance with this benchmark**. But we admit this is not an entirely fair benchmark for the AAA Model as it is only comprised of UK Equities whereas our model can hold other equities and assets.

One alternative could be to benchmark ourselves against the FTSE Private Investor benchmarks. These benchmarks are designed to monitor the performance of multi-asset portfolios for UK participants with a set of asset allocation benchmarks covering equities, fixed income, cash, property and other investments. The allocations can be seen here. Of the various FTSE Private Investor benchmarks, it can be argued that the **FTSE Private Balanced benchmark may be the most suitable** as it has held similar weights in equities as the AAA model. The latter has historically held around 50% in equities, on average.

Admittedly, **the FTSE UK Private Investor Income Index is even closer aligned to the AAA Model** in its equity weight (50%), **however this benchmark is designed for income portfolios which is not the AAA Model remit.** One could then make the case that the FTSE Private Balanced benchmark is also not a suitable benchmark for comparison with the AAA Model as it holds a fixed weight in equities (around 60%) whereas the AAA Model can oscillate anywhere between 0 and 100% as the model adapts. Should we then use the **FTSE UK Private Investor Global Growth Index as a fairer comparison?** But again, **this benchmark has a constantly large weight in equities whereas our model can be 0% invested in them** at one point and fully invested in them at another.

Undeniably, the **FTSE UK Private Investor benchmarks are better suited for comparison with the AAA Model than the FTSE 100 but they are also not perfect because of their weights and asset mixture.** The way to think about it is that the AAA Model can be closely aligned to the FTSE UK Private Investor Ultra Conservative Index (the lowest risk version) in one month and the FTSE UK Private Investor Global Growth Index (the highest risk version) in another, as market conditions change.

There is, of course, another logical alternative: the Barclay BTOP 50 Index. Regardless of our portfolio holdings, one could argue that this benchmark is also suitable to compare with the AAA Model as the underlying funds are trying to do something very similar to us – both grow and preserve capital using a trend-following methodology. Whichever benchmark we opt for, **we also know that inflation is an important consideration for our readers**. As the same reader (mentioned earlier) put it, "My main benchmark has always been how I'm doing against inflation, as I was saving for retirement and I'm now there. I wanted to feel confident that I was gaining purchasing power." So, let's compare the performance of the AAA Model against each of these benchmarks including inflation.

The results are shown below (Figure 10) for the period that the AAA Model was ahead of the World Equity Market as well as the period that it has lagged, determined by the performance crossover in Figure 8a. As can be seen for the first period (Figure 10a) **the AAA Model has easily beaten all the benchmarks on a return basis.** Moreover, **whilst the AAA Model has not had the lowest risk profile in terms of volatility, it has been the least risky when measured in terms of Maximum Drawdown**. The latter, in our opinion, is the more important risk metric, as it represents the amount by which investors would have been better off by had this drawdown not occurred. When we now **assess the return per unit of risk taken** (Figure 10a – last two columns) **we can see that the AAA Model has found the benchmarks as easy to beat as a drum.**

Separately comparing the performance of the AAA Model, against the same benchmarks, **over the period that the Model has lagged the World Equity Market** (Figure 10b), we can see that **in absolute terms the performance of the Model is still good.** It has returned a compound annual growth rate of 9.3% comfortably beating UK Cash and inflation. At the same time, it has also managed to outperform the FTSE 100, BTOP 50 Index and most of the FTSE Private Investor benchmarks.

Where it has struggled is versus the Global equity centric benchmarks – notably the MSCI World Index and the FTSE Private Investor Global Growth index. If we focus on the risk-adjusted returns, we can see that **the AAA Model has also delivered decent risk adjusted returns** – both in terms of the Sharpe and Calmar Ratio – however, it is **nowhere near as good as that delivered by the World Equity Market** (MSCI World) **over this period**. The bottom line is that the AAA Model has done a good job over the last decade, but it has not been able to keep up with the World Equity Market. Going forward we expect this to change as we do not believe Central banks can continue to intervene in the markets the way they have since the GFC. **Things, hopefully, should be different in the future.**

► **Figure 10: Performance statistics of the AAA Model compared with key benchmarks over the period that the AAA Model has outperformed the World Equity Market and vice-versa. Results overlaid with heatmap (green = good; red = bad)**

(a) Pre-QE: 30 November 1997 – 31 December 2011

	Return	Risk		Risk-adjusted Return	
30 Nov 1997 - 31 Dec 2011	CAGR % (Return)	Volatility	Maximum Drawdown	Sharpe Ratio	Calmar Ratio
AAA Model (Strongest Assets)	17.4%	15.6%	11.7%	83.2%	149.0%
MSCI World Total Return GBP	4.6%	16.4%	48.7%	0.7%	9.4%
FTSE 100 Total Return	4.3%	15.0%	44.4%	-1.0%	9.7%
Barclay BTOP 50 Total Return GBP	6.4%	11.5%	18.0%	17.1%	35.7%
FTSE UK Private Investor Conservative Total Return GBP	-	-	-	-	-
FTSE UK Private Investor Balanced Total Return GBP	5.1%	10.9%	32.8%	6.2%	15.6%
FTSE UK Private Investor Growth Total Return GBP	4.9%	12.8%	37.9%	3.9%	13.1%
FTSE UK Private Investor Global Growth Total Return GBP	-	-	-	-	-
UK Cash	4.4%	0.4%	0.0%	0.0%	-
UK Inflation (CPI)	2.1%	1.3%	1.5%	-	-

NB: 1. Sharpe Ratio = (CAGR of investment - CAGR of Cash) divided by Volatility
2. Calmar Ratio = CAGR divided by Maximum Drawdown

(b) Post-QE: 31 December 2011 – 31 December 2022

31 Dec 2011 - 31 Dec 2022	Return	Risk		Risk-adjusted Return	
	CAGR % (Return)	Volatility	Maximum Drawdown	Sharpe Ratio	Calmar Ratio
AAA Model (Strongest Assets)	9.3%	11.7%	13.5%	73.6%	68.7%
MSCI World Total Return GBP	13.2%	11.5%	15.5%	109.4%	85.1%
FTSE 100 Total Return	6.8%	11.9%	24.0%	51.8%	28.4%
Barclay BTOP 50 Total Return GBP	6.1%	11.9%	16.2%	46.0%	37.6%
FTSE UK Private Investor Conservative Total Return GBP	4.8%	4.7%	8.0%	89.8%	60.2%
FTSE UK Private Investor Balanced Total Return GBP	7.6%	7.2%	10.3%	97.2%	74.3%
FTSE UK Private Investor Growth Total Return GBP	8.8%	8.5%	12.7%	95.5%	68.9%
FTSE UK Private Investor Global Growth Total Return GBP	11.7%	11.2%	16.2%	98.7%	72.3%
UK Cash	0.6%	0.2%	0.0%	-	-
UK Inflation (CPI)	2.6%	1.5%	1.1%	-	-

NB: 1. Sharpe Ratio = (CAGR of investment - CAGR of Cash) divided by Volatility
2. Calmar Ratio = CAGR divided by Maximum Drawdown

Source: ByteTree, Refinitiv Datastream

The China equity market has rallied hard (Figure 11) **and shot up in the ranking table moving from the very bottom to the top**. It has had a long period of underperformance and had become cheap. Investors have become more optimistic about the prospects for the economy and stock market following the sudden shift in the country's zero-COVID policies. According to the latest Bank of America survey, at least 78% of investors believe that there is 20% upside for this market, this year. The hope is that China will breakout to new growth but aimed at boosting domestic demand and not just exports. We believe **this trend will continue strongly but will not proceed in a linear fashion**. It will be jerky and punctuated with setbacks, but we must own it. All the other markets to own are cheap like Japan or Europe. Even the UK and India Equity market are in the strong category. UK is good value and India is expensive but very strongly placed with good growth prospects and super-demographics.

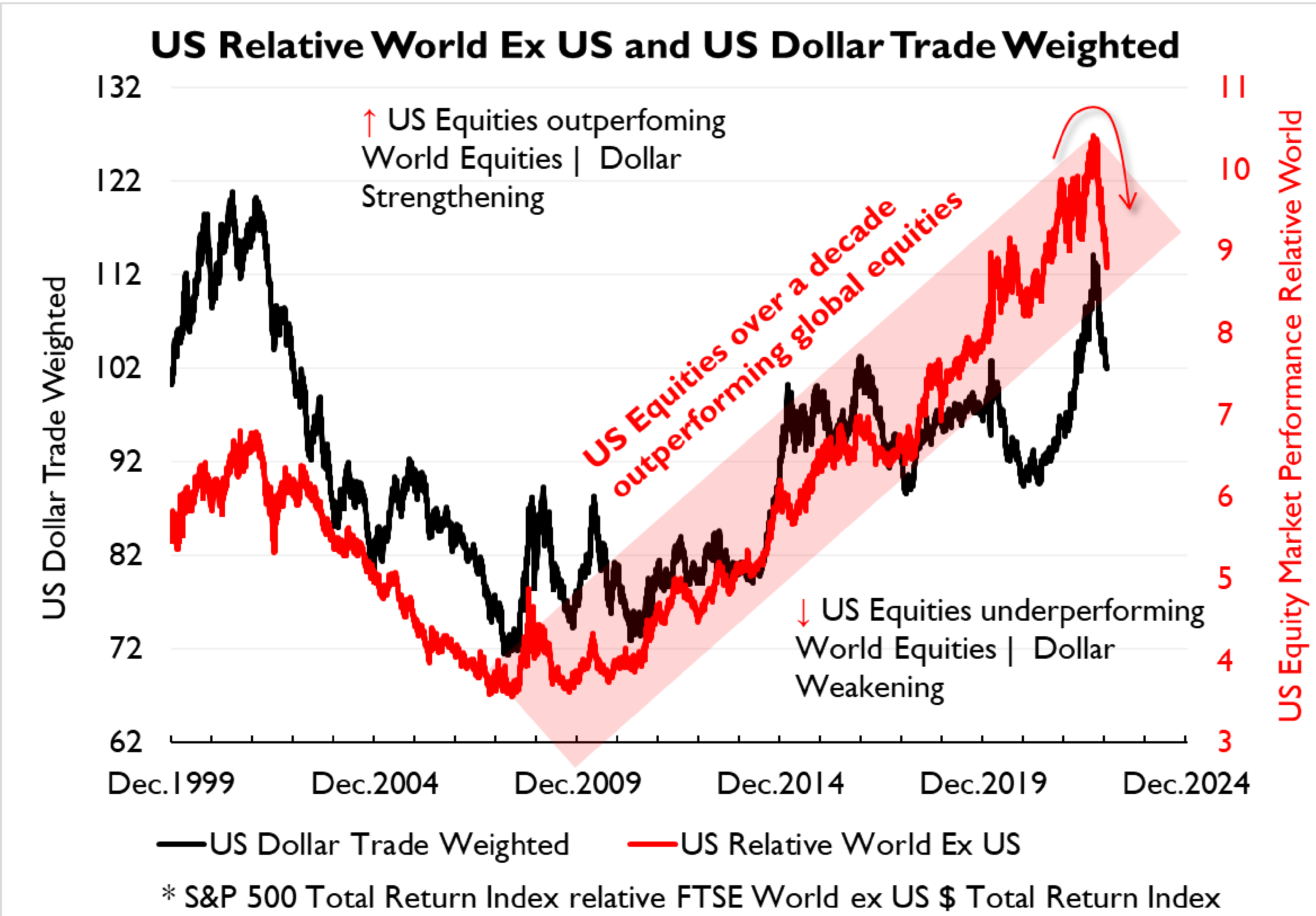
► **Figure 11: The China Stock market has rallied hard as investor sentiment has turned positive following the reopening of the economy. This trend will continue but not in a linear fashion.**

Source: ByteTree, Refinitiv Datastream

The Model's big bet is that Global equities will now outperform the US equity market and the US dollar will decline. This combination makes a strong switch away from the US, even in a global bear market. We have already seen the relative performance trend of US vs global equities being tested (Figure 12). It's still early days, and there is a long way to go, but investor positioning is backing this trend and it's being reflected in the AAA Model strongest holdings**.**

Finally, **we want to introduce you to a new page which will always be put in the back of the letter (Appendix 2)**. This addition has been driven by a request from a reader who has asked how he can "see the movements [of the Assets] rather than trying to look up [our] old reports". We believe the addition will be beneficial to all our readers. **It shows the total return monthly price charts of all the AAA asset classes ranked in the current order and colour-coded with their historical asset rankings**. The colour codes are intuitive and spelt out in the Appendix. Using these charts, we believe readers will be able to track changes much easier. Sometimes the changes take place slowly, but other times they are rapid – as with China now. We hope you will find this useful and help you to understand the AAA Model better. Pictures like this are worth a thousand words.

► **Figure 12: Investors are banking on global equities outperforming US equities this year after years of underperformance**



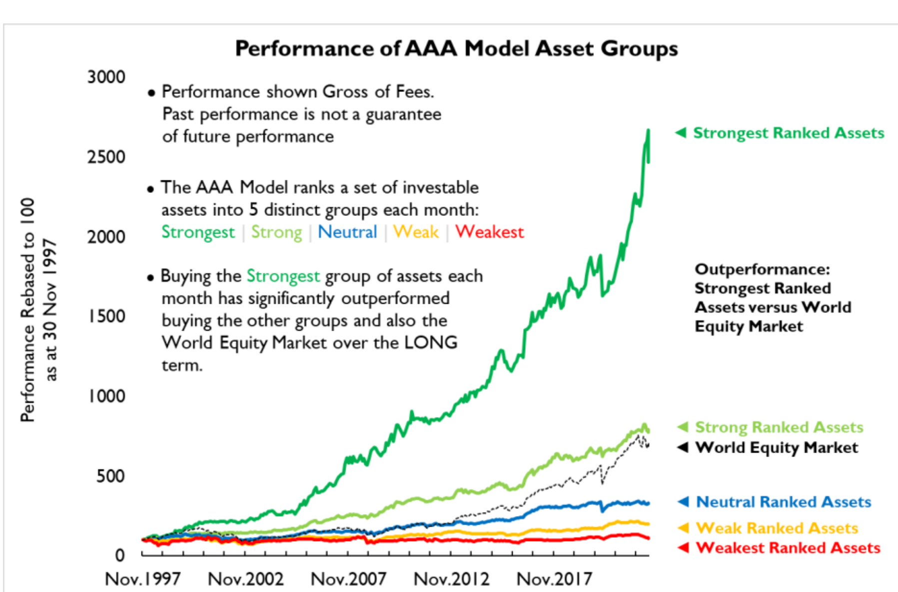
Source: ByteTree, Refinitiv Datastream

►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.

* 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

	December 2022	Representative ETF Name Distributing ETF Name; Accumulating ETF Name	Representative ETF Ticker Distributing*	Representative ETF Ticker Accumulating*
Strongest	Agricultural Commodities	No Distributing ETF ; ETFS Commodity Securities Agriculture Dow Jones UBS CI	-	AGAP
Strongest	India Equities	No Distributing ETF ; DB X-TRACKERS MSCI India Index UCITS ETF ACC	-	XCX5
Strongest	Gold Bullion	No Distributing ETF ; ETFS Physical Gold	-	PHGP
Strongest	Global High yield	iShares Global High Yield Corp. Bond UCITS ETF DIST ; iShares Global High Yield Corp. Bond UCITS ETF ACC	IGHY	HYLA
Strong	UK Cash	No Distributing ETF ; No Accumulating ETF	-	-
Strong	UK Equities	iShares Core FTSE 100 UCITS ETF DIST ; SPDR FTSE UK All Share UCITS ETF	ISF	FTAL
Strong	World Low Volatility Equities	No Distributing ETF ; iShares Edge MSCI World Minimum Volatility UCITS ETF	-	MVOL
Strong	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
Strong	EU Equities	iShares MSCI Europe ex UK UCITS ETF EUR (DIST) ; iShares MSCI EMU UCITS ETF ACC	IEUX	CEU1
Neutral	Japan Equities	iShares MSCI Japan UCITS ETF DIST ; iShares Core MSCI Japan IMI UCITS ETF ACC	IJPN	SJPA
Neutral	Inverse UK Equities	No Distributing ETF ; DB X-TRACKERS FTSE 100 SHORT DAILY ETF	-	XUKS
Neutral	Energy Commodities	No Distributing ETF ; ETFS Commodity Securities Energy DJ-UBSCI	-	AIGE
Neutral	Industrial Metals	No Distributing ETF ; ETFS Industrial Metals ETC	-	AIGI
Neutral	EM Equities	Vanguard FTSE Emerging Markets UCITS ETF USD ; No Accumulating ETF	VFEM	-
Weak	World Equities	iShares MSCI World UCITS ETF USD DIST ; iShares Core MSCI World UCITS ETF USD ACC	IWRD	SWDA
Weak	Global Govt Bond	iShares Global Govt. Bond (USD) DIST UCITS ETF ; iShares Global Govt Bond UCITS (ACC) ETF	SGLO	IGLA
Weak	China Equities	HSBC MSCI CHINA ETF ; No Accumulating ETF	HMCH	-
Weak	US Equities	iShares S&P 500 UCITS ETF USD DIST ; ISHRS Core S&P 500 UCITS USD (ACC) ETF	IUSA	CSP1
Weak	World Quality Equities	No Distributing ETF ; iShares Edge MSCI World Quality Factor UCITS ETF	-	IWFQ
Weakest	UK Corporate Bonds	iShares Core £ Corp Bond GBP UCITS ETF ; No Accumulating ETF	SLXX	-
Weakest	Global Corporate Bonds	iShares Global Corp Bond UCITS (USD) DIST ; iShares Global Corp Bond UCITS (USD) ACC	CRPS	CRPA
Weakest	UK Gilts	iShares Core UK Gilts UCITS ETF GBP ; No Accumulating ETF	IGLT	-
Weakest	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 [1]

AAA Model Rankings GBP Portfolio with representative ETF Tickers

	January 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
	China Equities	HSBC MSCI CHINA ETF ; No Accumulating ETF	HMCH	-
	Japan Equities	iShares MSCI Japan UCITS ETF DIST ; iShares Core MSCI Japan IMI UCITS ETF ACC	IJPN	SJPA
	Global High yield	iShares Global High Yield Corp. Bond UCITS ETF DIST ; iShares Global High Yield Corp. Bond UCITS ETF ACC	IGHY	HYLA
Strong	Gold Bullion	No Distributing ETF ; ETFS Physical Gold	-	PHGP
	India Equities	No Distributing ETF ; DB X-TRACKERS MSCI India Index UCITS ETF ACC	-	XCX5
	UK Equities	iShares Core FTSE 100 UCITS ETF DIST ; SPDR FTSE UK All Share UCITS ETF	ISF	FTAL
	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
Neutral	UK Cash	No Distributing ETF ; No Accumulating ETF	-	-
	Global Govt Bond	iShares Global Govt. Bond (USD) DIST UCITS ETF ; iShares Global Govt Bond UCITS (ACC) ETF	SGLO	IGLA
	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
	World Low Volatility Equities	No Distributing ETF ; iShares Edge MSCI World Minimum Volatility UCITS ETF	-	MVOL
Weak	Global Corporate Bonds	iShares Global Corp Bond UCITS (USD) DIST ; iShares Global Corp Bond UCITS (USD) ACC	CRPS	CRPA
	Industrial Metals	No Distributing ETF ; ETFS Industrial Metals ETC	-	AIGI
	UK Corporate Bonds	iShares Core £ Corp Bond GBP UCITS ETF ; No Accumulating ETF	SLXX	-
	US Equities	iShares S&P 500 UCITS ETF USD DIST ; ISHRS Core S&P 500 UCITS USD (ACC) ETF	IUSA	CSP1
	Inverse UK Equities	No Distributing ETF ; DB X-TRACKERS FTSE 100 SHORT DAILY ETF	-	XUKS
Weakest	Agricultural Commodities	No Distributing ETF ; ETFS Commodity Securities Agriculture Dow Jones UBS CI	-	AGAP
	UK Gilts	iShares Core UK Gilts UCITS ETF GBP ; No Accumulating ETF	IGLT	-
	Energy Commodities	No Distributing ETF ; ETFS Commodity Securities Energy DJ-UBSCI	-	AIGE
	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.

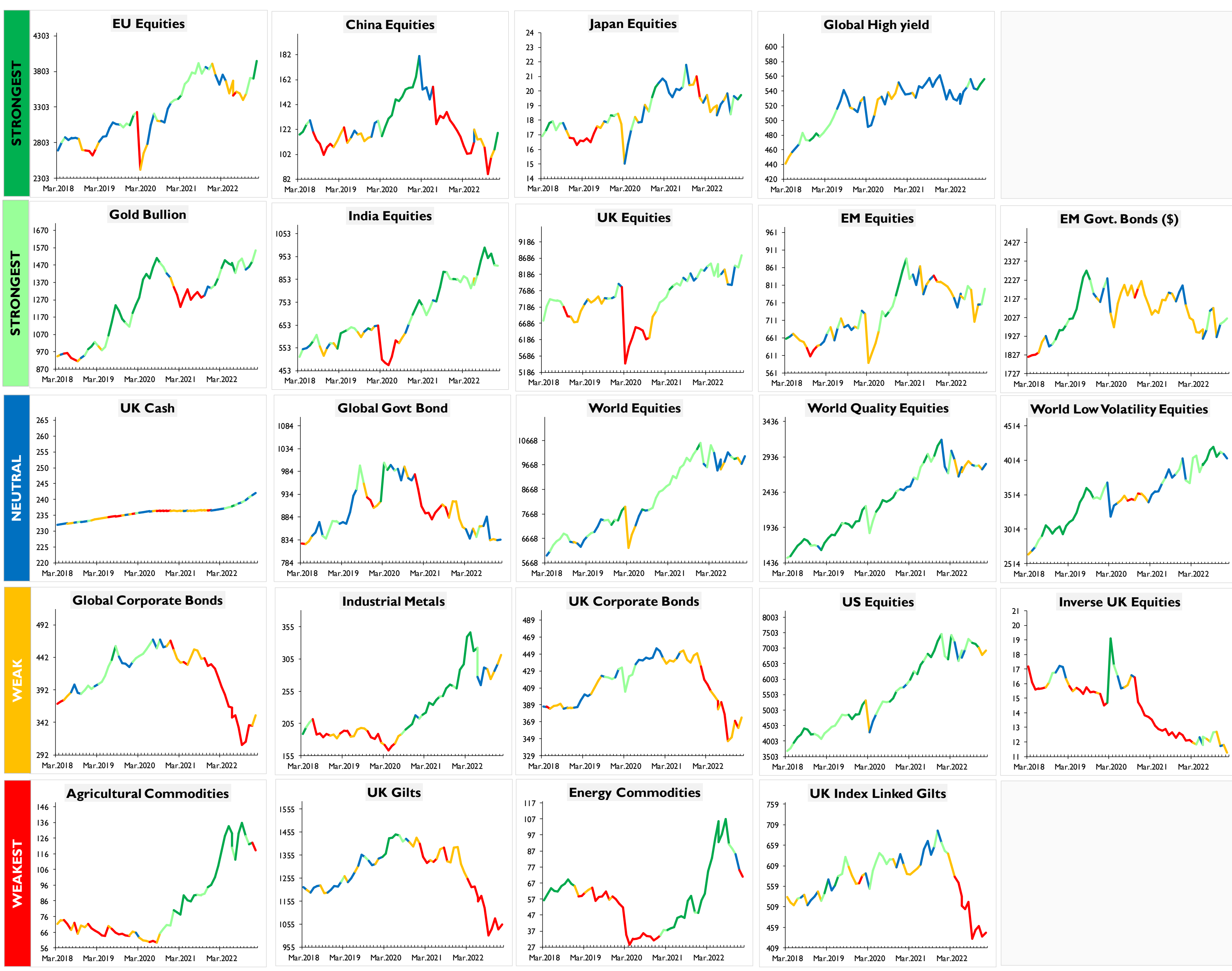
Source: ByteTree, Refinitiv Datastream

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

Disclaimer