30th November 2022

The Adaptive Asset Allocation Report

Issue No. 6

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.

No Free Lunch

Dear Readers,

Last month most stock markets rallied. We predicted this in the last issue as the strongest probability for a rally is normally during the months of November and December. After the rally, most markets are still well down on the year. It is conforming to a classic bear market rally.

We are concerned that even after the equity market sell off this year, valuations are still very high and housing affordability remains very poor. This pumping up of asset values has been going on since Alan Greenspan gave his famous "irrational exuberance" speech. What started in the USA but has been copied all over and is now a Global phenomenon. Inflation was bound to happen.

Whilst some components of US inflation have cooled down – especially in goods prices – the same is not true of services. The Fed will be looking at these very closely as they try and build a better picture of the inflation outlook. They will very likely keep hiking rates until it is clear that inflation in services has topped out; there are no signs of this yet. The probability of a recession next year is very high indeed. After the rally, the holdings we have are primarily equity based. This rally could last a while longer, but we only want to rent it and not own it. Use it to get level and de-risk the portfolio. 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,

The title of our newsletter this month is a reminder that the economic and market conditions we are experiencing are largely the result of central banks profligate policies enacted since the Great Financial Crisis. There was bound to be payback and we are slowly realizing the consequences of these policies.

In the United States, ever since the Baby Boomers entered their key working years and began to accumulate assets, the Fed has resorted to cutting interest to prevent severe economic downturns and asset price deflation. By doing so, they managed to prop up household networth so that households would continue to feel wealthy, have a higher propensity to spend and keep "prosperity" on track. The only problem is that these policies have benefitted asset owners much more than salaried workers − evidenced by the growth rate of asset prices far outstripping the growth rate of the US economy.

After the crash in 2008, US Household networth began to fall rapidly and appeared to be catching up with economic reality. It seemed like the game had finally come to and end. Sadly, that was not to be. Before long, the Fed had short-circuited the decline using ZIRP and Quantitative Easing, rebuilding US household networth and relaunching its stratospheric climb. This strategy was enacted at every juncture until the coronavirus pandemic changed the game. It caused a surge in global inflation and forced the Fed's − and other central bankers – hand. When it became clear just how woefully behind the curve they were, they had no option but to aggressively and deliberately start hiking interest rates to play catch-up on inflation.

Now, we find ourselves in a world where central banks are struggling to hold down inflation, income inequality runs rampant and asset prices are at risk of a giant correction. If you were to rate central banks for the job they have done, what rating would you give them?

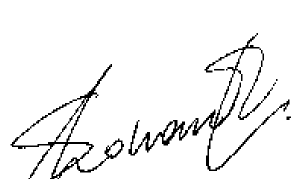
Over the last month, US headline inflation has fallen to 7.8% from the June peak of 9.1%. This has raised hopes amongst investors that US inflation has peaked, and the Fed may not need to tighten as aggressively as before. The truth is a little more nuanced. Whilst the figures are encouraging, services inflation is yet to peak and this matters to the Fed. The bottom line is that the Fed will not stop hiking interest rates until this is under control. Whilst they may eventually end up crushing inflation, they will also break the economy in the process. Unfortunately, there is no free lunch – especially in economics.

For now, markets have been rallying on the back of the good (inflation) news. But it's only a rally in the context of a bear market. We are only seven months into the rate hiking cycle and more pain lies ahead. Use the rally as a chance to get level and reduce portfolio risk. Essentially, rent the rally don't own it.

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

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

Best Wishes,



Rashpal Sohan

AAA Model Ranking
GBP Portfolio

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

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

ADDENDUM

The model was first run-on 25th November 2022 this month. At this time, the strongest ranked assets were India Equities, World Low Volatility Equities, US Equities and World Equities. The model was rerun on the 29th of November 2022 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	• **US Equities** • **World Equities**
Hold	• **India Equities** • **World Low Volatility Equities**
Sell	• **Inverse UK Equities** • **Agriculture Commodities**

- **Stock markets have rallied over the last month. This is a seasonal rally within the context of a bear market.**
- **The rally should continue through December but in the New Year the bear phase will likely resume.**
- **Market valuations are still very expensive and house prices are ridiculously high. A major correction is due.**
- **The probability of a global recession next year is highly elevated. This has not yet been fully discounted.**
- **Use the rally as a chance to get level and reduce portfolio risk. Rent the rally don't own it.**

"There is something seriously wrong with the prevailing ideas of monetary policy, when central banks protect their credibility by driving economies into recession"

– Sanna Marin, Prime Minister of Finland

Most World stock markets rallied last month. This has deceived many into believing that the worst is over and a soft landing for the economy and a new bull market will follow soon. We think this view is incorrect and will lead to massive losses.

The rally was a bear market rally. We predicted in our last issue that this would happen. If you had to choose two months when rallies occur, then they would be November and December. It is normal for there to be a seasonal low in October and from that depressed state a rally occurs. It should continue through December on low Christmas volume. Then **early in the New Year the bear will resume its path.** This is a high probability bet based on historical data.

Next year, **there will be a global recession and unemployment will rise**. Stock markets will fall back and make new lows in this cycle. **The message for now is to rent the rally and not own it.** Use it to reduce risk and get liquid again, ready for a better buying chance late next year.

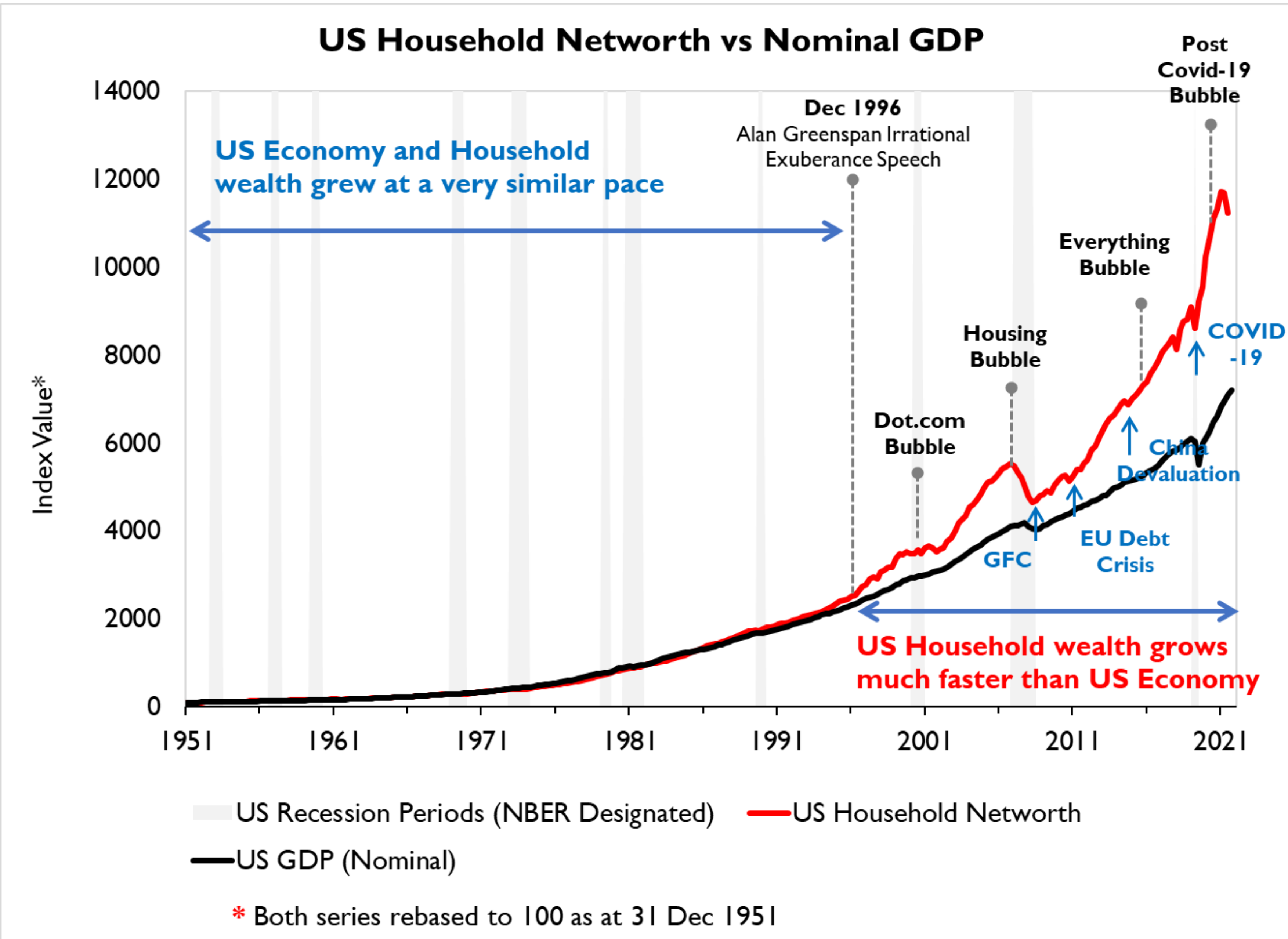
One of the most significant long-term drivers of the economy and the stock market is demographics. This force plays out over multiple years but is very powerful. We mention this because the demographic position has completely reversed in the West. **Just after World War II, there was an enormous "Baby Boom"** in the West which caused the population to grow significantly. For years there were a few old and young people – both economically dependent groups. Over this period, population dynamics were dominated by the huge "Boomers". As these set of people reached working age **they drove a huge consumer boom, but this demand did not cause runaway inflation**. It would have done so if all the manufacturing had been done at home. Instead, China and Eastern Europe both offered to do the work much more cheaply. These two areas were exporting deflation, benefitting the baby boomers.

They were extremely cosseted. Their parents fought the war and had to rebuild their economies, but **the boomers walked in peaceful times supplied by an endless barrage of cheap products**. **As they began to accumulate assets** – real estate, businesses, cash, art, stocks in their pensions and other investments – **their networth began to soar**. At first, it grew at roughly the same pace as the economy (Figure 1). Whenever there was a large economic setback or the risk of a bubble popping, the then-Fed-Governor Alan Greenspan forcefully lowered interest rates to prop up the economy and financial markets. With every "Greenspan put", as it was referred to at the time, **the growth rate of household networth began to decouple aggressively from the growth rate of the economy** (Figure 1). It didn't matter for the Fed that this was unsustainable in the long run. What mattered was preventing a significant decline in household networth. It was fully understood that as long as households continued to see their networth increasing, the propensity to consume would remain high and keep "prosperity" on track.

There were some losers over this period, and they were the wage earners in the rich western countries. Their jobs were taken by the cheaper Asian and European workers. If you owned assets you got to be rich, but if you worked for a salary, you missed out in the West. The inequality gap between the rich and poor became very large. **When the housing bubble burst in 2008, it seemed like the game was finally drawing to a close**. **Household networth began to fall rapidly** and appeared to be catching up with economic reality. But **before long, the Fed had short-circuited the decline using ZIRP and Quantitative Easing**, rebuilding US household networth and relaunching its stratospheric climb.

The coronavirus pandemic, however, **was the game changer**. **It caused a surge in global inflation and forced the Fed's – and other central bankers – hand**. Having initially denied inflation was a problem, it became abundantly clear how woefully behind the curve they were, coercing them to start tightening monetary policy. Now, **they are aggressively and deliberately hiking interest rates to play catch-up on inflation.** Whilst they may eventually end up crushing inflation, they will also break the economy in the process. Unfortunately, there is no free lunch – especially in economics.

► **Figure 1: The economic policies of the Federal Reserve have caused US Household Networth to outstrip the growth rate of the economy benefitting asset owners over salaried workers**



Source: ByteTree, Refinitiv Datastream

This scenario has driven stock markets for the last four decades – essentially, a working lifetime. **Now, the baby boomers have gotten old, no longer work much and have become dependent.** Across the total population there are now many old-age dependents, some very young ones, and only a small group in the middle working to pay for it all. It is also true that the great China boom is over. They have prospered and get paid well. The same applies to the Eastern Europeans. They cannot export deflation anymore.

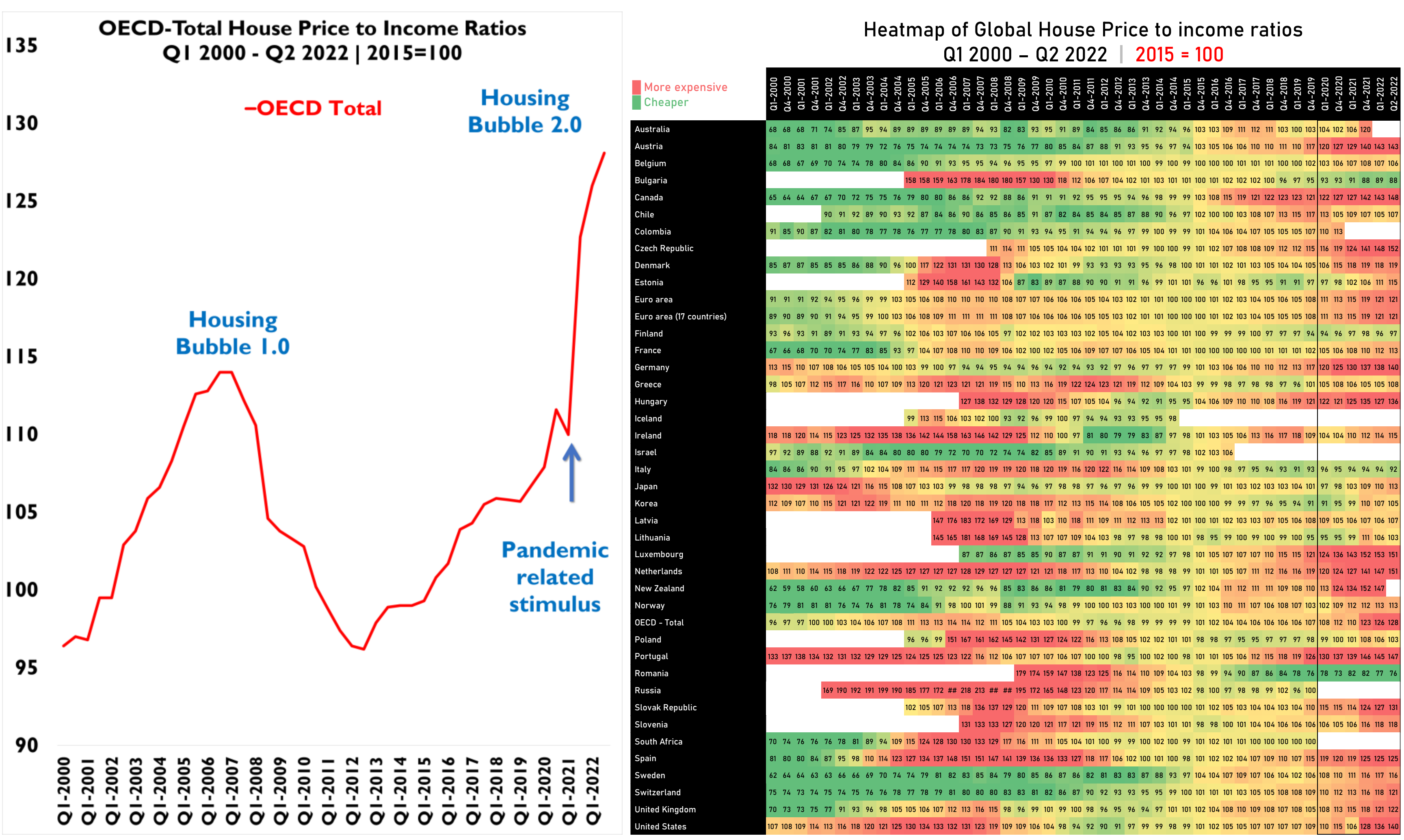
If we now want work done in the western world, then the number of working-age population available to do it is a small number. Their wages, which have not risen in real terms for decades, will now rise. **This brings in a new era when wages will grow, and this is inflationary**. This trend cannot be cancelled by a new player to stand in where China once stood. Aside from China, the only giant populations are in India and Africa - both with around 1.3 billion people. **India is already doing great** and is the strongest equity market in the AAA ranking table, **but it is not going to take over from China in manufacturing.** Africa is nearly the same population as India, but it is divided between 54 countries spread over an area that is ten times the size of India. It is far too early to make a difference.

There has been a Great Reversal in Demographics. This is set out in a book by Charles Goodheart and Moraj Pradhan. They believe that **this new trend to structural inflation will last for years** – thirty to forty years on the way up. So our future, for now, is on the way down. It is, however, a very slow-moving trend. Many western workers want higher wages now, but for a time they will be told they cannot be afforded. We are at the turning point now but the fight to hold inflation down will last a while. **There is a giant correction period to go through now.**

Over the last decade, **one of the assets that has been the largest beneficiaries of central banks profligate policies is the global housing market.** The boom has been one of the strongest on record aided by ultra-low interest rates, stimulus cash and mania buying. Now that interest rates are rising and households face mounting financial pressures, **the tide has turned. A broad-based slowdown is underway** with house prices having already fallen in more than half of the advanced economies, and many more likely to join next year. According to calculations by the OECD, housing affordability across the OECD countries is the worst it's been in over two decades (Figure 2 - line chart). This measure is calculated by dividing the nominal house price index by the nominal disposable income-per-head.

Across the OECD as a whole, housing affordability is 12% worse now than during the housing bubble peak in 2007 (Figure 2 – line chart) according to this metric. The picture across individual OECD countries is very similar. The heatmap shown below tabulates the same affordability metric for the OECD countries, colour-coded so that red denotes worsening affordability and green means the converse. As can be seen, **save for a few countries, the situation across the World is pretty much the same**: house prices have become very unaffordable, making a reset necessary. Simply put, **if wages don't rise then house prices will have to fall.**

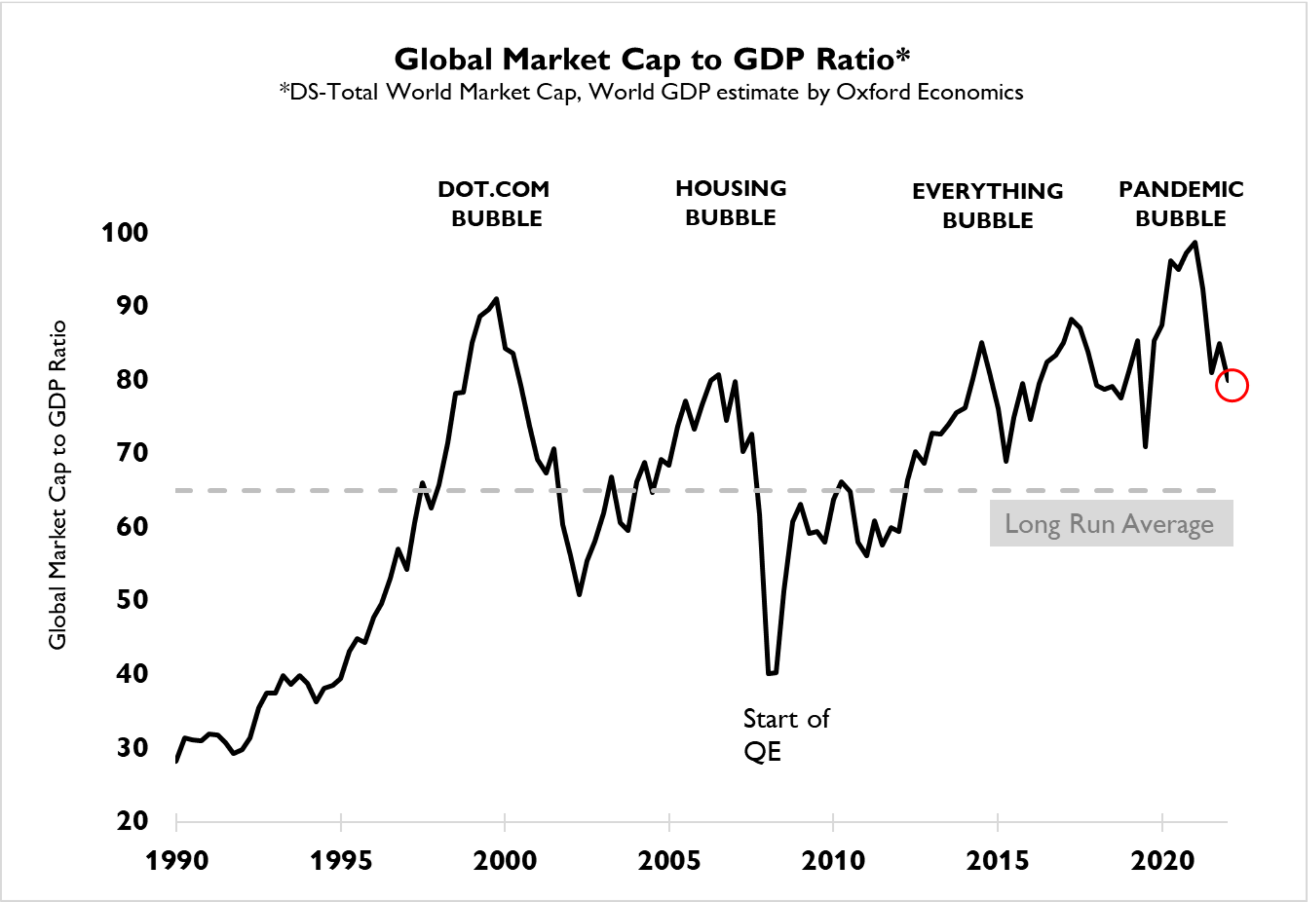
► Figure 2: Across the OECD, house price affordability is worse now than it was during the bubble peak in 2007



Source: ByteTree, OECD

Stock markets have fallen a lot this year and are in a bear market**. Whilst they are not as expensive as they had been** at the top of the market, **in aggregate they are also not cheap.** The chart below (Figure 3) plots the Global Market Cap to GDP Ratio – a simple but very useful method of valuing the global stock market. This valuation metric, also referred to as the "Buffett Indicator" after famed investor Warren Buffett lauded it nearly [two decades ago](), tells us that global stocks are still not cheap when compared with global economic output. The indicator stands at 80% compared with the long run average of 60% (Figure 3). In other words, **global equities still have a long way to fall before they are considered "cheap" again.**

► Figure 3: **According to the Buffett Indicator, the Global Stock Market is cheaper than during the pandemic bubble peak but still has a long way to fall before it can be considered cheap again**

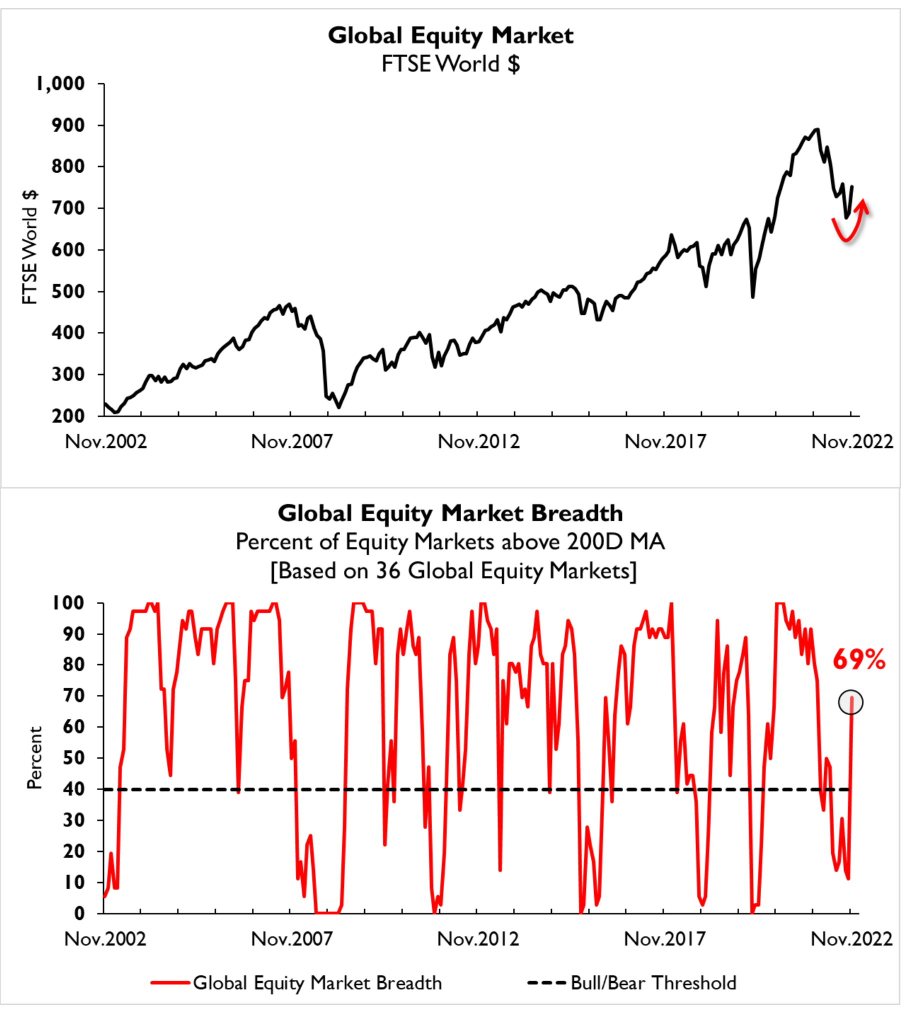


Source: ByteTree, Refinitiv Datastream

That is the long-term outlook, however **in the short-term global stock markets have been rallying as is normal for this time of the year.** When we compare the performance of global stock markets year-to-date and since mid-October (Figure 4b), it is clear that markets are rallying in the context of a downtrend. Whilst nearly every single stock market is in the black over the last month, after the rally nearly all markets are still in the red. In other words, **it is a seasonal rally in a bear trend.** However, what comes as a surprise is that following the rally **nearly 70% of equity markets are now trading above their respective 200-day moving averages** (Figure 4a). This is significant and begs the question: **are we at the start of a new bull market? We do not think so and will explain why shortly.**

► **Figure 4: Global stock markets have rallied strongly since mid-October with 70% of markets trading above their respective 200-day moving averages but nearly all still in the red year-to-date**

(a)



(b)

Majority have rallied since Oct

Nearly all in the red YTD

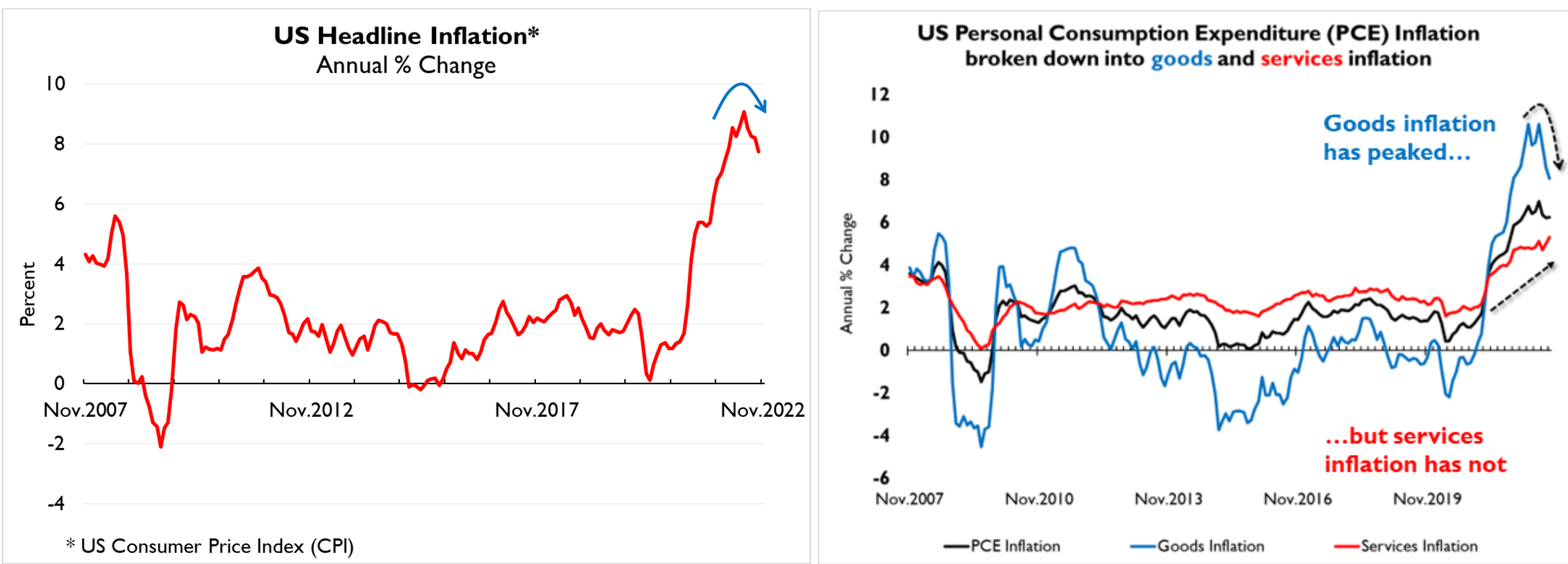
Equity Market	Trend: Above 200D Moving Average	Performance: % Chg ($) 15 Oct 2022 to 25 Nov	Performance: % Chg ($) YTD to 25 Nov 2022
World	✘	14.0	-16.3
United States	✘	12.4	-15.5
Japan	✔	14.7	-20.4
United Kingdom	✔	17.4	-9.4
China	✘	-2.0	1.2
Germany	✔	24.8	-16.2
India	✔	8.5	-2.7
Australia	✔	16.0	-11.0
Switzerland	✘	14.8	-16.3
Brazil	✔	-0.6	11.9
France	✔	20.7	-14.2
Italy	✔	26.1	-17.2
Hong Kong	✘	7.1	-24.6
Canada	✔	15.5	-9.2
South Korea	✘	18.7	-26.6
Spain	✔	20.9	-11.5
Taiwan	✘	15.8	-27.6
Sweden	✔	22.3	-24.2
Netherlands	✔	22.3	-17.1
Singapore	✔	10.9	2.1
South Africa	✔	21.8	-6.9
Mexico	✔	18.4	3.1
Malaysia	✘	13.6	-11.2
Belgium	✘	16.6	-21.4
Russian Federation	✔	15.7	-28.2
Thailand	✔	10.8	-8.5
Philippines	✘	14.8	-17.6
Indonesia	✔	2.3	-2.1
Norway	✔	16.1	-5.2
Turkey	✔	33.7	86.4
Poland	✔	31.6	-27.7
Ireland	✔	19.6	-20.3
New Zealand	✘	16.8	-26.9
Portugal	✔	17.5	-3.4
Greece	✔	17.9	-5.8
Denmark	✔	16.4	-17.1
Average	-	16.2	-10.5

Source: ByteTree, Refinitiv Datastream

One of the main catalysts for the rally was the October reading of US Consumer prices being better than expected; headline US inflation fell from 9.1% in June to 7.8% in October (Figure 5a). The encouraging figures have raised hopes amongst investors that inflation has peaked, and the Fed may not need to tighten as aggressively as before. Whilst the figures are reassuring, the truth is a little more nuanced. When gauging the outlook for US inflation, **the Fed prefers to use the [PCE Price Index]** as it more accurately reflects consumers' spending habits. It switched over to this index a decade ago from the CPI. **The PCE Price index is comprised of both goods and services prices**. Whilst **the goods component has topped out, services have not** (Figure 5b) – and this matters to the Fed.

► **Figure 5: Whilst the fall in October's reading of US Headline Consumer Prices is encouraging, service inflation continues to rise making it unlikely the Fed will stop hiking interest rates**

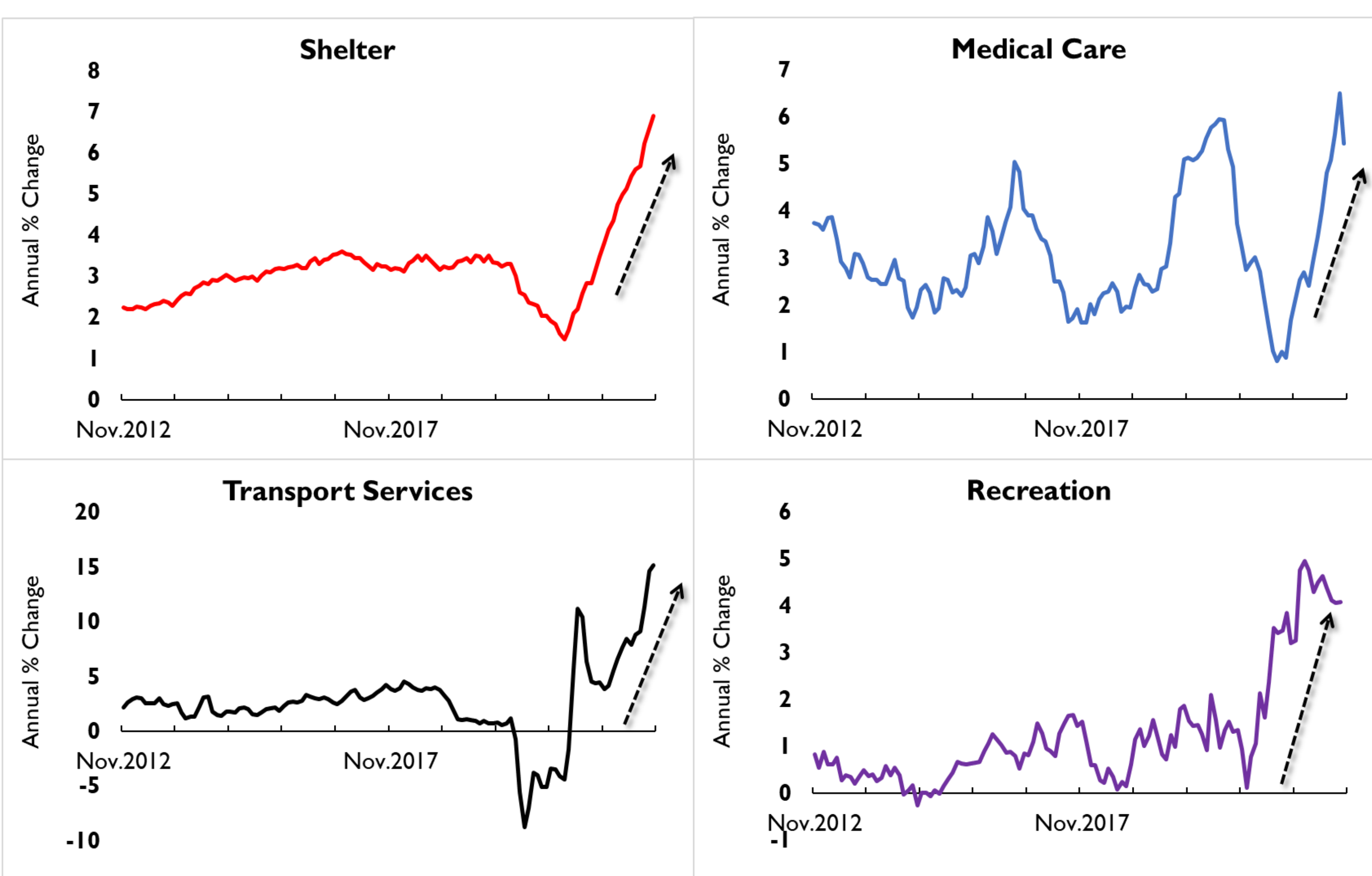
(a) **(b)**



Source: ByteTree, Refinitiv Datastream

Services such as housing, healthcare, recreation etc. represent a much larger part of the US economy than goods, accounting for nearly 67% of the economy. **Prices for services remain persistently high and will take longer to come down** (Figure 6). Inflation in services generally reflects rising wages which are in turn passed on to consumers in the form of higher prices. This makes it a key concern amongst Fed officials who are worried about the stickiness of inflation. The bottom line is that **the Fed will not stop hiking interest rates until services inflation is under control.**

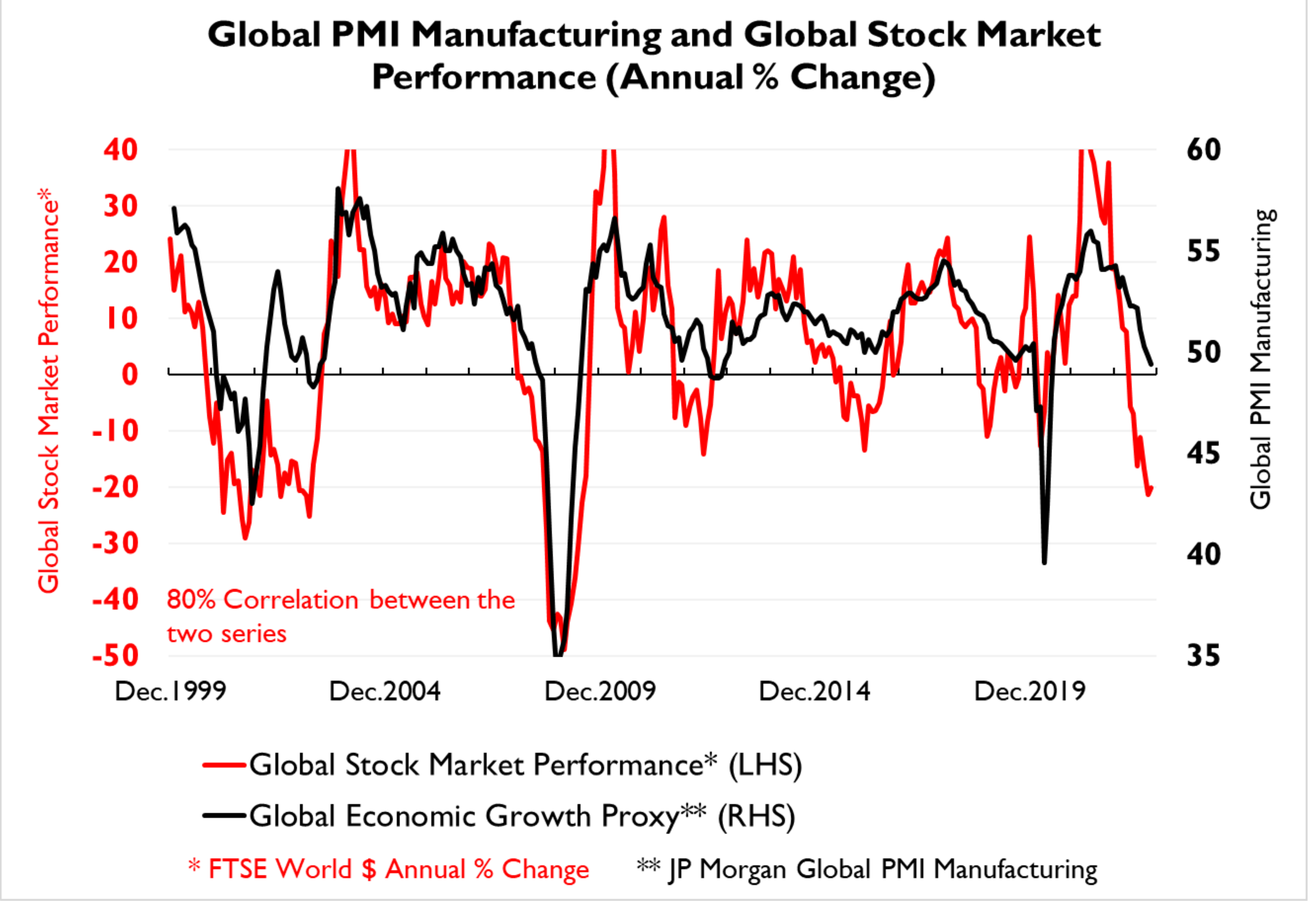
► **Figure 6: Service-related costs are likely to keep rising at an accelerated pace and keep inflation at elevated levels into next year**



Source: ByteTree, Refinitiv Datastream

Whilst cooler inflation data helps the stock market to rally in the short-term, what is really needed to turn the fortunes of the market around is improving economic growth momentum. The chart below shows global stock market performance since the turn of the century, overlaid with an oft-used proxy for Global Economic growth momentum. As can be seen, the two series have been tied-to-the-hip over this period, sharing a statistically significant 80% correlation (Figure 7). This is by no means a surprise as global stock markets are discounting mechanisms of future economic growth prospects over the long term. **The vital message here then is that until global economic growth momentum picks up, we cannot count on a decisive reversal in the market trend.**

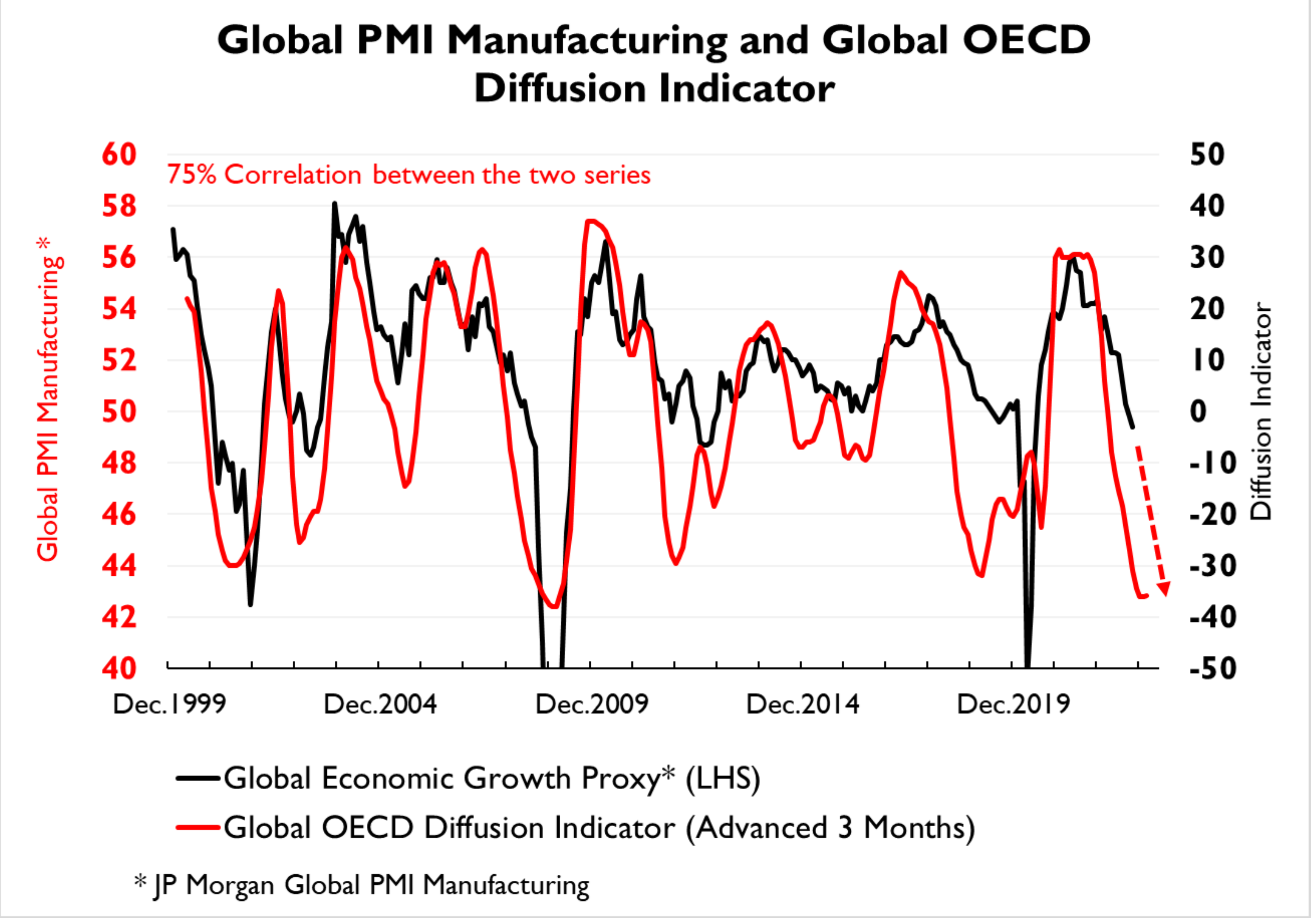
► Figure 7: Whilst cooler inflation data has been a catalyst for a short-term market rally, a more significant driver of the market's longer-term performance is economic growth momentum making a stock market reversal unlikely until economic growth momentum picks up



Source: ByteTree, Refinitiv Datastream

There are **some indicators which have a good track record of predicting where this trend is headed in the near term. One such indicator is the diffusion of OECD Leading indicators.** It is calculated as the proportion of indicators which are increasing in any given month and has historically served as a reliable gauge for the direction of global economic growth momentum over the next quarter (Figure 8). **The message from this measure is that in the coming months risks to economic growth are to the downside**. Unfortunately, **equity markets have not fully priced in the risks** and are vulnerable to falling significantly in the year ahead.

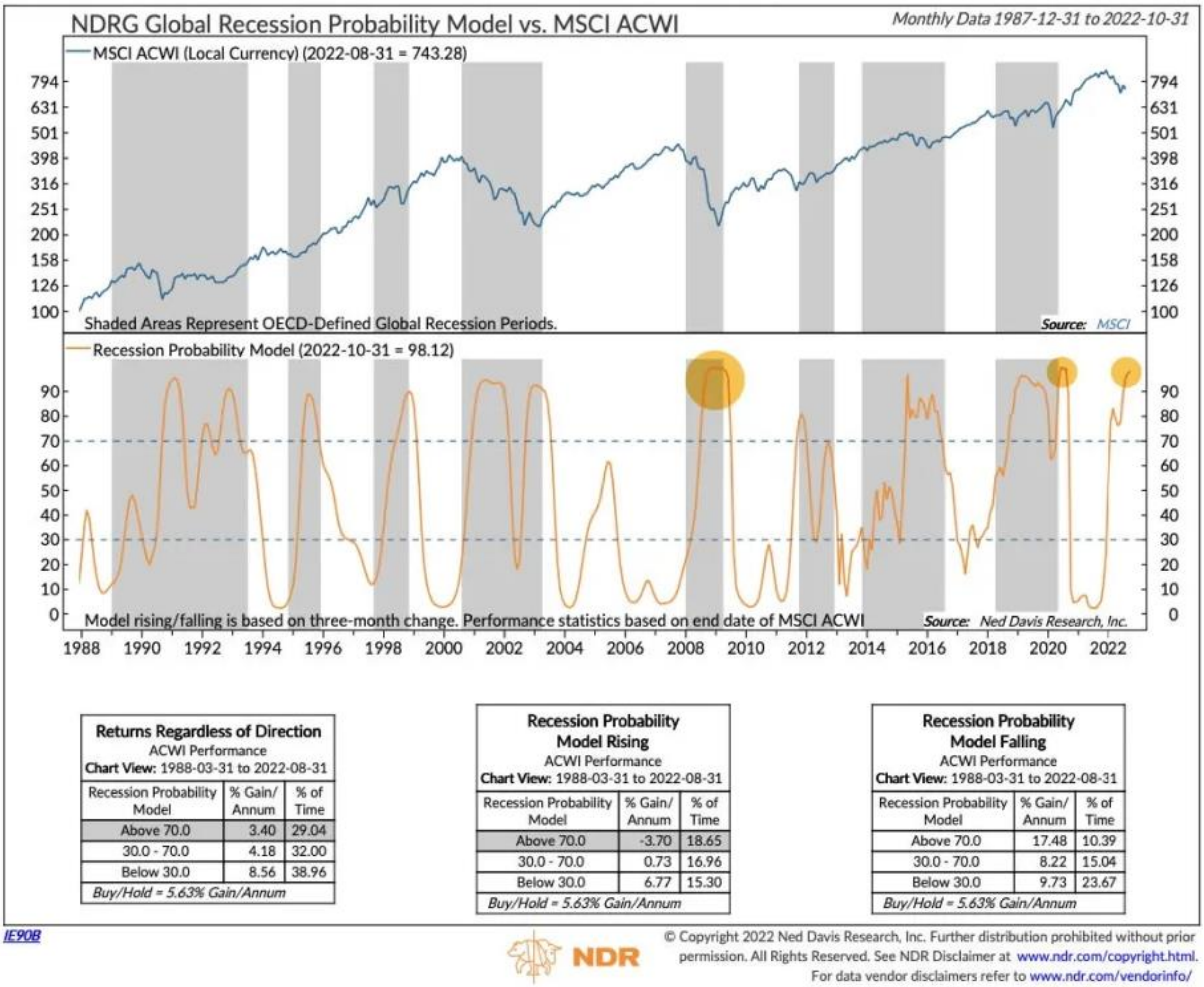
► **Figure 8: Indicators which have historically had a good track record at predicting the direction of economic growth momentum suggest more economic pain lies ahead**



Source: ByteTree, Refinitiv Datastream

Ned Davis Research has gone a step further. Using the same set of OECD Composite Leading Indicators (CLIs) used to calculate the diffusion indicator referenced earlier, they have quantified the probability of a global recession by incorporating both the CLI level and trend from each of the 35 countries. According to the output of their model, a score above 70% indicates a high recession risk whilst a score below 30% suggests the opposite. The current reading is 98% (Figure 9). To put that number into perspective, consider that **the last two times we had this signal was in 2020 and 2008 to 2009. The signal does not get worse than this.** Markets have priced in the risk of a moderate slowdown but remain oblivious to the threat of a severe global recession.

► Figure 9: The Ned Davis Research Global Recession Probability Model predicts a 98% chance of a global recession in the coming months



Returns Regardless of Direction
ACWI Performance
Chart View: 1988-03-31 to 2022-08-31

Recession Probability Model	% Gain/ Annum	% of Time
Above 70.0	3.40	29.04
30.0 - 70.0	4.18	32.00
Below 30.0	8.56	38.96

Buy/Hold = 5.63% Gain/Annum

Recession Probability Model Rising
ACWI Performance
Chart View: 1988-03-31 to 2022-08-31

Recession Probability Model	% Gain/ Annum	% of Time
Above 70.0	-3.70	18.65
30.0 - 70.0	0.73	16.96
Below 30.0	6.77	15.30

Buy/Hold = 5.63% Gain/Annum

Recession Probability Model Falling
ACWI Performance
Chart View: 1988-03-31 to 2022-08-31

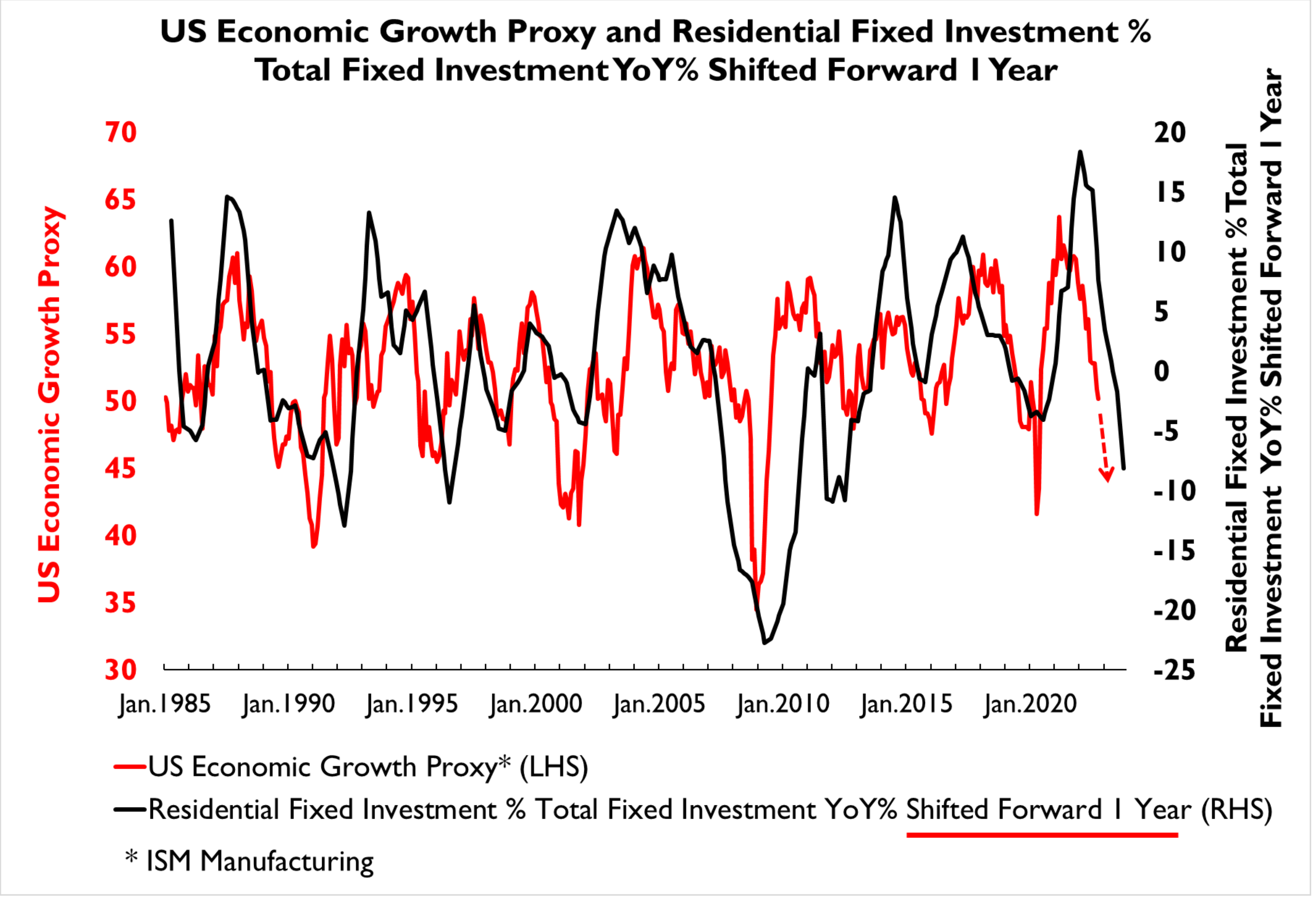
Recession Probability Model	% Gain/ Annum	% of Time
Above 70.0	17.48	10.39
30.0 - 70.0	8.22	15.04
Below 30.0	9.73	23.67

Buy/Hold = 5.63% Gain/Annum

Source: ByteTree, Ned Davis Research

One of the reasons why we strongly believe there is more pain to come is because we are only 7 months into the rate hiking cycle. As we have discussed in the past, monetary policy works with a lag of around 15 months. This means, the full impact of the rate hikes witnessed this year will not take a toll on the economy until next year. However, some interest rate sensitive sectors of the economy have already started to crack and the US housing market is one of them. According to the [Bank of International Settlements](), **residential investment has "consistently anticipated economic downturns"** despite only being a small part of the economy. The extent of **the decline in this series shows the Fed is piloting the economy to a hard landing next year** (Figure 10).

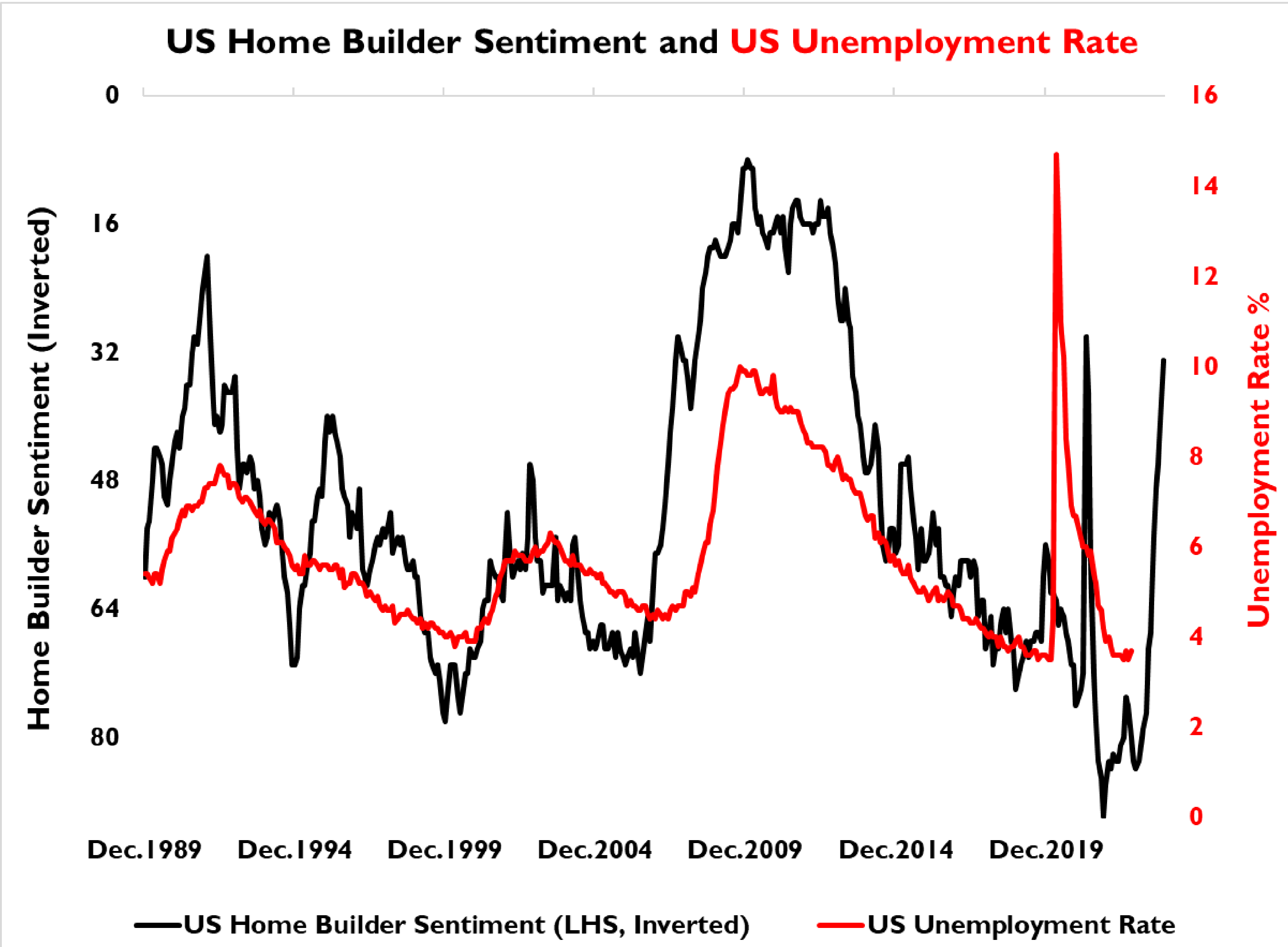
► **Figure 10: The extent of the decline of US residential investment suggests that the Federal reserve is piloting the US economy towards a relatively hard landing in the year ahead**



Source: ByteTree, Piper Sandler, Refinitiv Datastream

The state of the US labour market is one of the most important signals of a recession and has so far remained fairly robust. Despite the Fed's best efforts to cool down the "overheated" labour market, US job growth rose at an unexpectedly rapid pace in October defying expectations for a larger slowdown. However, there are signs which suggest that job seekers are likely to face tougher times in the year ahead. Taking into account the historical relationship between the US Housing and the US Labour Market, the deterioration of the former suggests that the **US Unemployment rate could spike to over 5% by the end of next year from its current 3.5% level** (Figure 11).

► Figure 11: **Whilst the US Labour market has remained fairly robust so far, the deterioration in the US Housing market suggests US unemployment could spike to 5% by the end of next year**

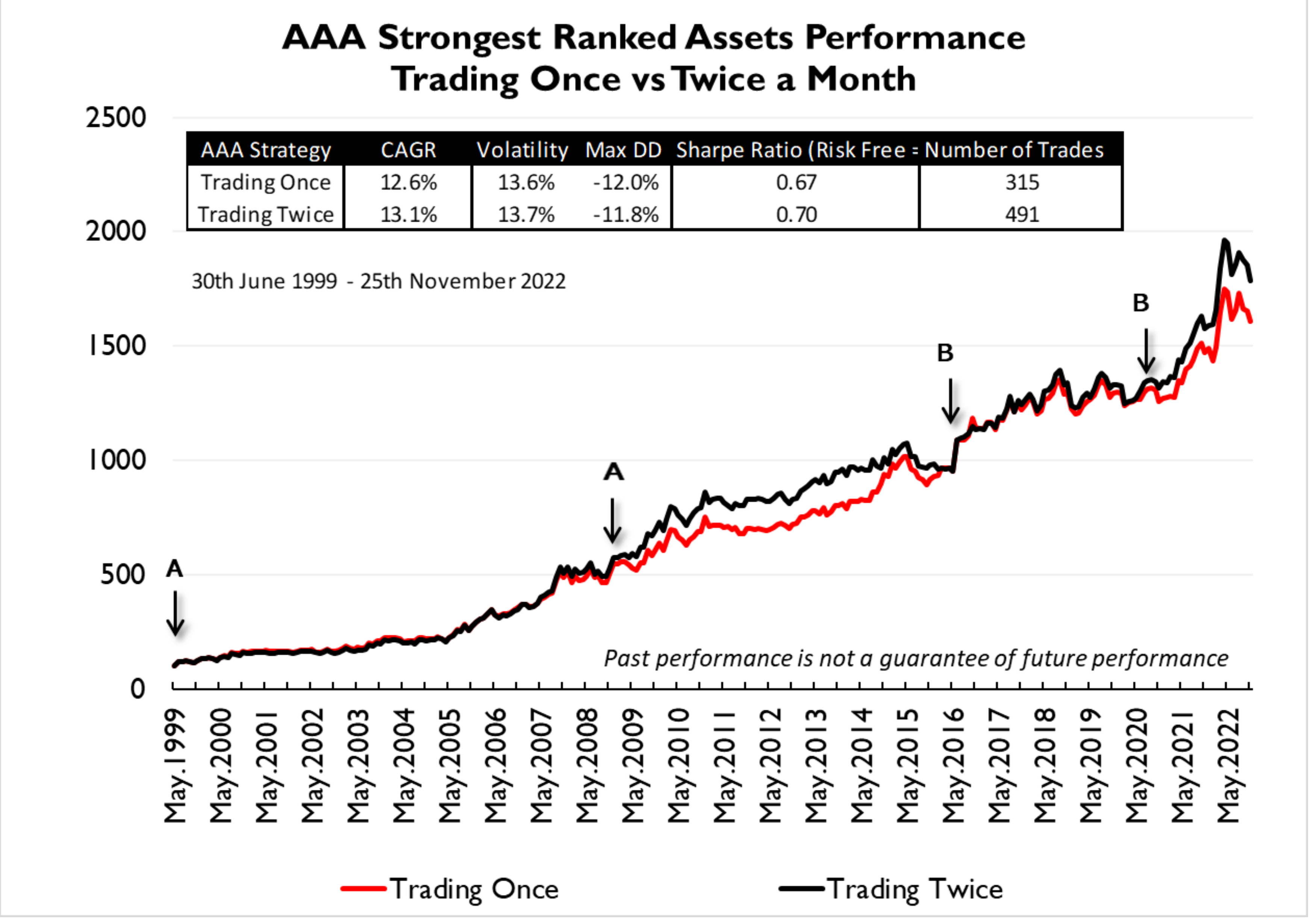


Source: ByteTree, Piper Sandler, Refinitiv Datastream

A reader asked us to evaluate if running the AAA model twice a month outperforms running it only monthly – as we currently do. There have been times when market volatility picks up significantly and some readers feel that dealing more frequently may be a better strategy. **The back test has now been done leaving us to conclude that we are better off as we are.** The test shows that the two systems were neck-and-neck with each other between the period A to A (Figure 12). They then departed on the way to B. Over this period the more active strategy did better. After some time, they converged again.

So, **the simple answer is that the more active dealing does marginally better but not all the time.** The performance of the two systems tends to converge in the long run. Secondly, **the amount of extra return is very small indeed for the effort and dealing costs.** One averages at 12.6%, the other at 13.1%. The volatility of the two systems is almost identical. The maximum drawdown is 12% vs 11.8%. The real difference is the number of trades which ramps up from 300 to 500. When you allow for dealing expenses this would decimate your advantage. Our solution is to keep running the model once a month. **Most of the time we will only need to deal once a month.** We will keep expenses down this way and will not lose out. However, **if in future there is an event of great volatility like the 1987 crash, then we can run the model again and reveal any new changes**. These events would, by definition, be rare.

► **Figure 12: Comparing the performance difference of running the AAA Model once a month and twice a month**



AAA Strategy	CAGR	Volatility	Max DD	Sharpe Ratio (Risk Free =	Number of Trades
Trading Once	12.6%	13.6%	-12.0%	0.67	315
Trading Twice	13.1%	13.7%	-11.8%	0.70	491

Source: ByteTree, Refinitiv Datastream

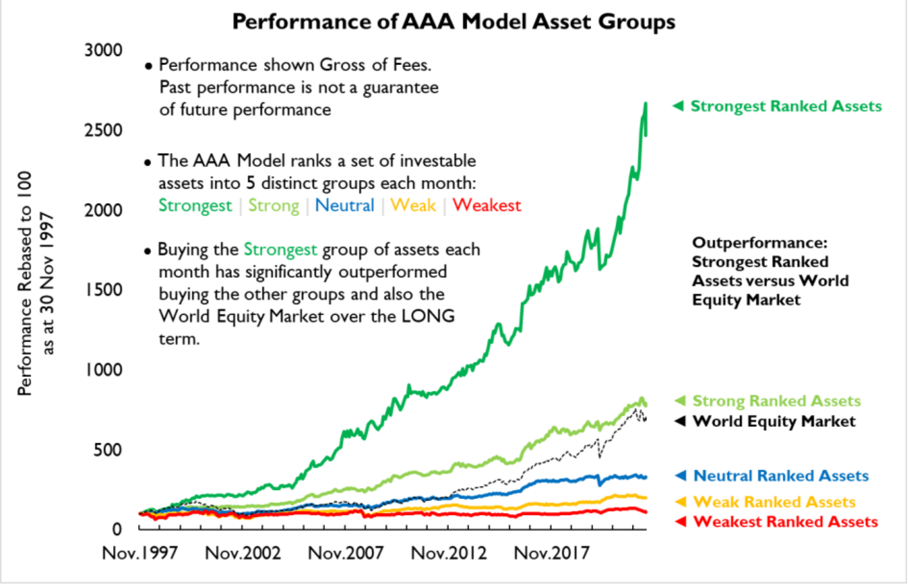
The bottom line is that **we are having an expected seasonal rally, within a bear market. The bear market will resume next year and a recession has a high chance of following.** We want to **use the rally as a chance to reduce risk and get liquid again.** We notice that **India is the strongest equity market**. Stock markets are often described by a quick mnemonic. Jim O'Neil came up with "BRIC" to describe the key markets of Brazil, Russia, India and China. Once he had retired to the House of Lords, the initials were changed to "Bloody Ridiculous Investment Concept". However, the idea stuck and we moved on to "FAANG". These high-tech stocks then performed well. Their time is now over, and we are moving on again. The new label is called FAANG mark-two. This time the letters stand for Fuel, Agriculture, Artificial Intelligence, Nuclear, and Gold. It is certain we will find more marketing along these lines in future. The list fits tolerably well with some of the themes thrown up by the AAA model. **Stick with the model it is working well.**

► 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

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

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

Appendix

AAA Model Rankings GBP Portfolio with representative ETF Tickers

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

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

Source: ByteTree, Refinitiv Datastream

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