

Portfolio and Market Review

2nd Quarter 2022

Market Commentary

By Daniel Rawlinson

It Will Be Romantic

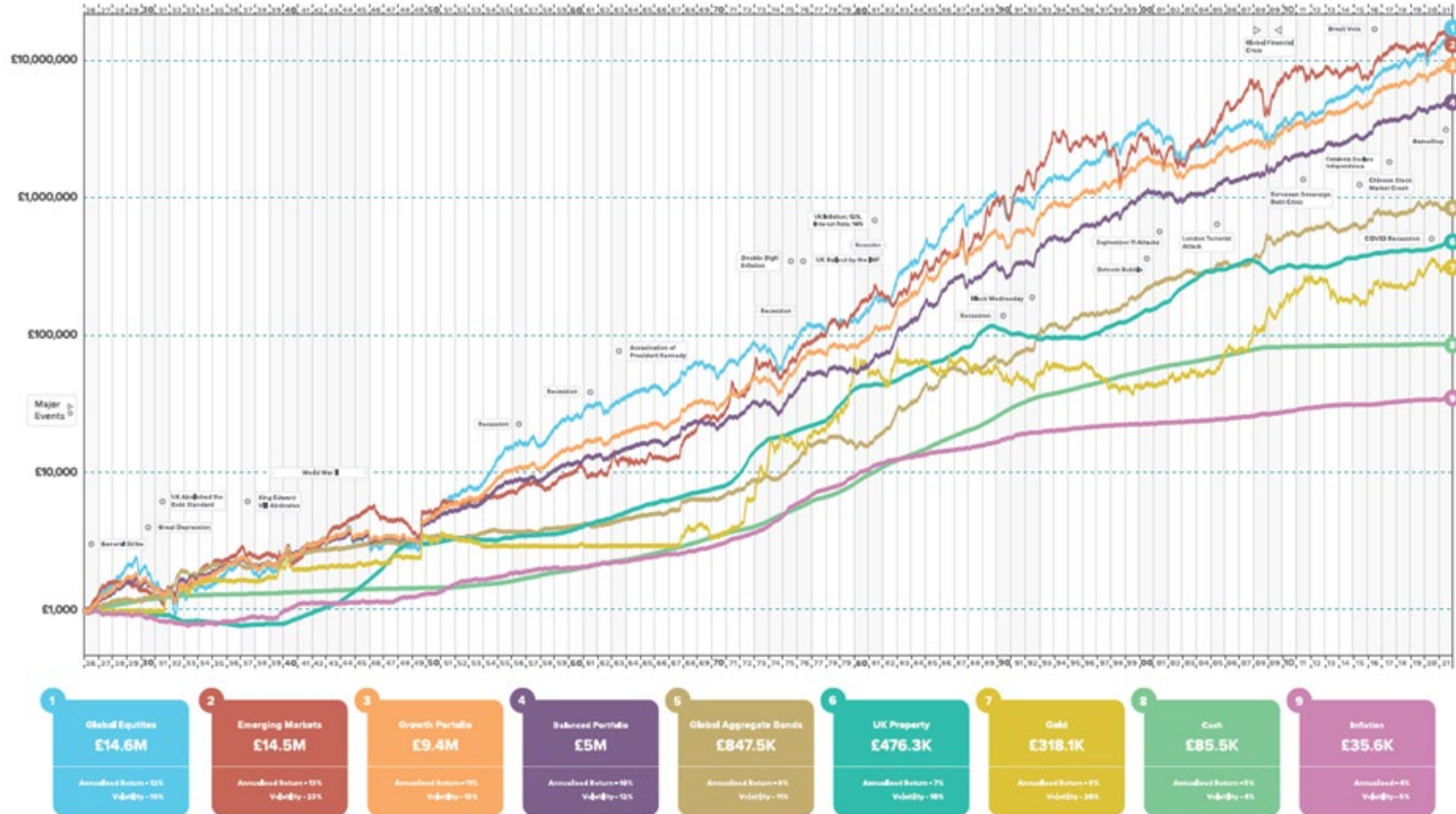
A few years back Mrs R and I (though more Mrs R, if truth be told) thought it would be an excellent idea to buy a house that needed a little work. By little, I mean, lots. Mrs R, having watched a few episodes of Grand Designs proclaimed, “it’s only two weeks’ work, it will be romantic”. Suffice to say, we’re still not finished. Throw in some comical events, like Mrs R’s foot popping through the newly plastered ceiling and the odd rogue trader and we’re 90% there. But if the “hell house” as our home is now affectionately called has taught us anything, it’s the importance of perseverance.

Perseverance is something that investors have needed in abundance, realistically since early 2020. Investors have been under siege from headwind after headwind. First, the pandemic and national lockdowns saw the global economy grind to a halt, which unsurprisingly threw markets into their sharpest decline since the 1930s. When lockdowns ended and economies began to reopen, a quick return to normality was hampered by supply chain issues which contributed to rising inflation. Finally, as 2022 began, Russia invaded Ukraine. Markets unsurprisingly dropped but soon bounced back. The subsequent response from the West has been more challenging for investors as sanctions, particularly on Russian energy products, contributed to levels of inflation across the globe not seen for decades.

It’s actually during periods such as these, that disciplined investors are rewarded over the long term for persevering during the short-term. Undisciplined investors will lose their nerve, sell out and hold cash until markets start to recover. This is quite possibly the worst course of action. Selling low and buying high is not a sound investment strategy and holding cash will only result in the investor’s real wealth being eroded by inflation.

What should an investor do? The first thing is to take a step back and review the long-term picture. Two years is a short amount of time in financial markets. Stepping back and reviewing the data should provide some reassurance that what seems like normality now, really isn’t. If we look at market data from 1926 to 2021 it’s clear that the trend is forever upwards. The following chart shows that, despite numerous market disruptions, ranging from world wars to deep recessions, markets have historically, always recovered and reached even greater heights.

timeline Growth of Wealth



1 This chart can be found in our "Historical Markets Client Pack 2022", available on request.

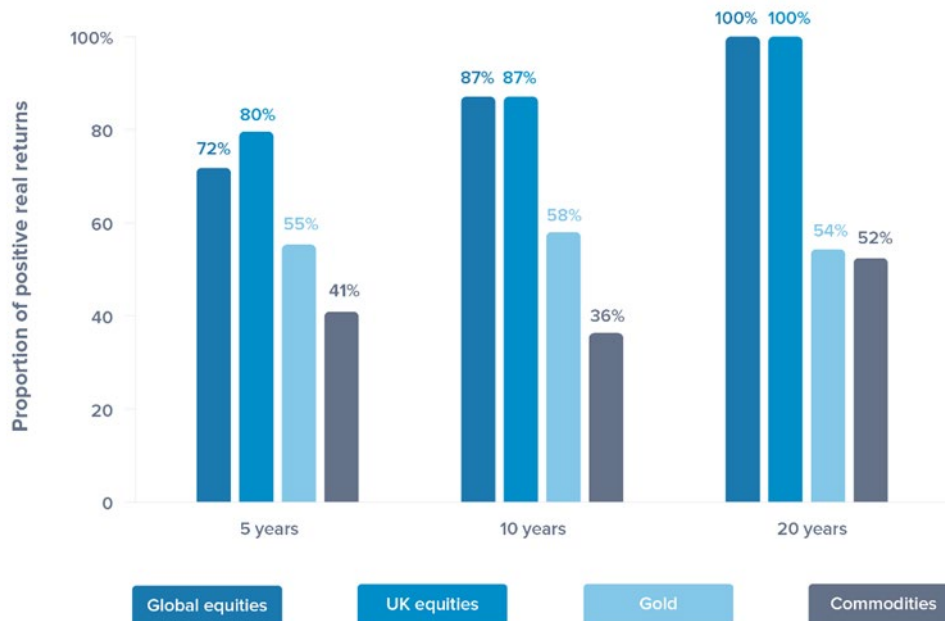
All That Glitters Is Not Gold

One asset class that has performed relatively well in the short term compared to bonds and equities has been commodities. Since the beginning of the year, while global equities and global bonds have returned -10.8% and -4% respectively, global commodities have returned 32%.²

Commodity prices are essentially driven by the law of supply and demand. For example, if supply drops due to sanctions on Russian oil, but demand remains constant or increases, it will result in price increases. This is because commodity prices tend to rise during periods of inflation, and investors have traditionally seen commodities as protection, or as a “hedge” against inflation.

Are these investors, right? Yes and no. Over short-term horizons, equities have not historically been a good inflation hedge. However, where equities come into their own, as so often the case, is over the long term. If investors want to give themselves the best chance of growing their wealth, in excess of inflation, holding equities over the long-term is the best strategy. This is reflected in the chart below. Over 5-, 10- and 20-year periods, the chance of achieving a positive real return is far higher by investing in equities, rather than commodities.

Global equities have been most likely to beat inflation in the long term

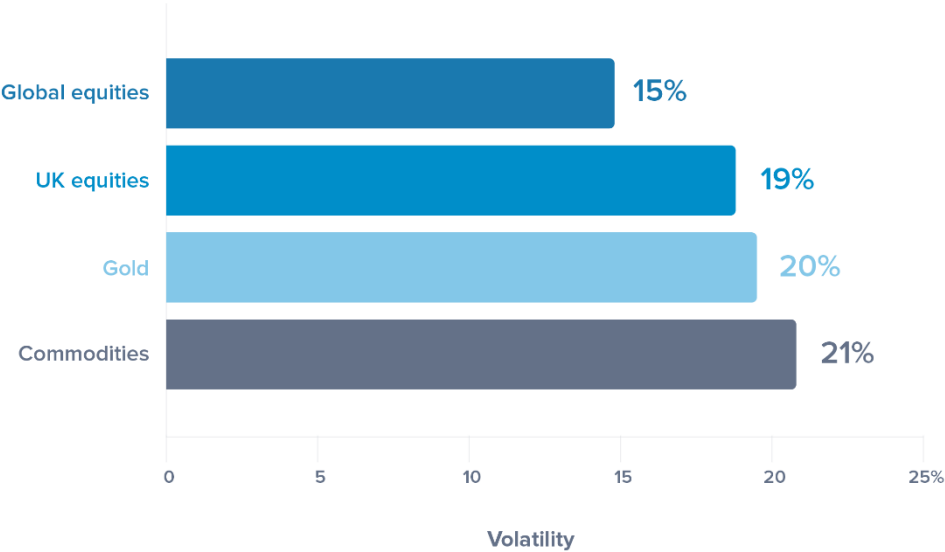


Source: Vanguard (2021)³

² Global Equity: FTSE Global All Cap; Global Bond: Bloomberg Global Aggregate; Commodities: Bloomberg Commodity, 31/12/21 – 30/06/22.

³ The chart shows the proportion of real five-, 10- and 20-year returns that have been above 0%. The sample period for the monthly data is 31 January 1975 to 31 October 2021. Volatility is calculated over monthly returns of the entire sample period. Sources: Vanguard calculations in GBP, based on data from Bloomberg and the OECD.

Volatility of returns for different asset classes

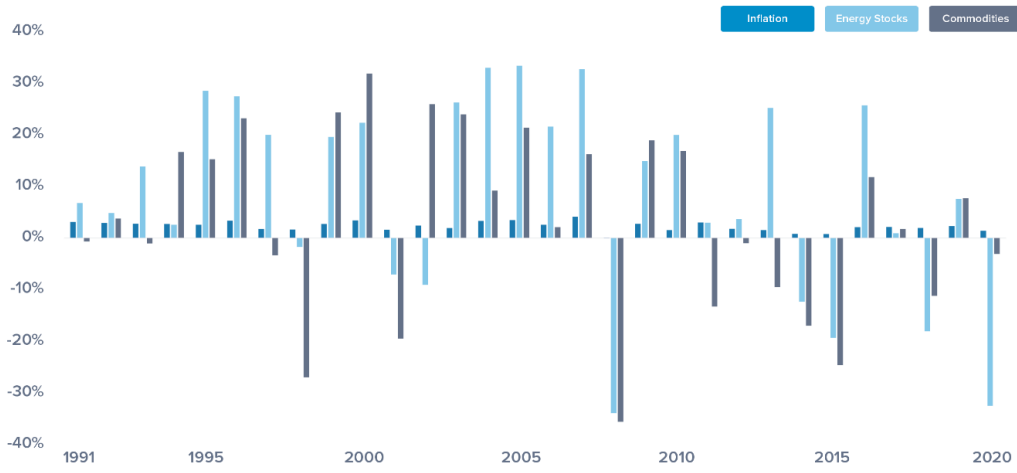


Vanguard (2022)

It’s not just the long term returns of commodities compared to equities that make them less attractive as an inflation hedge. It’s also the volatility of returns. This can be seen in the chart above; commodities had the greatest volatility of returns over the 46-year sample period.

While nominal returns of energy stocks and commodities are positively and reliably related to both expected and unexpected inflation, both assets demonstrate levels of volatility that make them an ineffective inflation hedge. This can be seen in the chart below.

Annual US inflation along with nominal returns to energy stocks and commodities, 1991–2020



Source: Dimensional Fund Advisors (2022)

Why are commodities so volatile, compared to other assets? Well commodity prices are driven primarily by supply and demand factors, which can and do change frequently by considerable amounts. Some commodities have shown more stability than others, such as gold, but even this “safe” commodity has experienced periods of relatively high volatility.



Source: Bakas and Triantafyllou (2020)

Valuing commodities can also be challenging. Commodities are classed as “alternative” investments. Unlike “financial” or “traditional” assets such as bonds and equity, commodities are physical assets that produce no cashflows and may incur storage and transportation costs. This makes determining the fair value of commodities difficult. In simple terms, the standard approach to valuing financial assets is to forecast all expected cashflows, be it interest payments or dividends. For each expected cash flow, we apply a “discount rate” based on the risk of the investment and increase the impact of this discount rate as cashflows extend further into the future. This gives us the current value of the investment.

Instead, the current, or “spot” price of a commodity can be viewed as the discounted selling price of the commodity at some time in the future. Storage costs for commodities often result in forward prices that become higher, the longer the time until the commodity is due to be sold.

The simplest way an investor can gain exposure to commodities is to buy and hold the commodity themselves. This will not always be practical. Although some commodities are easy to buy and store, for example, gold (albeit in small quantities), buying and storing gas or livestock would be difficult and expensive for most investors. Also, the investor would likely find it difficult to hold a diversified portfolio of commodities.

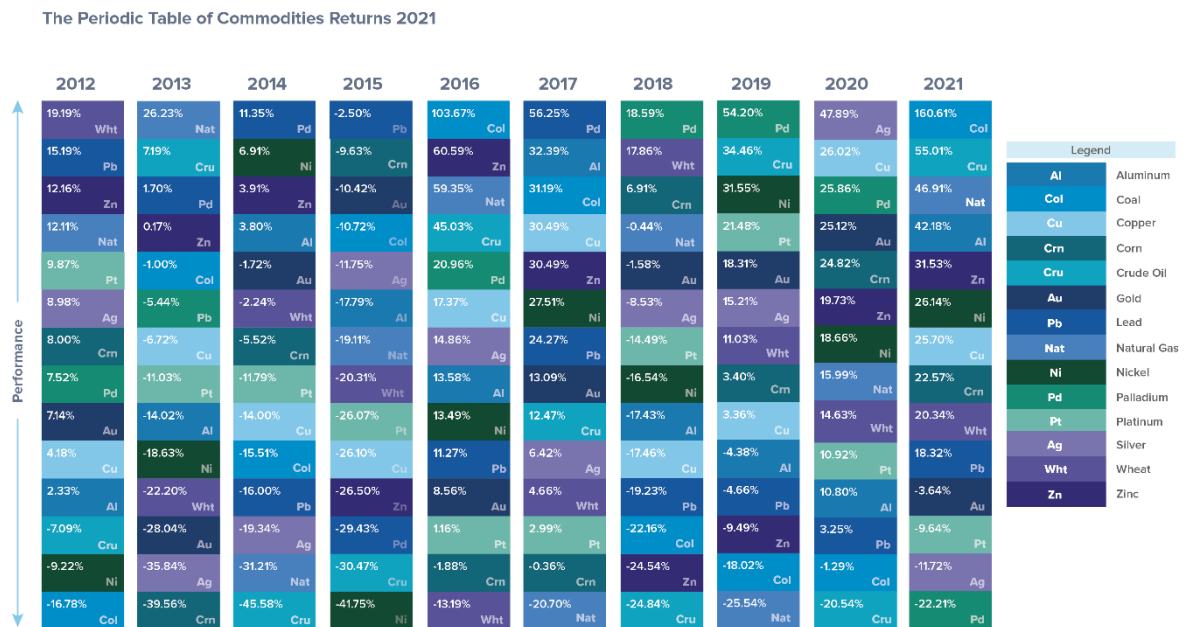
Because of this, one of the primary ways investors gain diversified exposure to commodities is via commodity funds that use financial instruments called futures. Futures are essentially contracts that allow producers and buyers to lock in a price, to remove uncertainty. For example, a farmer may wish to guarantee the price he receives for the grain that will be harvested next year. At the same time, a

baker may want to lock in the price he will pay for the grain to make bread. Each will enter into a futures contract today to agree on the price in the future. When this contract expires, if the current price in one year is not the same as the futures prices that were agreed by the buyer and seller, one will be worse off. For example, had the farmer agreed to sell his grain for £100 but a year later, grain in the market is trading at £250, the farmer effectively loses out by £150.

The commodity fund essentially speculates on the future price of commodities by forecasting supply and demand and then takes positions in futures contracts, hoping to benefit from those anticipated movements. Long term results are based on the consistency and accuracy of the fund managers' predictions.

It's important to understand that "commodities" includes a wide range of sectors, and although commodities as a whole may have performed well in comparison to bonds and equity in recent times, individual commodity sectors over time have not performed consistently. This is because the factors that influence supply and demand, plus the nature of production differ for each commodity sector.

The chart below serves to illustrate the inconsistency of returns between commodity sectors.



Source: US Global Investors (2022)

In light of the discussion above our portfolios do not contain commodity funds. However, we still maintain exposure to commodities indirectly because the funds we invest in, hold mining and commodity-producing companies. Therefore, our investors are well placed to benefit from commodity returns over the long term. Maintaining our global approach to investing also provides our investors with the best long-term hedge against inflation.

The Grass Is Not Always Greener: A Digital Crisis

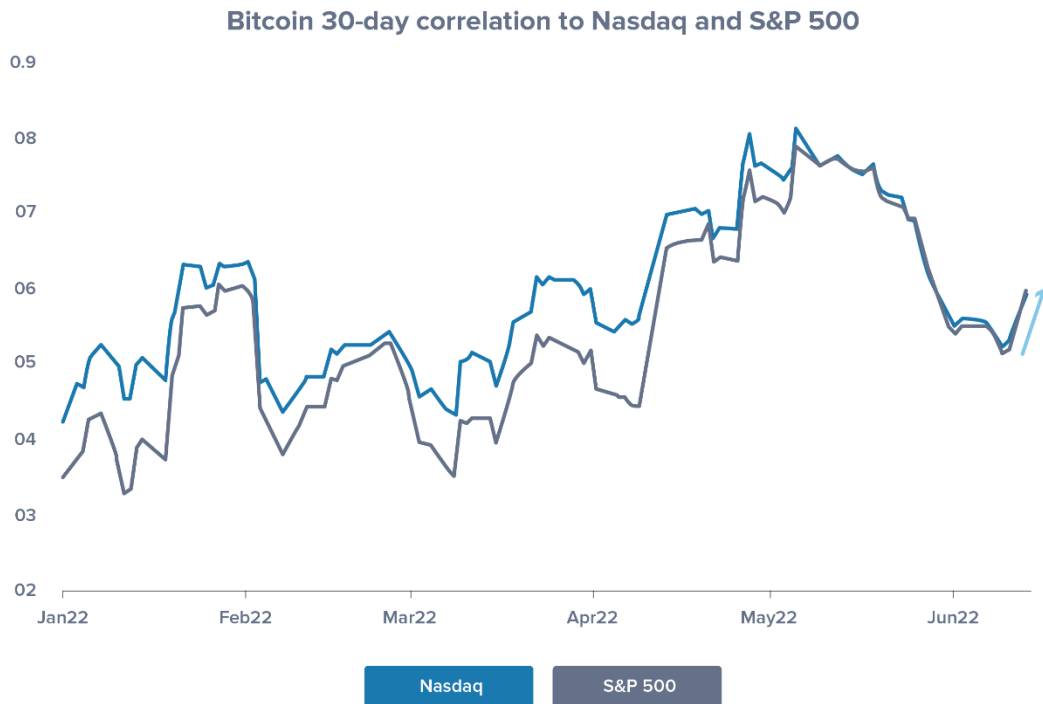
While the technology underlying cryptocurrency (“blockchain”) allows digital information to be recorded, distributed, and remain unedited, it undoubtedly has many potential real-world applications. However, digital assets should not be considered an investment. Events over the last quarter seem to support the likes of Warren Buffet, a long-time crypto sceptic, who commented in May that he “wouldn’t buy all of the bitcoin in the world’ for \$25. It doesn’t produce anything”. Bill Gates, another long-term sceptic described the whole phenomenon as something that’s “100% based on greater fool theory”, referring to the idea that investors can make money on worthless or overvalued assets so long as there are enough investors willing to pay more for them.

It has been hard not to have noticed the rising popularity and prices of cryptocurrencies over the last few years. News stories of Bitcoin, Dogecoin and Ethereum doubling in value, teenagers supposedly becoming millionaires overnight while trading an “exciting” digital asset that governments can’t control. A very attractive proposition and it seems that many people have been swept up in the mania.

Some suggest that the pandemic provided a catalyst for the boom in prices. Stuck at home with disposable income, many investors turned to day trading and cryptocurrencies as a way to make money and kill time. Bitcoin was trading at \$8,533 at the start of March 2020 before the pandemic began, a year later it had reached \$49,639.⁴ This price increase would suggest at least some link with wider world events.

What’s more, not only were cryptocurrencies providing excellent returns, but proponents claimed the assets had low correlation with equity markets. This meant holding such assets would provide investors with diversification benefits. While Bitcoin and other cryptocurrencies may have initially had a negative correlation with equity markets, and thus provided diversification benefits, this no longer seems to be the case.

⁴ CoinDesk, Bitcoin prices as of 01/03/2020 and 01/03/2021.



Source: Bitcoinist (2022)

Advocates further argued that cryptocurrencies were an excellent inflation hedge. Bitcoin in particular was touted due to its supposed ability to maintain its real value, because the supply of the coin is fixed at 21 million, creating scarcity as demand increases. However, a recent analysis by the Bank of America found that Bitcoin's inflation hedging ability may well have been oversold.⁵

Investors in Bitcoin and other cryptocurrencies have suffered large losses. Bitcoin fell in value by 40.8% during June⁶, its second-biggest monthly loss since its debut in 2009.⁷ By the end of June 2022 Bitcoin was worth \$18,795, down 72% from its highest ever value of \$67,553 back in November 2021.⁸

⁵ Fortune (2022).

⁶ CoinDesk, Bitcoin prices: \$31,776.51 (01/06/2022) and \$18,795.75 (30/06/2022).

⁷ CoinDesk (2022).

⁸ CoinDesk, Bitcoin prices: \$67,553.95 (08/11/2021) and \$18,795.75 (30/06/2022).

Bitcoin Prices: 2015-2022



Why has Bitcoin's value plummeted? Commentators suggest a number of reasons. Firstly, as the wider economy struggles, investors are more cautious, investing in something as volatile as Bitcoin to many has become far too risky. Additionally in May, investor confidence in the cryptocurrency market as a whole was knocked as a less well-known coin, "Terra Luna" which was valued at an all-time high of \$119 on 5th April, collapsed to an all-time low value of \$0.000000999967⁹ by 13th May. As of the end of June, the price had increased to \$0.0001131, but essentially investors had lost everything.

The collapse was linked to its sister coin, TerraUSD, which was supposedly a "stablecoin". These coins have their value pegged to a reserve asset such as the dollar or gold. In theory, they are meant to be safer than non-pegged, volatile cryptocurrencies. The crash, of course, showed that this was not the case.

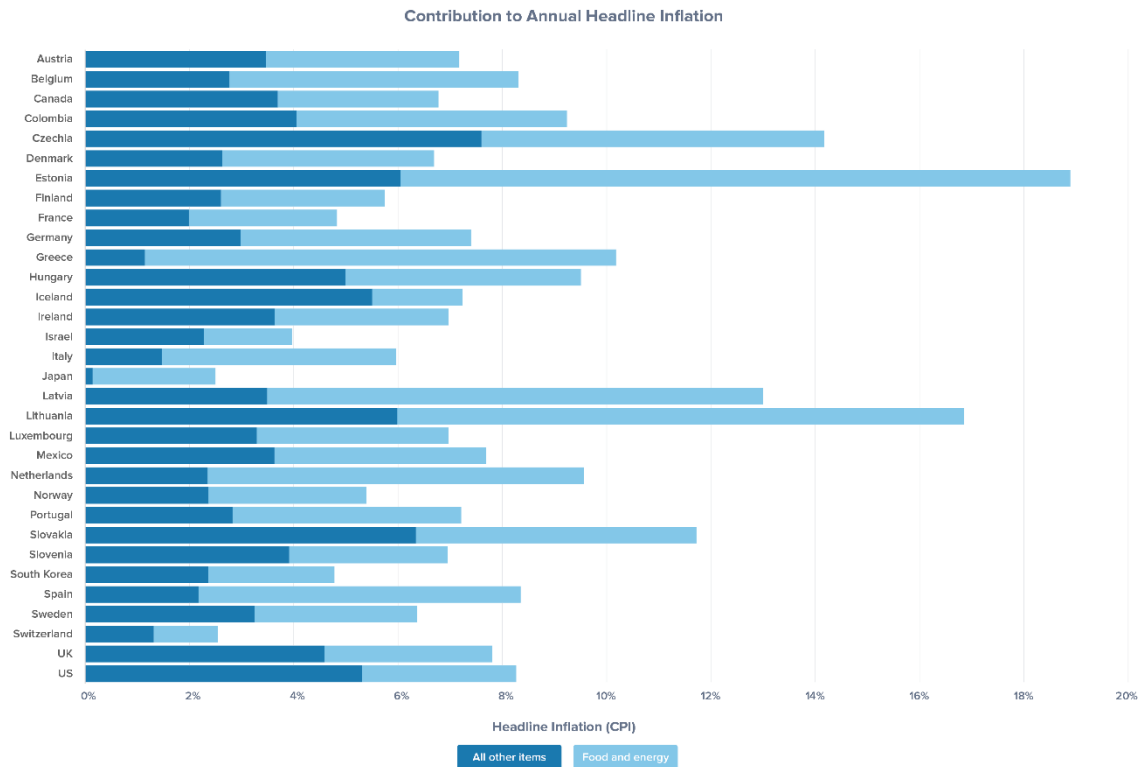
Because cryptocurrencies' value is effectively pegged to desirability and has no underlying intrinsic value, as more people sell, the value drops, which means more people sell and the cycle continues.

For many investors in cryptocurrencies, the last quarter months have been difficult, some have lost their entire investment. However, the crash in Bitcoin and other digital assets serves as a warning that investments should only be made based on sound fundamental financial analysis. The team here recommend, that cryptocurrencies be viewed in the same manner as the 2:45 at Ascot - be prepared to lose your money.

⁹ CoinGecko (2022)

Asset Class Returns

Over the second quarter, investors continued to face economic headwinds. Most noticeably in everyday life, the impact of inflation on prices has become all too apparent. In the UK inflation has reached a 40-year high of 9.1%. The Bank of England has recently revised its previously forecast inflation rate for October, up from 10% to 11%. In the US, inflation stands at 6.3%, three times the 2% target set by the Federal Reserve. Inflation has not been at this level since Ronald Reagan was in office, back in 1981. On the continent, inflation is now at 8.6%, up from 8.1% in May and the key driver for most countries: increasing food and energy prices.



Source: OECD (2022)

In an attempt to reduce this inflationary pressure, central banks have increased interest rates. The idea is that with increased interest rates, people are not only encouraged to save more but also reduce their consumption of goods and services, as it becomes more expensive to borrow money to fund these purchases. The hope is that with less money in the economy chasing the goods and services available, prices will stop rising.

In the US interest rates are currently at 1.5%, after a 0.75% increase in June, the sharpest rate hike since 1994. More increases are expected, with Jerome Powell, the Chair of the Federal Reserve commenting that “either a 0.50% or a 0.75% increase seems most likely at our next [July] meeting”¹⁰. Christopher Waller, a member of the Federal Reserve Board also supported a 0.75% increase in interest rates at the next meeting and indicated a further 0.50% increase would be required in September.¹¹ According to Waller, it would not be until at least November that the central bank would

¹⁰ CNBC (2022).

¹¹ Wall Street Journal (2022).

revert back to 0.25% increases. The Federal Reserve forecasts that by the end of 2022 the interest rate will be between 3.25% and 3.5% and by the end of 2023 close to 4%¹².

The Bank of England has also made it clear that tackling rising inflation is a key priority. In June, following the 0.25% rate rise, the bank said it “will if necessary, act forcefully in response”¹³ to continuing inflationary pressure. Sir Jon Cunliffe, a deputy governor at the Bank commented that the monetary policy committee would “do whatever is necessary” to make sure higher inflation does not become “the new normal”. And speaking at a banking conference, the bank’s chief economist Phill Huw expressed his “willingness to adopt a faster pace of tightening”, depending on “the data that we see and my interpretation of it”¹⁴. If interest rates were to rise by 0.50% to 1.75% in August, this would be the single greatest rise since 1997, when the central bank became independent.

For the first time in eleven years, the European Central Bank has announced it intends to raise interest rates from -0.5% by 0.25% in July.¹⁵ The Vice-President of the bank has commented that in September “we can consider a bigger increase, if the inflation outlook persists or deteriorates. Our future decisions will be data-driven”.

What do rising interest rates mean for investors? For equity investors, the biggest concern of rising interest rates is their impact on economic growth. As interest rates increase, the economy slows as spending and consumption decrease. The issue for central banks is that the impact of rising commodity prices, particularly food and energy, has already had an impact on economic growth. With few exceptions, economic growth rates for 2022 have been revised downwards.



Source: OECD (2022)

¹² USA Today Money (2022).

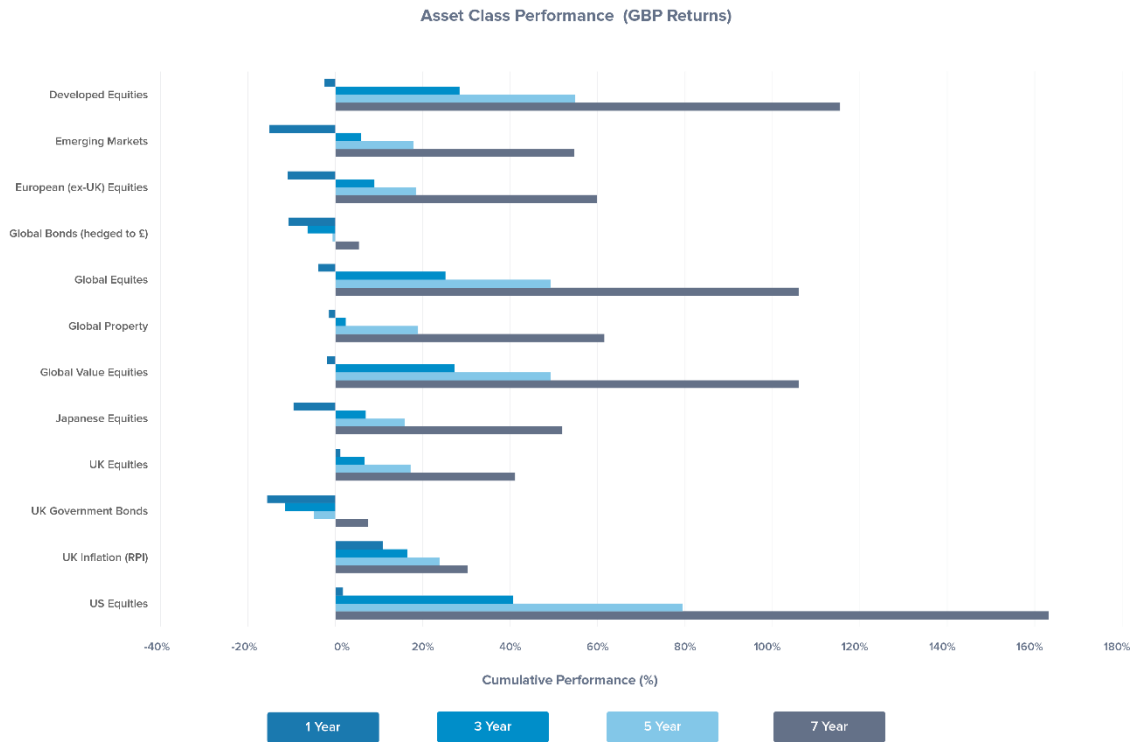
¹³ Bank of England (2022a).

¹⁴ Bank of England (2022b).

¹⁵ European Central Bank (2022).

This makes it challenging for central banks - increasing interest rates to reduce inflation may well push economies that are already struggling into recession. Indeed, the Federal Reserve Chairman, told a congressional committee in June that it would be challenging to curtail inflation without triggering a recession.¹⁶

The problem for equity investors is that economic growth is the key driver of equity returns over the long term.



Source: Betafolio (2022) ¹⁷

¹⁶ United States Senate Committee on Banking, Housing, and Urban Affairs (2022).

¹⁷ Developed Equities: iShares Developed World Index; Emerging Markets: Vanguard Emerging Markets Stock Index; European (ex-UK) Equities: Fidelity Index Europe ex UK; Global Bonds (hedged to £): Vanguard Global Bond Index Hedged; Global Equities: iShares MSCI ACWI UCITS ETF; Global Property: iShares Global Property Securities Equity Index; Global Value Equities: Dimensional Global Core Equity; Japanese Equities: Fidelity Index Japan; UK Equities: Vanguard FTSE U.K. All Share Index Unit Trust; UK Government Bonds: Vanguard UK Government Bond Index; UK Inflation (RPI): Index: UK Retail Price Index; US Equities: Fidelity Index US. Performance periods: 1 Year: 30/06/2021-30/06/2022; 3 Year: 30/06/2019-30/06/2022, 5 Year: 30/06/2017-30/06/2022; 7 Year: 30/06/2015-30/06/2022.

Equity

Equity markets continued to struggle over the second quarter. While emerging markets were more resilient over the quarter, falling 4%, compared to developed markets, which fell 9.1%¹⁸. The Russell 3000, a broad US index returned -17%, the European Stoxx 600 -10.6%, and the FTSE UK All Share, -5.9%. This data would suggest the UK equity market is somewhat more resilient. However, UK equities have struggled in comparison to other markets since the 2016 European Union referendum. For this reason, the pullback in the UK market has not been as large.

Despite the challenging conditions, value investors had some reason to rejoice as it appears that value stocks are providing some protection in the current market turmoil. While global value stocks fell 4% over the quarter, global growth stocks fell 13.4%¹⁹. Comparing the performance of growth and value stocks over the last year, we can see that while value stocks have grown 4.5%, growth stocks are down 12.9%²⁰.

Recent research by FactorResearch²¹ shows that value was the best performing factor during 2021 and continues to be in 2022.

Factor Olympics (Long-Short): Global

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 YTD
Low Volatility 17.5%	Low Volatility 20.4%	Low Volatility 29.4%	Momentum 26.9%	Value 13.9%						
Momentum 11%	Momentum 14.1%	Multi-Factor 5.9%	Low Volatility 18.7%	Size 8.3%	Quality 15.5%		Low Volatility 5.7%		Value 9.8%	Value 9%
Multi-Factor 5.6%	Quality 9.7%	Value 4.3%	Quality 12.4%	Low Volatility 5.2%	Momentum 10.5%		Quality 4.1%		Quality 5.6%	Momentum 3.7%
Size 2.9%	Multi-Factor 8.3%	Quality 0.5%	Multi-Factor 10.2%	Multi-Factor 3.1%	Low Volatility 7.3%	Low Volatility 11.7%	Multi-Factor 0.5%	Momentum 16.6%	Low Volatility 4.9%	Low Volatility 3.2%
Quality 0%	Size 2.7%	Momentum 0.1%	Size 4.7%	Quality 0.2%	Multi-Factor 4.5%	Quality 4.1%	Momentum 0.2%	Quality 3.7%	Multi-Factor 1.4%	Multi-Factor 2.1%
Value (0.9%)	Value (4.9%)	Size (3.2%)	Value (10.9%)	Momentum (10.2%)	Size (0.5%)	Multi-Factor (1.1%)	Size (3.6%)	Multi-Factor (2.8%)	Momentum (5.2%)	Size (1.3%)
					Value (9.2%)	Size (3.4%)	Value (3.9%)	Size (4.7%)	Size (8.2%)	Quality (4.2%)
						Momentum (5%)		Low Volatility (10.5%)		
						Value (13.1%)		Value (19.2%)		

Stock Market (Long-Only): Global

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 YTD
17.6%	32.2%	9.7%	3.8%	7.9%	18.3%	(9.3%)	28.1%	15.8%	22.3%	(20.1%)

Source: FactorResearch (2022)

The outperformance of value compared to growth raises the question of whether we can expect value stocks to outperform growth stocks in times of high inflation, rising interest rates and slow economic growth. From a theoretical perspective, growth stocks have been valued, taking into consideration rising earnings and profits. Increasing inflation will erode the real value of these future expected

¹⁸ Developed: MSCI World; Emerging Markets: MSCI Emerging, 31/03/22 – 30/06/22.

¹⁹ Global Growth: MSCI ACWI Growth; Global Value: MSCI ACWI Value, 31/03/22 – 30/06/22.

²⁰ Global Growth: MSCI ACWI Growth; Global Value: MSCI ACWI Value, 30/06/22 – 30/06/22.

²¹ FactorResearch (2022).

earnings, which will put downward pressure on asset prices. From the perspective of value stocks, these “promises” of higher future profits have not been priced into the valuation to the same extent, and therefore value stocks may be positioned to outperform.

Indeed, research shows that during decades of high inflation, the 1940s, 1970s and 1980s, value stocks outperformed. During the 1930s, 1990s and 2010s, when inflation was low, growth stocks outperformed.²² In addition, a recent study by Dimensional Fund Advisors²³ looked at the performance of different risk premiums across the business cycle. The findings showed that there are excess returns in the value, small and high-profitability premium following market declines, as can be seen from the chart below.

Performance of Premiums: Average Cumulative Return Differences Following Market Declines

US stocks, July 1963–December 2020

	Small Minus Large			Value Minus Growth			High Profitability Minus Low Profitability		
	1YR	3YR	5YR	1YR	3YR	5YR	1YR	3YR	5YR
10% Decline (N = 19)	0.22%	18.46%	30.61%	1.39%	20.06%	39.27%	5.31%	10.73%	24.62%
20% Decline (N = 10)	9.46%	26.96%	40.26%	1.57%	25.30%	42.68%	3.61%	14.54%	29.06%
30% Decline (N = 5)	11.08%	13.32%	51.80%	1.38%	6.33%	28.00%	0.45%	11.84%	12.84%

Source: Dimensional Fund Advisors (2022)

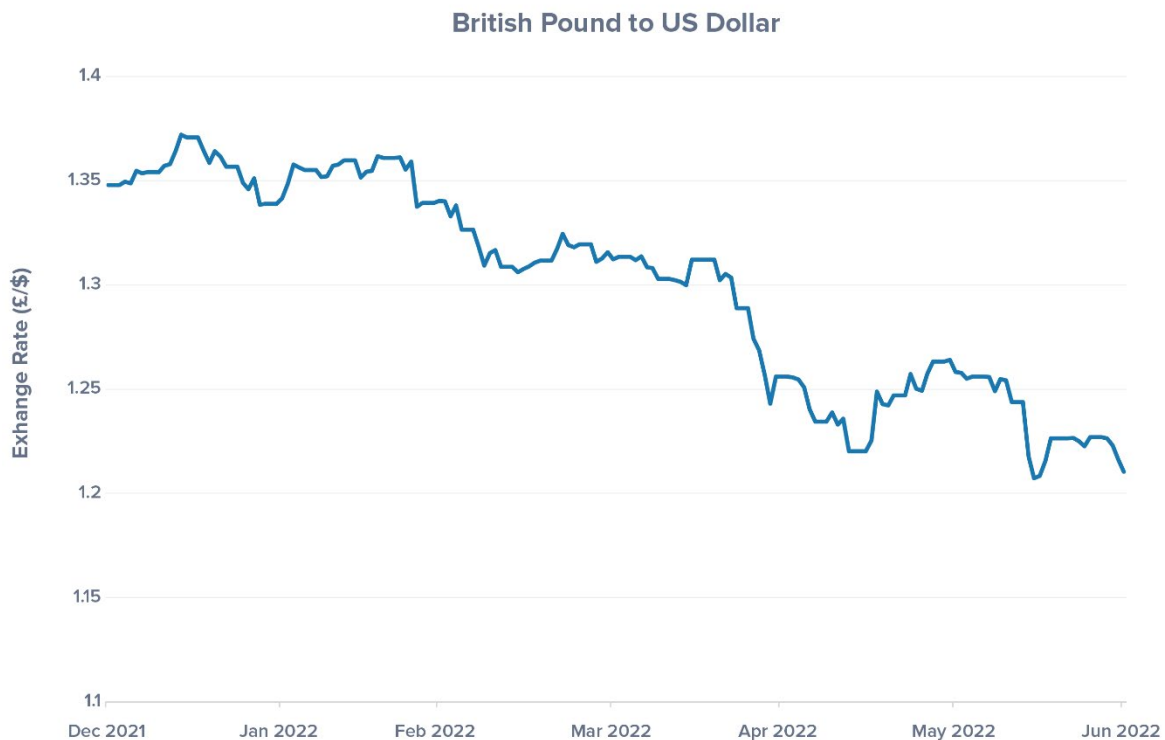
²² Wall Street Journal (2021).

²³ Source: Dimensional Fund Advisors (2022).

Fixed Income

Like their equity market counterparts, fixed income markets continued to struggle over the second quarter. Central banks across the globe, reacting to increasing inflation increased interest rates and made it clear that more rises would follow. The problem for investors is that bond prices are inversely related to interest rates. When interest rates increase, bond prices fall. Essentially, a bond pays a fixed rate of interest. If this rate is 1% and interest rates increase to 2%, that particular bond is less attractive, demand falls, and as we know, when demand falls, prices drop. Global bonds fell 0.4%²⁴ over the quarter, down 3.6%²⁵ from the start of the year.

For UK investors holding bonds which are hedged to the pound, adverse currency movements have also impacted returns. There has been an 11% depreciation in the pound against the US dollar since the beginning of the year²⁶. The chart below illustrates how the pound has lost value, compared to the dollar, over the first six months of 2022, beginning the year at 1.35 USD per pound, and falling to 1.21 USD per pound by the end of June, a depreciation of 10%.



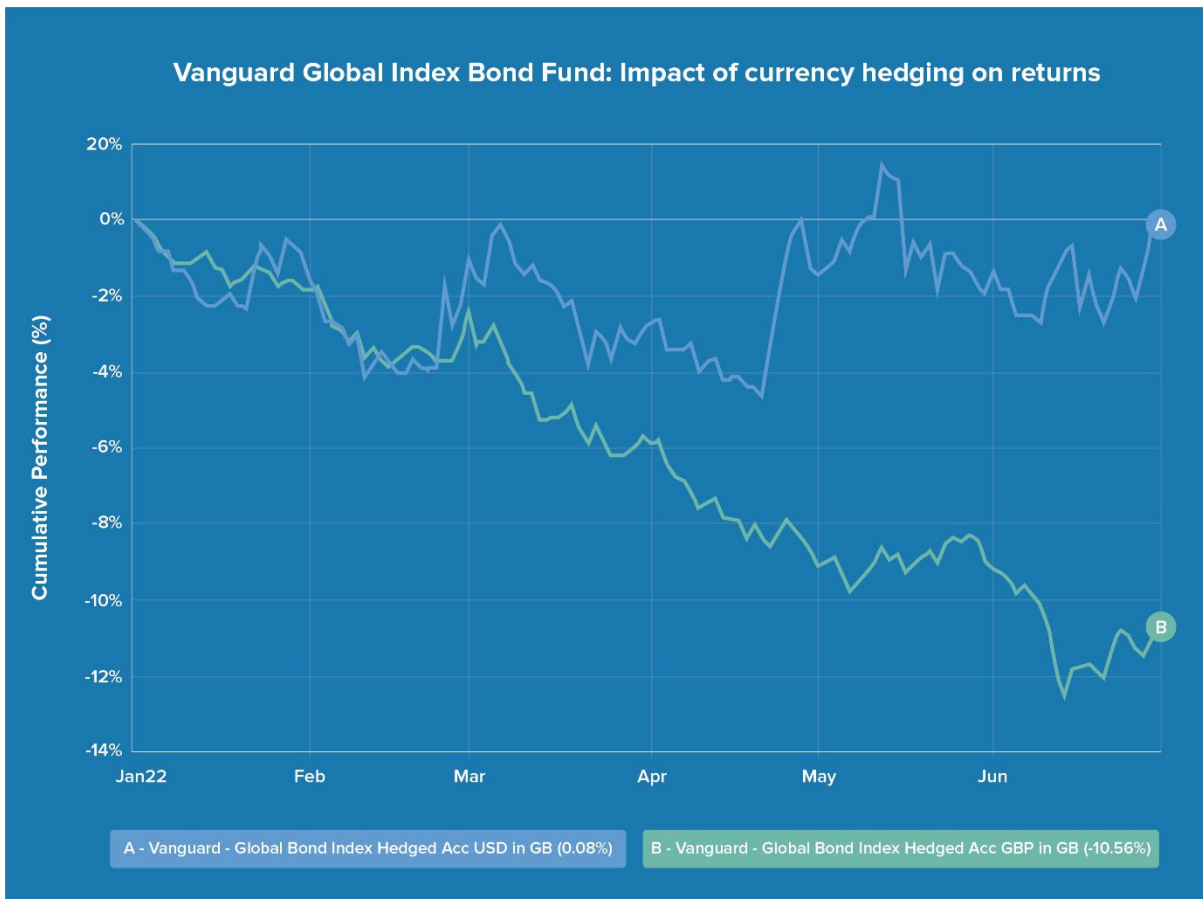
Source: Betafolio (2022)

The effect of this adverse currency movement on the returns from an investor holding a hedged global bond fund can be seen below. Using the Vanguard Global Bond Index fund, with a dollar and pound hedged version, we can see the differential in performance over the first half of 2022.

²⁴ Bloomberg Global Aggregate bond index, 31/03/22 – 30/06/22.

²⁵ Bloomberg Global Aggregate bond index, 31/12/21 – 30/06/22.

²⁶ As of (01/07/2022).



Source: Betafolio (2022)

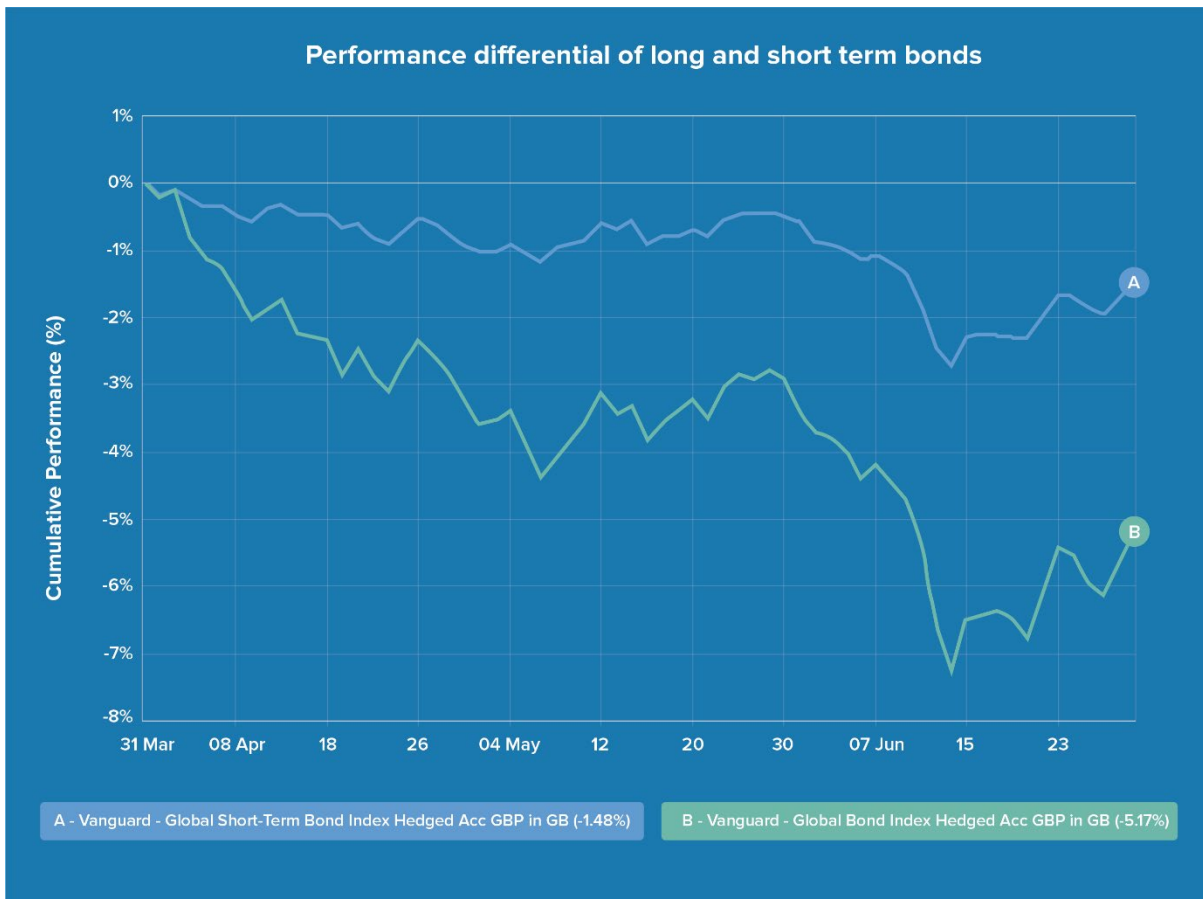
As evident in the chart above, the fund which is hedged back to the pound has underperformed the dollar hedged version by approximately 9%, in line with the pound's depreciation against the dollar. Investors that hold bonds that are hedged to the pound may well indeed question the rationale, given the disparity in performance.

The impact of currency hedging is driven by the volatility level of the hedged asset relative to the volatility level of currencies. Currencies are generally more volatile than bonds, therefore, currency hedging in fixed income portfolios remains an effective tool to drive down portfolio volatility over the long term.

Bond duration is another factor that has had a large impact on global fixed income performance. Duration is a measure of a bond's sensitivity to changes in interest rates. Long term bonds are more sensitive to changes in interest rates than short term bonds. Why? If you held a bond, which annual paid 1% on the principal or "loan amount" of £100, you would receive £1 a year. If interest rates then increased to 2%, an investor which had purchased a 20-year version of the bond would have locked in that £1 payment in for a far longer period of time than an investor that had purchased, for example a 3-year version. The 20-year bond, relative to the 3-year bond would therefore fall in value more than the 3-year bond.

This can be illustrated by comparing the performance of the Vanguard Global Short-Term Bond Index, with a duration of 2.77, which returned -1.5% over the last quarter against the Vanguard Global Bond Index, which has a duration of 7.5, which returned -5.2%.²⁷

²⁷ Both these funds are hedged to the pound and engage in indexing strategies that closely track their respective benchmarks.



Source: Betafolio (2022)

In times of market turmoil, as we have experienced over the last few months, one would expect investors to move towards “safe assets” whose purpose is to serve as a cushion in times of equity market downturns. When equity markets fall, fixed income markets rise, to cushion the overall decrease in the value of the portfolio. Unfortunately, this has not been the case during the recent market downturn with investors’ primary concern being inflation, which unfortunately is still rising.

This does follow an extraordinary period for bond returns, where we saw higher than average gains in bond values as interest rates remained at lows for a prolonged period. Unfortunately, some investors will have gotten used to bonds providing return within the portfolio and must remind themselves that the purpose of the defensive allocation is not to generate growth.

Portfolio Performance

As with the first quarter of 2022, returns for the factor tilted, ESG and market portfolios continue to remain in negative territory. As discussed above, both equity and fixed income markets struggled in the face of rising inflation and economic uncertainty.

Taking a somewhat longer but still arguably short term, 1-year review, we can compare the performance of the three ranges strategies against a market benchmark of the Vanguard LifeStrategy range. What is apparent, is the outperformance of the factor tilts. Investors with this approach have benefited from higher exposure to value stocks, which as discussed above, have performed comparatively well over the last year compared to the broad market. Additionally, these portfolios have increased exposure to short term bonds, to offset the additional risk of tilting to the small and value premium. This has also benefited investors, as the bond allocation has been less negatively impacted by changing interest rates.

The performance of the market tracking portfolios with lower allocations to equity is noteworthy. We might expect those with a higher allocation to fixed income to sit between the performance of the factor tilted and ESG strategies, However, they are more exposed to bond funds which are hedged back to the pound. This has resulted in those market models with a higher bond allocation underperforming the factor tilted and ESG counterparts.

Over the 1-year time horizon, the performance of Vanguard LifeStrategy portfolios with high allocations to equities was similar to the market portfolio. However, as the equity allocation in the portfolios was reduced, the LifeStrategy models' underperformance, compared to the market portfolio increased. There are two reasons for this. Firstly, Vanguard's portfolios with a larger bond allocation are more heavily invested in funds hedged back to the pound. For example, 52% of the bond allocation in LifeStrategy 20 is hedged back to the pound, compared to 39% of the allocation for the equivalent market portfolio. Secondly, the LifeStrategy range is more sensitive to changes in interest rates, with a duration of 10, compared to the market portfolio, which has a duration of 8.

The team is always cautious to draw any conclusions when reviewing short term data, as quarterly performance figures and even yearly data, in terms of financial markets last an incredibly short amount of time.

This becomes apparent when reviewing the relative performance of the ranges over the long term. Over a 7-year period, performance between the ranges is more representative and logical, driven by varying factor exposure. Value stocks have lagged their growth stock counterparts for a prolonged period of time. Therefore, the factor tilted models have underperformed their equivalent ESG models, which maintain a smaller factor tilt, which in turn underperform the market models, with no factor tilts. The disparity in performance becomes more evident as the equity allocation increases.

Please refer to the appendices for investment performance for all our thirty-three portfolios.

Closing Comments

This quarter feels very déjà vu again. For investors, there appears to be no let-up - equities are down, bonds are down, and inflation continues to creep up. Not even the much-touted cryptocurrencies are able to buck the trend. As inflation intensifies, central banks have made it clear that they intend to respond aggressively with higher interest rates. This will inevitably put further pressure on economic growth and financial markets – unfortunately we're not going to be out of the woods anytime soon!

What is an investor to do? Get out, cut their losses, and look for a different way to grow their wealth? No. It's during the difficult times that perseverance will allow an investor to prevail over the long term, no matter how difficult it may be in the face of a constant wave of bad news. The historical data is clear, in order for investors to give themselves the greatest chance of long-term wealth creation, it's essential to remain invested, stay calm and don't react to short term market headwinds.

How can we help? Unfortunately, Thanks Wealth Planning and the Betafolio team here cannot increase the output of commodities such as gas or oil to help ease rising prices, but what we can do is build and maintain the most robust financial plans and portfolios. So, over the long-term investors are best positioned to participate in the greatest wealth creation instrument known, that of the stock market.

The Betafolio Investment Team



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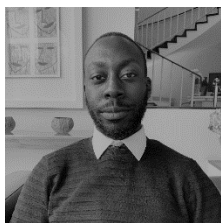
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Important Regulatory Information

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Past performance is no guarantee of future return. The value of investments and the income from them can go down as well as up. You may get back less than you invest. Transaction costs, taxes and inflation reduce investment returns.

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Appendix 1 – Global Market Tracker Investment Strategy Performance

BETAFOLIO TRACKER (2% CASH) PORTFOLIOS	ANNUALISED PERFORMANCE (%)				ANNUALISED VOLATILITY (%) ⓘ				MAX DRAWDOWN (%) ⓘ	DOWNSIDE RISK (%) ⓘ	HISTORIC YIELD (%) ⓘ
	1-YEAR	3-YEAR	5-YEAR	7-YEAR	1-YEAR	3-YEAR	5-YEAR	7-YEAR	3-YEAR	3-YEAR	1-YEAR
Betafolio Tracker (2% Cash) 0	-10.69	-1.95	0.07	1.18	5.54	4.73	4.11	3.94	-13.74	5.04	1.27
Betafolio Tracker (2% Cash) 10	-9.79	-0.95	0.97	2.21	5.18	4.50	3.95	3.78	-13.22	4.93	1.30
Betafolio Tracker (2% Cash) 20	-8.93	0.03	1.87	3.23	5.30	4.99	4.42	4.25	-13.21	5.63	1.33
Betafolio Tracker (2% Cash) 30	-8.05	1.01	2.76	4.24	5.83	6.00	5.35	5.15	-13.25	6.86	1.36
Betafolio Tracker (2% Cash) 40	-7.21	1.99	3.64	5.26	6.68	7.37	6.57	6.33	-13.34	8.40	1.39
Betafolio Tracker (2% Cash) 50	-6.41	2.94	4.50	6.24	7.73	8.90	7.93	7.63	-14.19	10.08	1.41
Betafolio Tracker (2% Cash) 60	-5.60	3.90	5.36	7.23	8.91	10.60	9.41	9.06	-16.16	11.93	1.44
Betafolio Tracker (2% Cash) 70	-4.79	4.86	6.22	8.23	10.19	12.39	10.97	10.55	-18.44	13.84	1.47
Betafolio Tracker (2% Cash) 80	-4.04	5.77	7.05	9.18	11.48	14.20	12.53	12.04	-20.72	15.66	1.50
Betafolio Tracker (2% Cash) 90	-3.26	6.72	7.90	10.15	12.84	16.13	14.19	13.62	-23.08	17.72	1.53
Betafolio Tracker (2% Cash) 100	-2.67	7.46	8.56	10.92	13.93	17.69	15.54	14.90	-24.95	19.33	1.55

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Appendix 2 – Classic “Factor Tilted” Investment Strategy Performance

BETAFOLIO (2% CASH) PORTFOLIOS	ANNUALISED PERFORMANCE (%)				ANNUALISED VOLATILITY (%) ⓘ				MAX DRAWDOWN (%) ⓘ	DOWNSIDE RISK (%) ⓘ	HISTORIC YIELD (%) ⓘ
	1-YEAR	3-YEAR	5-YEAR	7-YEAR	1-YEAR	3-YEAR	5-YEAR	7-YEAR	3-YEAR	3-YEAR	1-YEAR
Betafolio (2% Cash) 0	-7.31	-1.46	0.24	1.66	5.09	3.90	3.36	3.83	-10.98	4.04	0.65
Betafolio (2% Cash) 10	-6.76	-0.62	0.91	2.46	4.68	3.82	3.34	3.68	-10.86	4.14	0.70
Betafolio (2% Cash) 20	-6.22	0.21	1.57	3.25	4.80	4.56	4.04	4.17	-10.86	5.06	0.74
Betafolio (2% Cash) 30	-5.70	1.03	2.22	4.03	5.40	5.84	5.18	5.13	-10.91	6.58	0.78
Betafolio (2% Cash) 40	-5.18	1.85	2.86	4.81	6.34	7.40	6.57	6.37	-12.94	8.22	0.82
Betafolio (2% Cash) 50	-4.68	2.66	3.49	5.57	7.48	9.13	8.08	7.76	-15.55	10.19	0.87
Betafolio (2% Cash) 60	-4.19	3.47	4.11	6.15	8.75	10.97	9.67	9.24	-18.23	12.26	0.91
Betafolio (2% Cash) 70	-3.72	4.27	4.72	7.08	10.08	12.89	11.33	10.79	-21.10	14.22	0.95
Betafolio (2% Cash) 80	-3.25	5.06	5.32	7.82	11.45	14.89	13.04	12.40	-23.96	16.35	1.00
Betafolio (2% Cash) 90	-2.79	5.85	5.92	8.55	12.84	16.96	14.81	14.06	-26.82	18.59	1.04
Betafolio (2% Cash) 100	-2.46	6.46	6.37	9.12	13.96	18.65	16.24	15.41	-29.08	20.46	1.08

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Appendix 3 – Ethical, Social & Governance (ESG) Investment Strategy Performance

BETAFOLIO ESG (2% CASH) PORTFOLIOS	ANNUALISED PERFORMANCE (%)				ANNUALISED VOLATILITY (%) ⓘ				MAX DRAWDOWN (%) ⓘ	DOWNSIDE RISK (%) ⓘ	HISTORIC YIELD (%) ⓘ
	1-YEAR	3-YEAR	5-YEAR	7-YEAR	1-YEAR	3-YEAR	5-YEAR	7-YEAR	3-YEAR	3-YEAR	1-YEAR
Betafolio ESG (2% Cash) 0	-8.10	-1.79	0.09	1.08	4.72	3.83	3.35	3.21	-11.56	3.99	0.68
Betafolio ESG (2% Cash) 10	-7.57	-0.82	1.03	2.17	4.47	4.05	3.60	3.41	-11.47	4.49	0.68
Betafolio ESG (2% Cash) 20	-7.26	0.34	2.08	3.33	4.80	4.69	4.38	4.20	-11.94	5.30	0.69
Betafolio ESG (2% Cash) 30	-6.97	1.11	2.73	4.18	5.58	6.10	5.41	5.25	-12.53	6.88	0.69
Betafolio ESG (2% Cash) 40	-6.69	2.00	3.47	5.08	6.66	7.81	6.89	6.67	-13.16	8.65	0.70
Betafolio ESG (2% Cash) 50	-6.43	2.88	4.27	6.01	7.90	9.56	8.42	8.13	-14.48	10.50	0.70
Betafolio ESG (2% Cash) 60	-6.17	3.75	5.11	6.96	9.25	11.28	9.93	9.58	-16.69	12.40	0.70
Betafolio ESG (2% Cash) 70	-5.93	4.71	6.08	7.99	10.67	12.98	11.70	11.22	-18.51	14.31	0.71
Betafolio ESG (2% Cash) 80	-5.71	5.34	6.68	8.73	12.12	15.82	13.91	13.19	-22.87	17.36	0.72
Betafolio ESG (2% Cash) 90	-5.49	6.19	7.39	9.55	13.60	17.41	15.26	14.50	-24.53	19.02	0.72
Betafolio ESG (2% Cash) 100	-5.15	6.99	8.01	10.24	14.77	18.69	16.33	15.54	-25.74	20.36	0.72

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