

2022: SEMI-ANNUAL MARKET UPDATE

SUMMARY

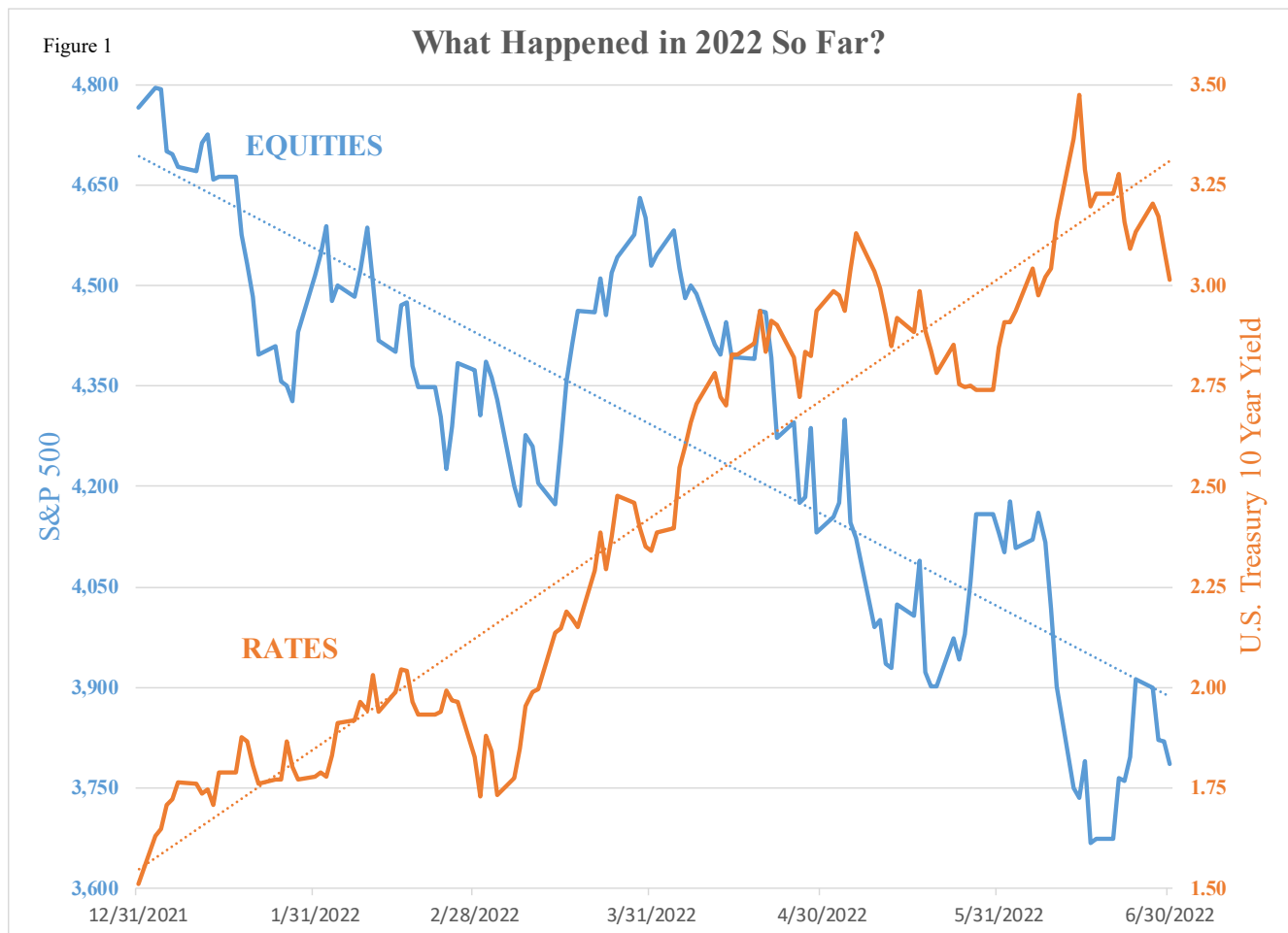
Global equity markets experienced a dramatic sell-off in the first half of the year as inflation rose to levels not seen since 1981 and rising interest rates caused a steady decline in equity valuations (figure 1). The Russian invasion of Ukraine caused major disruptions across commodity markets, fanning the flames of inflation. Despite rising market uncertainty, the Federal Reserve started raising interest rates to combat surging inflation.

In the first half of 2022, global equities fell -20.2% and U.S. fixed income -10.3% while broad commodities rose +18.4% on surging energy prices. Volatility spiked in March and the U.S. Dollar appreciated steadily against most foreign currencies.

THE EMPEROR'S NEW CLOTHES

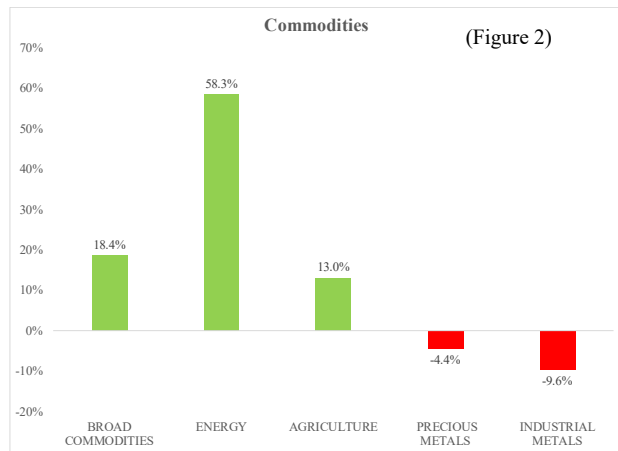
Much like the fairy tale's emperor, central bankers in the developed world were revealed as naked when their models failed to predict the resurgence of inflation. Yet in 2022, year over year inflation regularly exceeded consensus expectations, hitting 9.1% by June 2022. Faced with the evidence, central bankers have now discovered newfound resolve to fight inflation and have begun to lift interest rates, despite market weakness. In the U.S., the Federal Reserve, increasingly anxious to see an improvement in inflation measures, raised short-term interest rates by 0.25% in March, 0.50% in May and 0.75% in June.

In response, panicked investors dumped fixed income holdings, causing yields to rise (bond yields



are inversely correlated to their price). The yield on the 10-year U.S. treasury peaked at 3.48% in June, up from 1.51% at the end of December 2021. Increasingly competitive bond yields and the rising cost of money led equity investors to re-evaluate their holdings, in particular longer duration growth stocks, causing a painful repricing in some of the most overvalued equity sectors. The 20% decline in the S&P500 over the first half was the worst start of the year for the index since 1970. The Nasdaq index fell by 29%.

The Russian invasion of Ukraine in March exacerbated tight supply conditions in commodity markets, particularly in Energy (figure 2), which worsened the inflation outlook. Sanctions on Russia prompted that country to “weaponize” its natural gas exports to Western Europe by curbing deliveries, causing prices to rise across the Energy complex. The Russian blockade of Ukrainian wheat exports also caused upheaval in agriculture markets, risking a global food crisis.

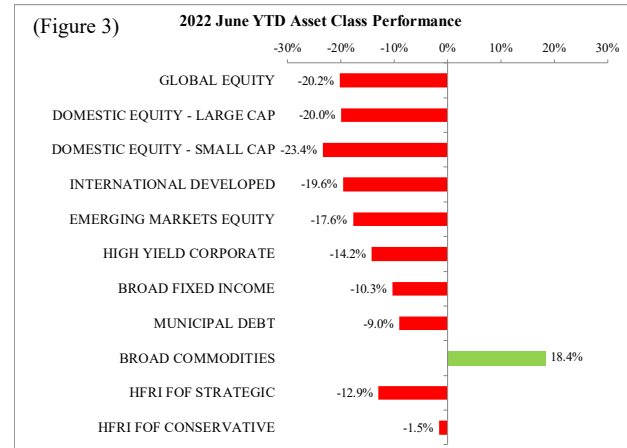


Source: Bloomberg

Reflecting heightened market uncertainty, equity volatility as measured by the VIX index rose from 17.2 at the end of 2021 to a peak of 36.5 in March and down to 28.7 by the end of June. The yield on the benchmark 10-year U.S. Treasury note peaked at 3.48% in mid-June, declining back to 3.01% by the end of June on anticipation of a peak in inflation. The U.S. Dollar appreciated by 9.4% vs. a basket of foreign currencies (DXY index) thanks to rising interest rates and a flight to safety. Gold rallied 12% through March in the wake of the

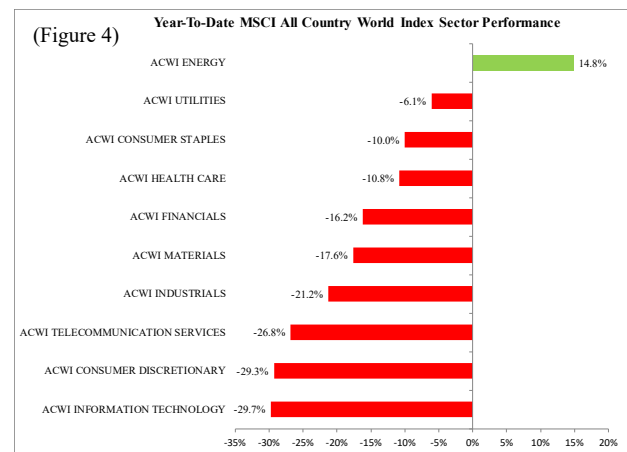
Russian invasion but weakened subsequently as interest rates rose, to end the first half of the year virtually unchanged.

All major asset classes declined for the first six months, except for commodities. The most notable development was the concurrent decline in stocks and bonds during the period, which wreaked havoc on traditional 60/40 portfolios. Alternatives, including hedge funds and private funds, successfully mitigated the downside.



Source: Bloomberg

Year-to-date, all equity sectors were in the red, except for Energy, which benefitted from the rally in commodities.



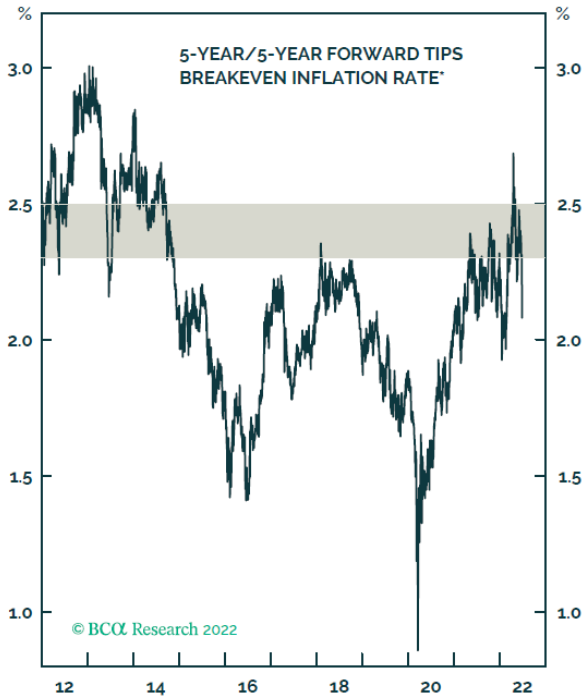
Source: Bloomberg

Clearly, maintaining exposure to long out of favor energy and commodities yielded tremendous diversification benefits to portfolios during this inflationary period and clients benefitted from our overweight recommendation to Real Assets.

**MIRROR, MIRROR ON THE WALL,
WHICH IS THE FAIREST OUTLOOK OF ALL?**

With the Fed now firmly on track for a tightening cycle, investors have relaxed about long-term inflation risk. Expectations for 5-year inflation readings five years out, a favorite market barometer, have now fallen back below the Fed’s target range (figure 5).

(Figure 5)



* THE FEDERAL RESERVE TARGETS AN AVERAGE INFLATION RATE OF 2% FOR THE PERSONAL CONSUMPTION EXPENDITURES (PCE) INDEX. THE TIPS BREAKEVEN IS BASED ON THE CPI INDEX. DUE TO COMPOSITIONAL DIFFERENCES BETWEEN THE TWO INDICES, CPI INFLATION HAS HISTORICALLY AVERAGED 30-TO-50 BASIS POINTS HIGHER THAN PCE INFLATION. THIS IS WHY THE FED EFFECTIVELY TARGETS A CPI INFLATION RATE OF 2.3%-TO-2.5%.

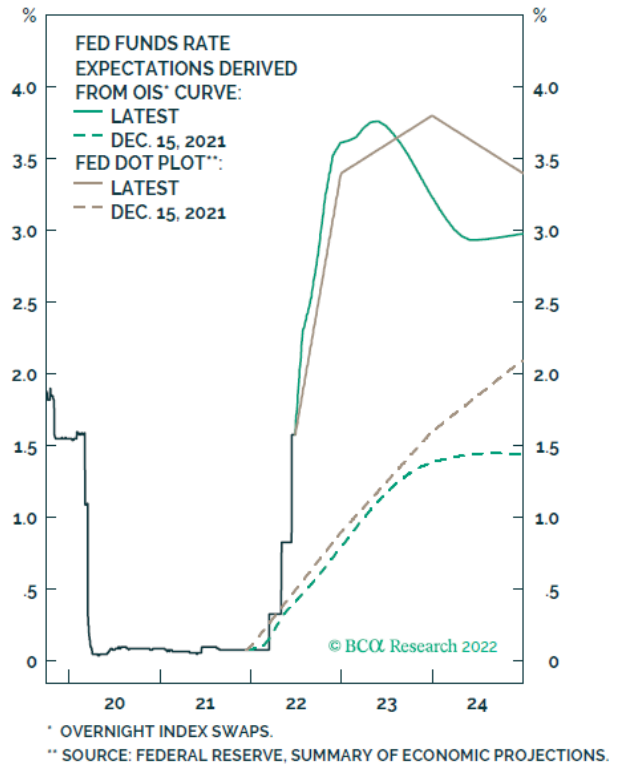
Source: BCA Research

Starting with the more forceful 75 basis points increase at the June 15th Fed meeting, the market narrative has now swung toward rising recession risk as financing costs increase and the economy begins to slow.

Markets indicate that investors already anticipate rates peaking around 3.8% in early 2023 before declining later that year (figure 6), essentially assuming that inflation and the economy will have cooled enough to warrant looser monetary policy. In an upside-down world where bad news is good news, equity markets staged a rally in July.

(Figure 6)

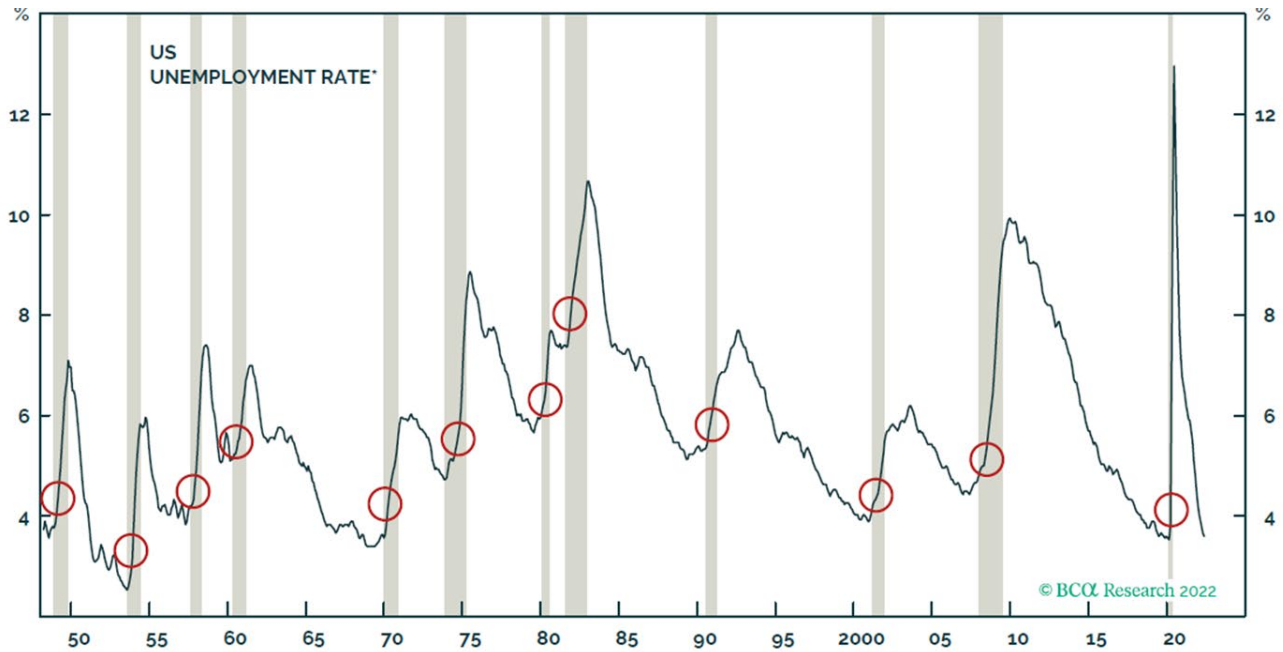
The Fed Is Signaling That It Will Raise Rates To 3.8% In 2023



Source: BCA Research

We view this outcome as premature since inflation measures have yet to cool and the unemployment rate remains near a historical low (figure 7). While there are signs that the housing market is cooling as mortgage rates rise, the rental market remains hot due to a shortage of housing, which will sustain CPI in the near-term. Similarly, oil prices have declined this summer, on expectations of declining future demand, but we think that prices are not high enough to trigger demand destruction and the market remains structurally undersupplied. This is exemplified by sharp backwardation in futures markets, or the fact that spot prices are higher than longer dated contracts, a market signal to incentivize near term production. Hence prices may remain skewed to the upside in energy markets.

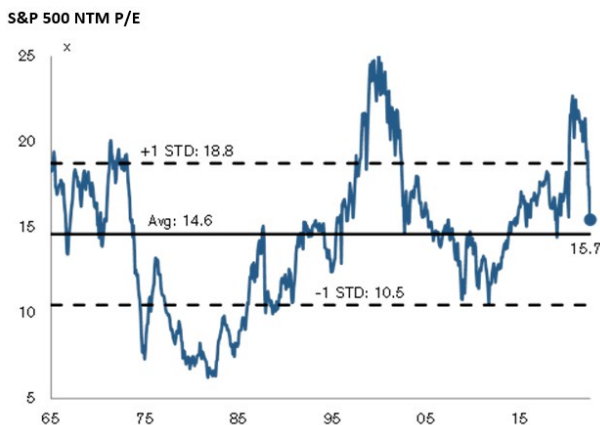
We think that the Fed will keep raising rates longer than the market currently anticipates, until it becomes evident that the job market and inflation are cooling down, at which point a recession may become unavoidable.



* SHOWN AS A 3-MONTH MOVING AVERAGE.
 NOTE: SHADED AREAS DENOTE NBER-DESIGNATED RECESSIONS; CIRCLES IN THE CHART DENOTE THE TIMES WHEN THE 3-MONTH MOVING AVERAGE OF THE UNEMPLOYMENT RATE INCREASED BY MORE THAN ONE-THIRD OF A PERCENTAGE POINT FROM RECENT LOWS.

This environment of slowing growth and slowing but still high inflation is essentially stagflation. Either higher rates to contain inflation will pressure equity valuations anew, as we experienced in the first half (figure 8), or slowing growth will pressure earnings. Either way, the outlook has worsened for equities, and valuations near long-term averages don't necessarily provide a signal to buy the dip. We don't expect the recent equity rally to continue.

(Figure 8)

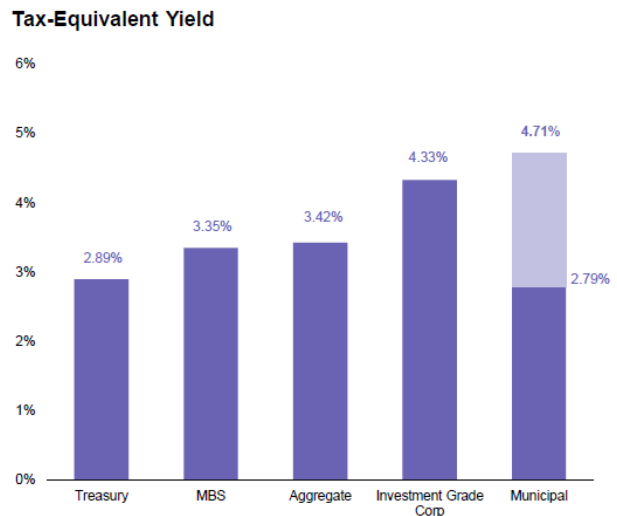


Source: Credit Suisse

We also consider passive equity exposure as riskier than active management, which is well positioned to identify pockets of undervaluations or underestimated growth potential.

While the outlook dims for equities, it is improving for bonds. The inflation scare earlier this year caused bond yields to rise significantly, increasing prospective returns and restoring some insurance value to bonds against equity risk. Bond yields now have room to fall again should growth continue to slow. And while inflation may prove sticky, it has likely peaked now that the Fed is aggressively hiking rates. For taxable investors, municipal bonds offer compelling tax-equivalent yields for quasi-sovereign asset quality (figure 9).

(Figure 9)



Source: Eaton Vance

THE BOY WHO CRIED WOLF

We have warned against the risk of supply shocks in commodities before, a scenario that already largely played out. Yet at the risk of sounding like the boy who cried wolf, we believe that risks remain, and caution is warranted in coming months.

Real assets are in a special situation right now. In theory, slowing economic growth suggests lower demand for commodities, and indeed after surging for over two years, commodity markets fell in June as recession fears developed. Yet the fundamental picture remains unchanged across commodities. Resource depletion and years of underinvestment have resulted in tight spare capacity in multiple markets, an issue that will not be resolved in the near term.

Considering energy markets, spare capacity remains limited to key OPEC countries Saudi Arabia and the United Arab Emirates as U.S. producers remain constrained by capital markets and inflation in labor and equipment. Ensuring global supply depends largely on volatile geopolitical developments, such as a likely embargo of Russian oil (expected to apply after December 5th) or an Iranian nuclear deal that could lift sanctions on that country’s oil exports. The U.S. has also been releasing oil from its Strategic Petroleum Reserve, increasing available supply, but this policy is set to end in September (and reserves will likely need to be replenished in the future).

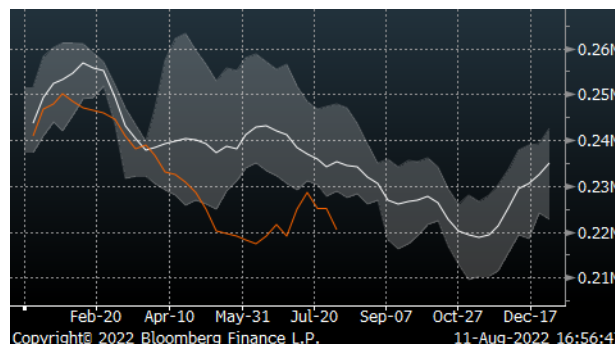
On the demand side, although oil demand growth may slow, history shows that outright declines only take place during major crises, such as the Global Financial Crisis of 2008 or the Covid outbreak of 2020. Current market conditions of incremental slowdown don’t seem consistent with expectations of a major decline in consumption. In fact, strict lockdown measures in China have likely limited oil demand growth and a loosening of quarantine requirements could unleash pent-up demand there.

It is true that high gasoline prices have resulted in lower demand in the U.S. recently, but we expect that gasoline prices will remain skewed to the

upside due to low inventories and declining U.S. refining capacity (figures 10 and 11).

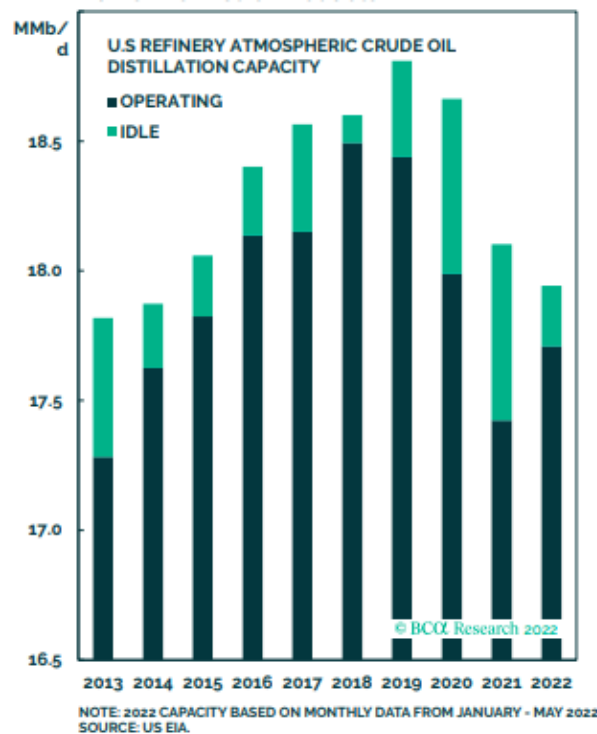
(Figure 10)

U.S. gasoline stocks vs. 5-year average



Source: IEA, Bloomberg

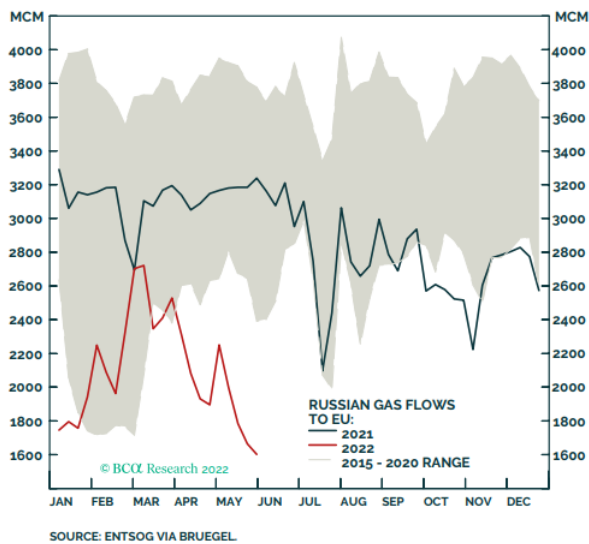
(Figure 11)



Source: BCA Research

In addition, turmoil from the Ukraine conflict is likely to support demand across the energy complex. As shown in figure 12, Russia has curtailed gas exports to Europe. This is prompting European countries to turn to alternative sources, including seaborne liquefied natural gas (LNG), as well as coal and oil for their power generation.

(Figure 12)

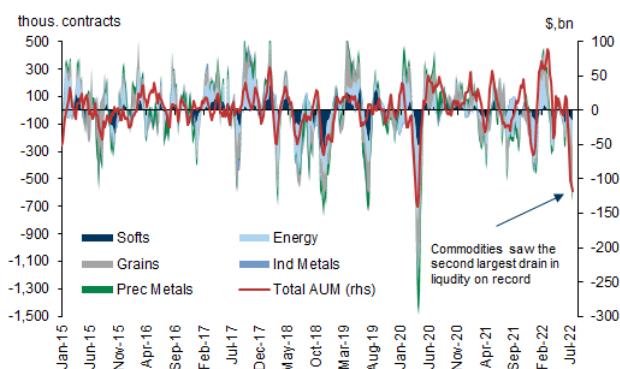


Source: BCA Research

Sustained demand, disappointing supply and declining inventories don't seem to square with falling commodity prices. In fact, declining prices suppress the demand destruction that would help balance commodity markets. Other factors may be at play.

As shown in figure 13, commodity markets faced one of the largest liquidity drains on record in June. As expectations of a recession grew, cross-asset macro traders pulled back in concert, with low liquidity conditions amplifying declines more than justified by fundamental market conditions.

(Figure 13)

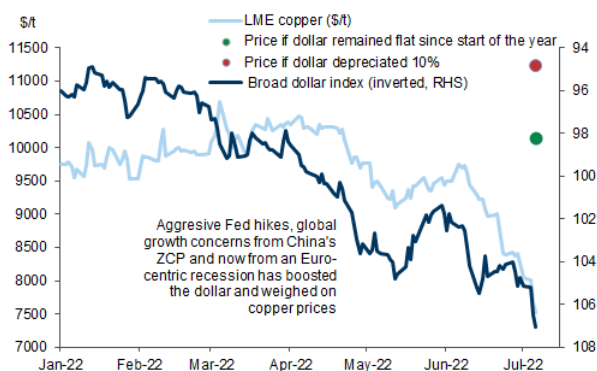


Source: Goldman Sachs

In addition, the persistent strength of the U.S. Dollar, propped by rising interest rates and seen as a haven in volatile markets, has increased the cost of

commodities for foreign currency buyers. As shown in figure 14, the price of copper has fallen as the U.S. currency appreciated against its main trading partners. Despite lower demand, copper inventories remain at historical lows and lower prices don't resolve the lack of capital expenditure on new projects and longer-term supply issues.

(Figure 14)



Source: Goldman Sachs

We think that a pause in the speculative sell-off by macro traders or reversal in the strength of the U.S. Dollar will allow persistent market supply issues to re-assert themselves, leading to higher prices once more. For that reason, we continue to recommend an overweight to natural resources in client portfolios despite the aging market cycle.

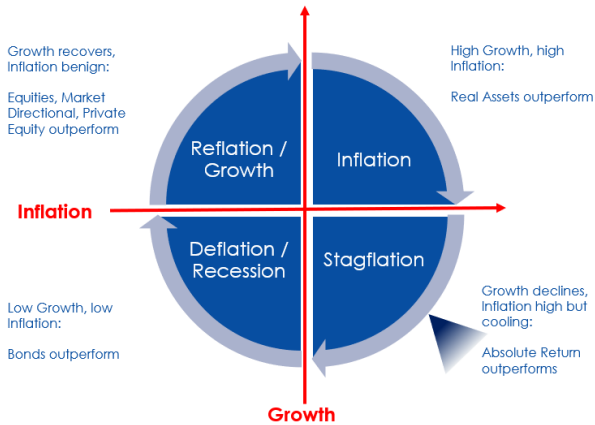
THE THREE LITTLE PIGS

We believe that markets have entered a period of stagflation characterized by slowing growth, recession concerns and persistent inflation. If we are correct, the strategies most likely to deliver positive returns will display low sensitivity to major markets and/or a high degree of nimbleness to move across assets and identify opportunities.

Absolute return strategies, including global macro, trend-following, arbitrage or multi-strategy appear well positioned to weather these markets (figure 15). Continued uncertainty regarding inflation and growth means that fixed income and real assets have a role to play in balancing portfolios, with risks still tilted toward inflation in our view, due to commodity supply constraints. We suspect that

equity markets will trade sideways with alternating periods of strength and weakness, requiring more frequent rebalancing than a simple buy and hold strategy might suggest.

(Figure 15)



Source: Windrose Advisors

Drawing parallels with the tale of the “Three Little Pigs,” investors relying exclusively on stocks effectively build a portfolio out of straw, adequate during good market conditions but flimsy in a recession. Adding bonds to the portfolio is akin to building a portfolio out of wood, a stronger material but not necessarily sufficient protection when inflation appears, as we just experienced earlier this year. In the end, adding alternatives, including commodities, hedge funds and private assets is required to build truly resilient, all-weather portfolios, or a house of bricks.



RESEARCH/COMMENTARY DISCLAIMER

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

This material has been prepared by Windrose Advisors, LLC on the basis of publicly available information, internally developed data and other sources believed to be reliable. The information provided herein is for general informational purposes only and does not constitute an offer to sell or a solicitation of an offer to buy any securities or commodities, or investment advice relating to securities or commodities, or a representation that any security or commodity is a suitable or appropriate investment for any person. All information herein is written and prepared for large and experienced institutional investors with the highest degree of financial sophistication and knowledge and the capacity to withstand and assess any financial losses. Opinions expressed herein are current opinions as of the date appearing in this material only and are subject to change without notice. In the event any of the assumptions used herein do not prove to be true, results could vary substantially. All investments entail risks. There is no guarantee that investment strategies will achieve the desired results under all market conditions. No representation is being made that any account, product, or strategy will or is likely to achieve profits, losses, or results similar to those discussed, if any. No part of this document may be reproduced in any manner, in whole or in part, without the prior written permission of Windrose Advisors, LLC. You may not rely on the statements contained herein. Windrose Advisors, LLC shall not have any liability for any damages of any kind whatsoever relating to this material. You should consult your advisors with respect to these areas. By accepting this material, you acknowledge, understand and accept the foregoing.