Macro Intelligence Report
November 2022

GAMMA INVESTMENT CONSULTING

## Gamma Global Macro Model Highlights

- **The Gamma US Economic Model continues to predict a moderate recession next year with inflation falling to a 6.5% yr/yr rate by the end of 2023.**

- **The S&P 500 and Nasdaq Models remained neutral (in cash) for November as money supply growth continues to slow, Fed rate hikes continue, and the yield curve nears inversion.** All 19 international stock index Models are neutral, suggesting that global stocks have room to fall further.

- **The 30-Year Treasury Models remained long (lower yields) for November while the 10-Year Treasury and Corporate Investment Grade Models covered their long positions and went short (higher yields).** Investors looking to lock in the most attractive yields since 2011 should be aware that divergences like this often occur at major reversal points.

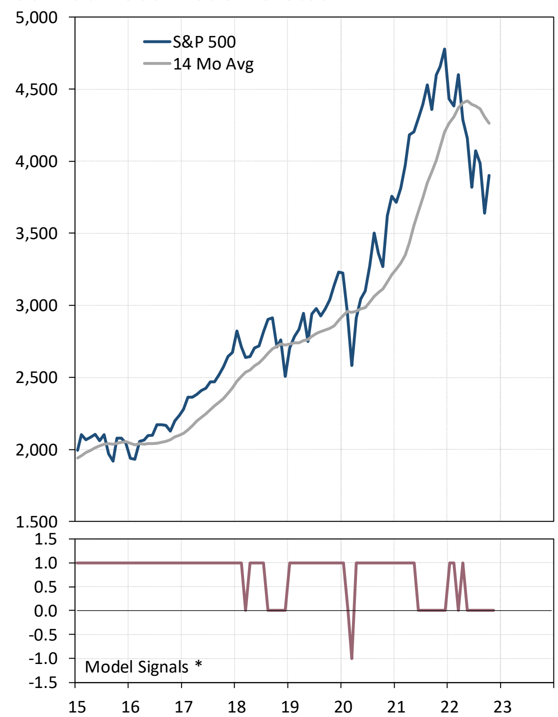
- **The Gold Model remained short as rising interest rates remained a strong headwind despite extremely favorable valuation.** Gold has fallen seven months in a row and is now on its longest monthly losing streak ever. The average 12-month return when gold prices previously dropped six months in a row was +18.1%. Longer-term investors should take advantage of near-record-low valuations and technical weakness to accumulate positions in precious metals and gold mining stocks.

- **The EUR/USD Model remained short the euro and the USD/JPY Model also remained long the US currency as US interest rates continue to rise faster than European and Japanese rates.**

## I. Equity Index Outlook

Despite last month's 8% rally in the S&P 500, the outlook for US equities remains negative. The Gamma S&P 500 and Nasdaq Models stayed neutral (in cash) for November (Chart 1). The negative outlook continues to be driven by rising interest rates, contracting liquidity, slowing earnings, and above-average valuation. The Federal Reserve increased rates 75 basis points at this week's meeting. Despite the rate hike, Fed Chairman Powell noted that "it is premature to be thinking about pausing." Of particular concern to the Federal Reserve is that yr/yr core inflation (excluding food and energy) hit a new cyclical high of 6.7% last month. The market currently expects that rates will peak early next year around 5-5.25%.

CHART 1
USA: S&P 500 Model Forecast



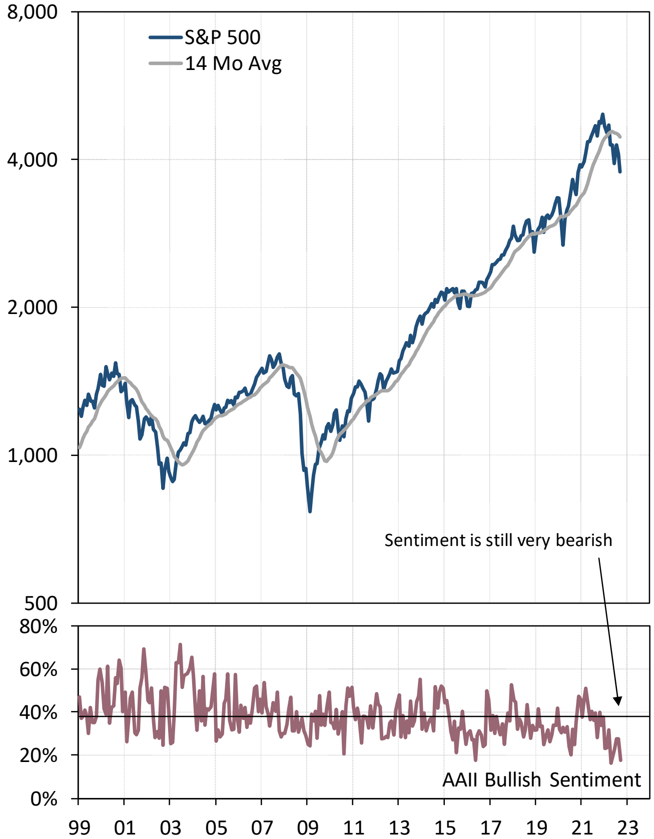

From a longer-term perspective, the question is how much of these impending rate hikes have already been discounted by the market. The Gamma Stock Index Model indicates that the effects of another 1-1.25% increase in the Fed Funds on money growth, the economy, and earnings growth have not yet been reflected in current equity prices. The Model indicates that stocks are likely to experience one more major leg down. At that point, the combination of improved equity valuation and declining long-term interest rates will set the stage for a major bottom.

*Positive Factors*

- Seasonals. US equity prices are now in the strongest six-month stretch of the year. This positive seasonal period has historically been even stronger during election years. The S&P 500 has averaged a 1.6% return in November since 1973. This positive seasonal may provide equities with some support despite the uniformly unfavorable fundamentals.
- Sentiment. AAII bullish sentiment hit a two standard deviation low of 17.7% in September. The extreme bearish sentiment contributed to October's rally as investor bargain hunting took advantage of some attractive company valuations. The rally caused bullish sentiment to improve to a less extreme 26.6% at the end of October, which is still below the 38.7% average. That may provide some support to stock prices as similar sentiment in the past has been associated with a 14.4% 12-month return on the S&P 500 (Chart 2).

CHART 2

**S&P 500 vs AAII Bullish Sentiment**






*Neutral Factors*

- Non-US equity valuation. As we have noted repeatedly in previous Reports, non-US equity indexes are a much better bargain than US indexes (Table 1). Our indicators show that the average non-US stock index is a whopping -34% undervalued. That includes countries like Australia (-49%), China (-65%), Germany (-52%), and Italy (-51%). Such extreme undervaluation may effectively put a floor under equity prices, since these markets may have already discounted very bearish fundamentals, especially in Europe. US stocks have historically had about 85% correlation with non-US equities. Cheap foreign stocks may help prevent a further sharp drop in US equity prices. The risk, however, is that the extreme undervaluation of non-US markets could also trigger a movement out of US equities into cheaper non-US markets to correct the divergence in valuations. This could result in additional selling pressure on US stocks over what would be expected from rising interest rates and slowing money and earnings growth.

TABLE 1

**STOCK INDEX VALUATION**

| Country | Valuation (σ) | Valuation (%) |
|---|---|---|
| United States | +0.90 | +18% |
| S&P 500 | +0.76 | +16% |
| Nasdaq | +0.89 | +25% |
| S&P 600 Small Cap | -1.16 | -19% |
| Canada | -1.59 | -27% |
| Brazil | -1.89 | -39% |
| Mexico | -0.72 | -11% |
| Australia | -2.09 | -49% |
| Japan | -0.10 | -4% |
| China | -1.77 | -65% |
| S. Korea | -1.19 | -27% |
| India | -0.42 | -8% |
| Europe | -2.01 | -46% |
| Germany | -2.46 | -52% |
| France | -0.84 | -18% |
| Italy | -2.09 | -51% |
| Switzerland | -2.13 | -42% |
| UK | -0.27 | -6% |
| Russia | -1.93 | -73% |
| S. Africa | -1.66 | -27% |

*Negative Factors*

- Short-term interest rates continue to rise. The Federal Reserve raised its Fed Funds rate another 75 bps at its November meeting to a 3.75-4% target range (Chart 3). The Fed has now raised rates six times this year for a total of 3.75% above the 0.25% Covid low. The Chicago Mercantile Exchange's FedWatch Tool also indicates that there is a 60/40 chance that the central bank will raise rates either 50 or 75 bps in December and another 25-50 bps each in February and March. The Fed has only raised rates 3.75% or more in a nine-month period twice since 1960. Both cases ended with a severe recession. The Fed continues to be motivated by the steady rise in the core inflation rates. Headline inflation peaked at a 9.0% yr/yr rate in August and has since eased to an 8.2% rate. Core inflation, however, hit a new cyclical high last month at 6.7%. The Fed is likely to raise rates until clearer signs emerge that inflation is in a downtrend. In that case, rates will likely peak at or above 5% early next year before the central bank pauses to assess whether even higher rates are necessary.

- The yield curve has effectively inverted. The 3-30 Treasury spread narrowed to only 10 bps following the Fed's November rate hike (Chart 3). The more widely followed (but we believe less reliable) 2-10 yield curve inverted in September and widened to 51 bps following the Fed's November rate hike. The inverted curve is likely to put further downward pressure on money growth. An inverted curve removes much of the incentive of banks to lend (which tend to fund their borrowing with short term money while lending longer-term at a higher interest rate).
- Money growth remains negative. Money growth continues to slide further into negative territory as a consequence of the flat/inverted yield curve. Real (inflation-adjusted) narrow money growth (TMS) slipped to a 3.3% yr/yr rate from 4.8% last month. The alternative narrow money measure, real M1, was down -6.2% yr/yr last month and has been negative for the past five months. The broader money measure, real M2, has also continued to contract. Real M2 was down -5.7% yr/yr in October. The measure turned negative in June and has steadily declined since then. The overall picture continues to be of contracting liquidity caused by rising rates which may accelerate after the November and (likely) December rate hikes.
- The Federal Reserve's portfolio is shrinking. The Federal Reserve continued down its path of "quantitative tightening" as its investment portfolio contracted an additional $38.9 bln in October (Chart 5). This follows on the heels of a $41.3 bln decline in August. Since the Fed first hiked rates in April, the central bank has been draining liquidity by lightening its holdings of Treasury securities and mortgages. The Fed has sold or allowed to run off about $107 bln of its $8.4 trillion portfolio. The contraction of the Fed's balance sheet drains liquidity from the financial system. The sale of securities causes money to flow out of the economy back to the Fed which contracts the total level of bank reserves. Bank reserves have shrunk sharply from a peak of $4.2 trillion in October 2021 to $3.1 trillion last month.

CHART 3
**Interest Rates: United States**

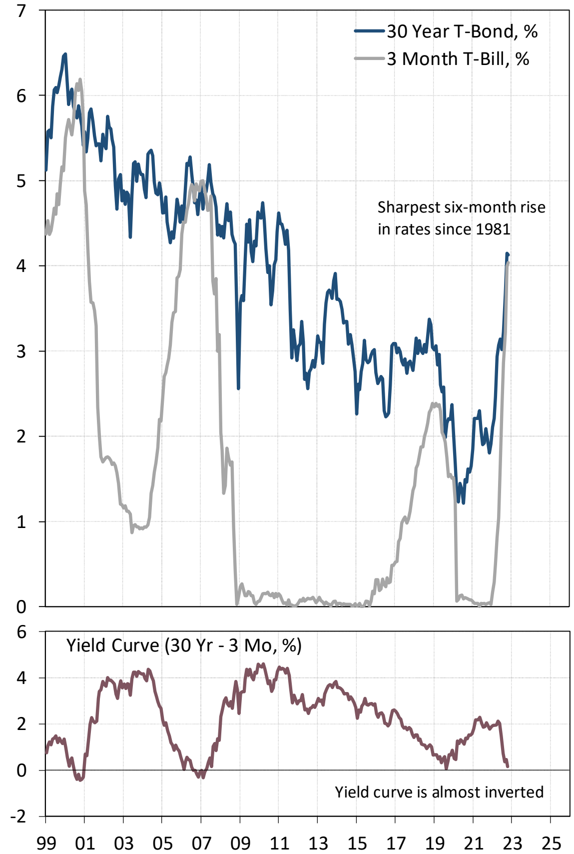
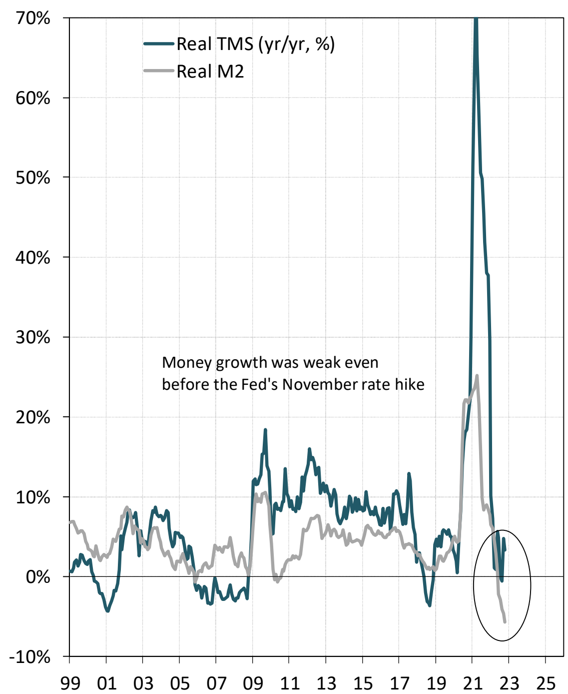



CHART 4
**Real True Money Supply and M2**



- Stocks are still overvalued. We have been emphasizing this for months. Despite the fact that the S&P 500 is down 18% from its December 2021 peak, equity prices remain stubbornly above fair value. Lower equity prices, all else equal, improve valuation. **The bond market has experienced its worst bear market in over 100 years.** As a result, long-term interest rates have rocketed to levels not seen 2011. Since equities and bonds are substitutes for each other in an investment portfolio, a rise in interest rates implies lower equity prices. An increase in bond yields must be met with either lower equity prices or higher earnings for valuation to remain steady. This is compounded by the fact that earnings growth has plummeted. 12-month trailing earnings growth has collapsed from a 68% yr/yr rate just eight months ago to only a 10% rate last month. Equity prices, however, have not fallen enough given the rise in interest rates and decline in earnings growth to bring valuation back to neutral. While valuation has improved since mid-2021, the S&P 500 according to the Gamma Valuation Model is still 16% overvalued. The Nasdaq is even worse at 25% overvaluation. As we have noted in previous Reports, the problem is that since 1970 stocks on average were 25% undervalued at the bottom preceding each new bull market. While many stocks, especially in the tech sector, have reached attractive levels, the market overall still has plenty of room to drop further before it can be considered attractively priced.
- Corporate earnings are rapidly slowing. 12-month trailing earnings growth on the S&P 500 has continued to slow (Chart 7). Yr/yr growth dropped to just 10% last month from 17% the previous month. That's down from a 68% rate as recently as February. The 12-month growth rate has dropped for eight months in a row, and earnings momentum has plummeted from an 83% to a -36% rate over the same period. The plus is that earnings are now roughly in line with the 8.3% average annual growth in US corporate earnings since 1974. The negative is that earnings are likely to drop further. The Conference Board's Index of Leading Economic Indicators (LEI) has fallen six months in a row, and the yr/yr change has been negative for the past two months. **The Gamma Economic VAR Model is predicting at least a moderate recession to begin by early 2023.** The result is likely to be a further slowing (or outright decline) in corporate earnings to below their long-term average.

CHART 5

**Federal Reserve Balance Sheet (Trillion $)**

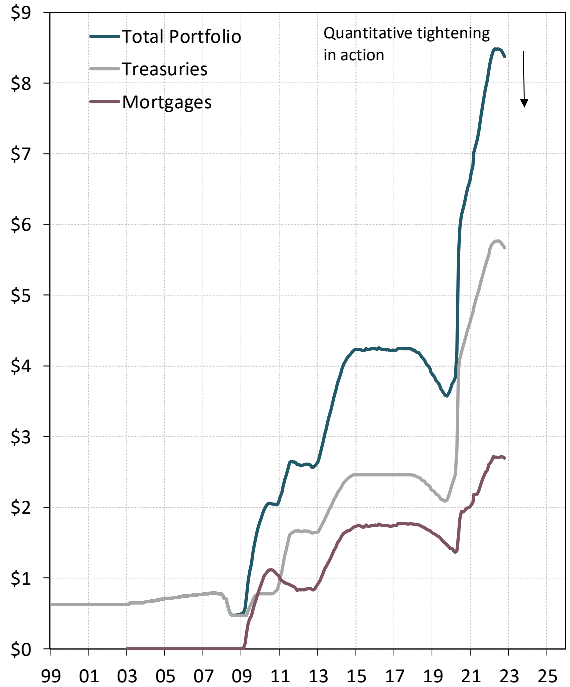
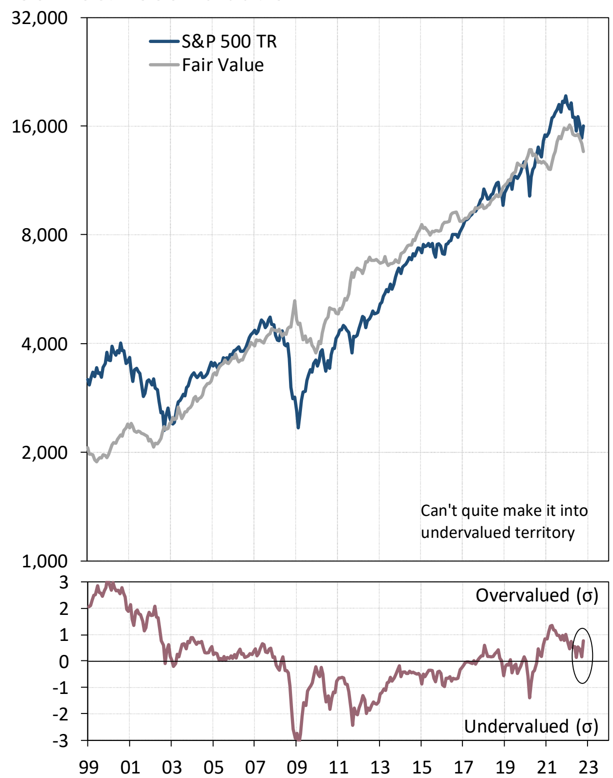



CHART 6

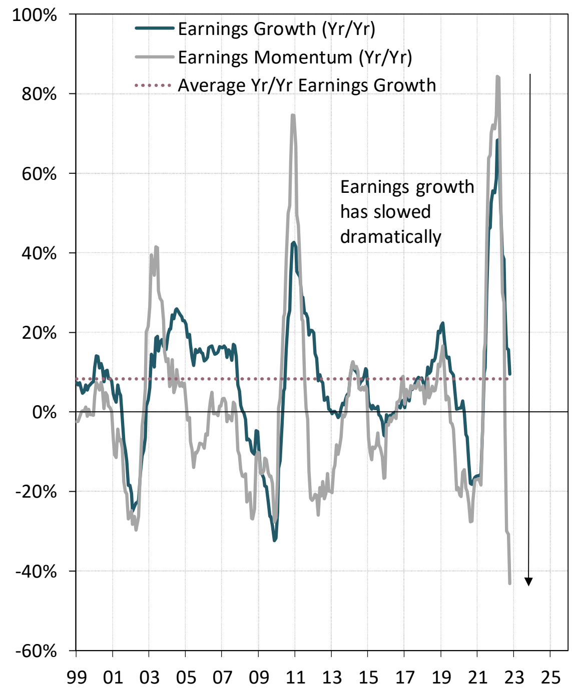
**USA: S&P 500 Valuation**




- A potential credit shock. Cracks have started to emerge in the ability of both governments and corporates to fund themselves and for central banks to conduct monetary policy. In the UK, British government bonds

(“Gilts”) suffered historic losses after the September 23rd release of Prime Minister Liz Truss's economic growth plan. The plan’s unfunded tax cuts unnerved markets enough to trigger the most extreme bout of volatility in the Gilt market in 30 years. The Bank of England, which had planned to launch its own version of “Quantitative Tightening,” was forced to suspend its plans in order to stave off a “material risk” to the financial system. The bond market's reaction was so violent that it forced the central bank to not only suspend its plans to sell bonds but to even resume buying temporarily. In the United States, Treasury officials have said that they will continue to assess whether or how to implement a program to buy back some of its existing bonds, a move partly aimed at improving liquidity in the Treasury market. The Treasury's plans come as liquidity in the world's largest bond market has deteriorated this year, partly in response to rapidly rising interest rates and the Fed’s liquidation of $107 bln of its investment portfolio. In China, a crisis in the country’s real estate sector has caused the value of loans underwritten by the country’s largest real estate firms to plummet to record lows. These events follow on last month’s news that Credit Suisse Group AG was facing stress in the credit default swap markets.

**CHART 7**
**US Total Market Earnings Growth**




The spread between high yield corporate debt and 10-year T-Notes narrowed to 5.04% last month from 5.89% at the end of September. The narrowing reflected an improved corporate outlook as a consequence of the October rally in equity prices. Given the Gamma Model’s outlook for stocks, however, we would expect credit spreads to widen further as the economy slows and credit distress increases. The failure of a major bank could have a contagious and cascading effect on other large banks, causing them to fail in an over-levered financial sector. The consequence could be a further contraction of liquidity as credit quality concerns curtail lending.

## II. Fixed Income Outlook

The Gamma 10-year Treasury and Investment Grade Corporate Models covered their October long positions and went short (higher yields) for November (Charts 8, 9). The 30-year Treasury bond Model remained long (lower yields). The divergence between the 10- and 30- year Model forecasts likely reflects signs that long-term rates are nearing a major peak ahead of a likely recession next year. With the Fed expected to raise rates another 1-1.25% before pausing in early 2023, short-term maturities are likely to bear the brunt of the rate hikes. Longer-term maturities will increasingly price in the next decline in rates as the economy slips into recession and inflationary pressure cools. We are likely to see additional choppiness over the next few months as markets process the combination of higher rates, shrinking Fed balance sheet, and the prospect of a weaker economy.

CHART 8

USA: 10 Yr T-Note Model Forecast

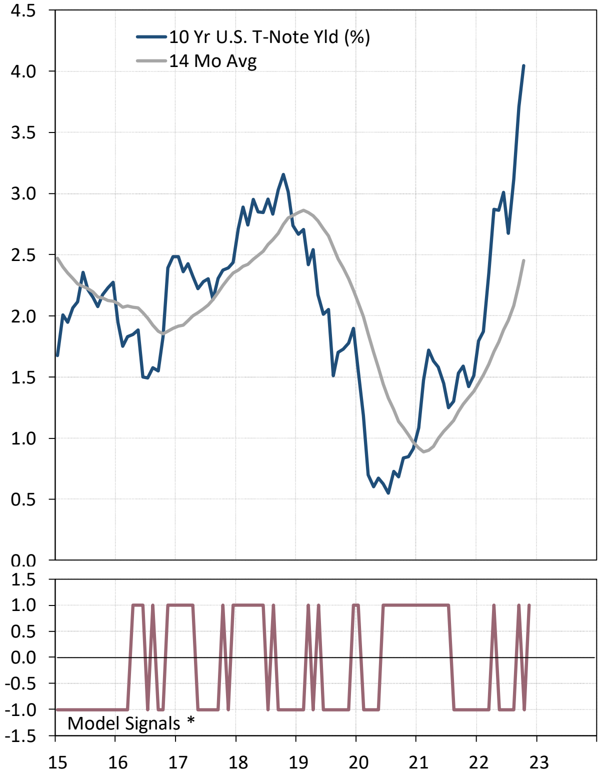
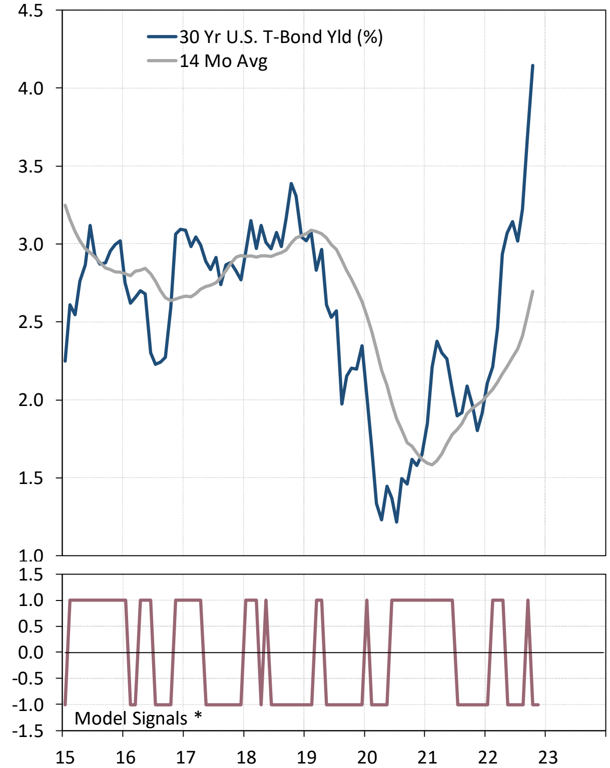



CHART 9

USA: 30 Yr T-Bond Model Forecast






### *Positive Factors*

TABLE 2

FIXED INCOME VALUATION

| Country | Debt Instrument | Yield Valuation (σ) | Price Valuation (%) |
|---|---|---|---|
| USA 2 | 2 Yr T-Note | +1.27 | -1.4% |
| USA 5 | 5 Yr T-Note | +1.29 | -4.3% |
| USA 10 | 10 Yr T-Note | +1.16 | -7.8% |
| USA 30 | 30 Yr T-Note | +0.95 | -14.7% |
| USA IG | IG Corporate | +1.28 | -5.3% |
| USA HY | HY Corporate | +0.11 | -1.3% |

- Bonds are undervalued. The 10- and 30-year Treasuries and investment grade corporates are all moderately *undervalued* (Table 2). The 30-year T-bond is still one standard deviations (σ) undervalued. The 10-year T-Note is 1.1 σ undervalued, and investment grade corporates are 1.3 σ undervalued. The Fed is still expected to raise rates three more times between now and next March. These rate hikes are likely to put additional downward pressure on the inflation rate. Bonds appear to be underestimating the odds of a recession next year and the implication for a steady decline in the inflation rate.
- Economic growth is slowing. While employment remains robust, other indicators point to emerging weakness. Yr/yr growth in the Conference Board's index of leading economic indicators turned negative in September and was down -0.9% in October (Chart 10). Our Gamma Economic VAR Model had previously predicted that the index would turn negative by October due to rising interest rates and slowing money growth. **Every recession since WW II has been preceded by a yr/yr decline in the index.** The index is expected to bottom at a -7.6% yr/yr rate by mid-2023 by which time the economy will be in a what we project to be a moderate recession. A broad-based recovery is not likely to begin until late 2023 or even early 2024. The OECD's leading indicator, which tends to turn earlier, has been negative since February. The OECD indicator is predicting a somewhat worse downturn, with the index not expected to bottom until the third quarter 2023. The economy is expected to slow rapidly by the end of the first quarter next year which will likely also be the peak in interest rates. Since bonds typically anticipate changes in Fed policy well in advance, long-term Treasury yields are likely to peak in the next 2-3 months. **Long term bond investors should take advantage of any sharp selloffs in bond prices to add to their core holdings.**

- Inflation has peaked. The Fed continues to focus on the core inflation rate, but the composite headline rate looks to have peaked (Chart 11). Consumer price inflation hit a 40-year high of 9.0% in August but has since declined to an 8.2% yr/yr rate. An increasing number of leading inflation indicators support that view. Raw industrial materials prices have dropped steadily for the last 12 months and were down -14.4% yr/yr in October. The S&P/Goldman Sachs Commodity Index was still up 9.0% yr/yr last month, but that was down from a 73% rate a year ago. Between 2009 and 2019, a 1% increase in the money supply raised consumer prices an average of 0.2%. Using that same relationship today, the current 11% annual growth rate in nominal True Money Supply (TMS) should be consistent with inflation eventually dropping to a 2-3% annual rate. A return to that rate may be hindered by the Biden's energy policy and the cutoff of Russian energy supplies. Nevertheless, the Gamma Economic VAR Model predicts that inflation will decline steadily (albeit slowly) through 2023, ending the year at a 6% yr/yr rate.
- Favorable seasonals. Long-term Treasury yields have historically recorded their largest monthly declines in November. The 30-year T-Bond has fallen an average of 7.5 bps in November since 1968. That pattern carries over into December before seasonals start to support higher yields from January through April.

*Negative Factors*

- "Quantitative Tightening." As mentioned above, even the small sale of bonds by the Bank of England and the Federal Reserve has flustered markets. Central banks globally bought massive amounts of government bonds during the Covid pandemic to help finance government spending. The result was that inflation in the major industrial countries surged to a 10.5% annual rate – the highest rate in 34 years. That buying, however, also prevented a spike in long-term rates as inflation rose. Central banks are now trying to put the genie back in the bottle by draining liquidity through sales of government bonds. While we anticipate a more favorable environment for bonds because of weaker economic growth, the removal of this support may push Treasury yields higher in the short-term as the Treasury raises yields to attract buyers for the $150+ bln of new debt being issued every month.

CHART 10
**Leading Economic Indicator Forecast**

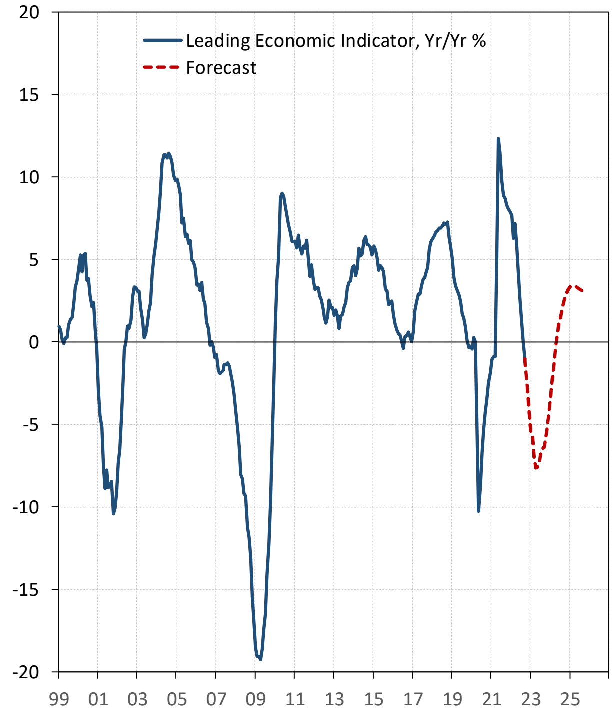
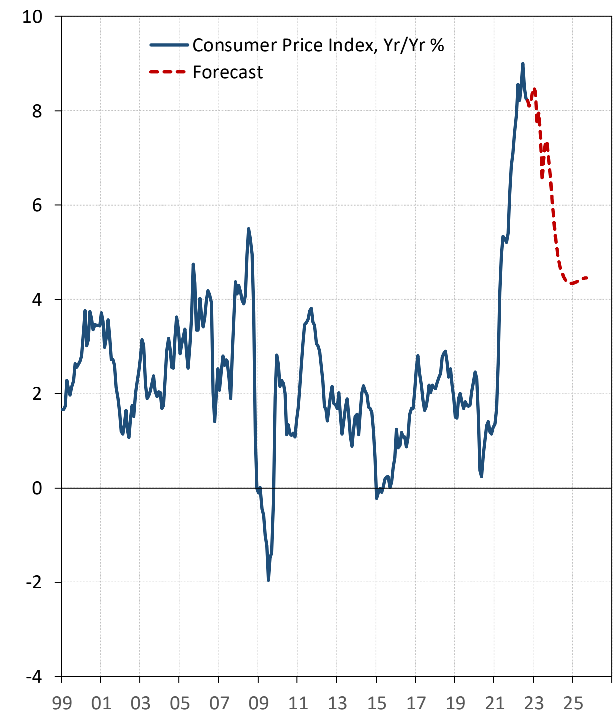
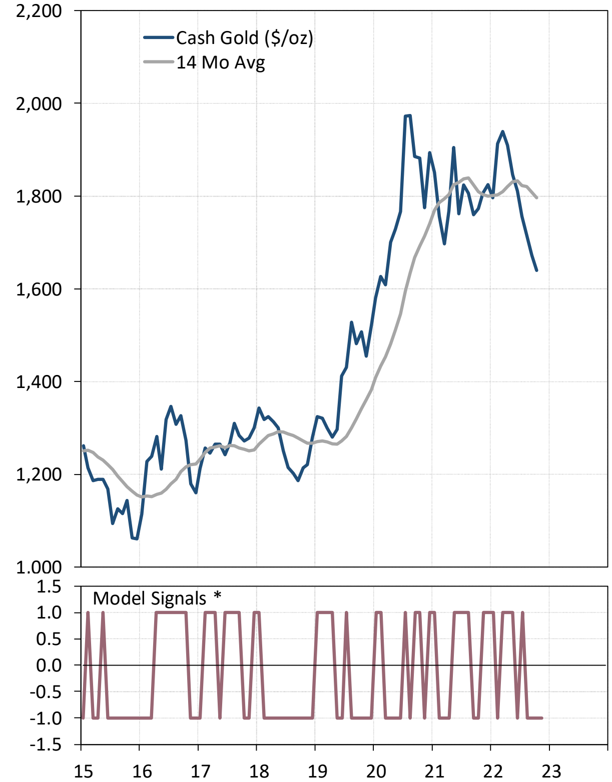



CHART 11
**Consumer Price Index (CPI) Forecast**



## III. Gold and Precious Metals Outlook

CHART 12
**Gold Model Forecast**




The Gamma Gold Model remained short for November as the precious metals continued to struggle in the face of contracting liquidity (Chart 12). The silver and platinum Models also remained short.

**Gold prices have now fallen seven months in a row – the longest monthly losing streak since 1973.** The precious metal continues to struggle in the face of the sharpest six-month rise in interest rates since 1981. Gold during that stretch in 1981 fell almost $150. Gold remains stuck between the negative short-term influence of rising interest rates and the positive long-term influence of extremely favorable valuation. Gamma's Valuation Model indicates that the metal is -53% undervalued; silver is a staggering -71% undervalued (Table 3). As we have noted for the last several months, **the combination of technical weakness and extremely attractive valuation in precious metals and gold mining stocks suggests that this may be a one of the most attractive periods in the last thirty years to accumulate positions for longer-term gains**. As we near the end of the Fed's tightening cycle, undervalued dollar substitutes such as precious metals, the Swiss franc, and crypto currencies could begin major rallies.

***Positive Factors***

TABLE 3
**PRECIOUS METALS VALUATION**

| Commodity (1) | Valuation (σ) | Valuation (%) |
|---|---|---|
| Gold | -2.25 | -53% |
| Silver | -2.07 | -71% |
| Platinum | -2.60 | -75% |
| Palladium | +0.08 | +3% |

- Negative real interest rates. As with valuation, negative real interest rates provide support for gold but are also not attractive enough to offset the negative impact of rising interest rates. This could change rapidly, however, when interest rates peak and start to decline as the economy slides into recession next year.
- Precious metals are incredibly cheap. **Our measures indicate that gold finished October 2.25 standard deviations undervalued, the most extreme level since August 1976 (Table 3)**. Silver is -2.1 standard deviations undervalued, and platinum is a whopping -2.6% standard deviations below fair value.

***Negative Factors***

- Tighter monetary policy. Precious metals tend to rally on expectations of looser monetary policy. The Fed, however, is still only about two-thirds of the way through its tightening cycle. Real money growth is negative, interest rates are rising, the Fed is contracting its balance sheet, and the 3-30 yield curve is flat – not a great combination for higher gold prices. Looking ahead, however, these same indicators point to weaker economic growth which implies a potential peak in interest rates early next year. Investor need to pay close attention to Fed policy. Any hint of a pause in rate hikes could send gold and other dollar substitutes soaring.
- Declining commodity prices. As noted above, raw industrial materials put in a major top in March and have continued to trend lower. All of our base metals Models (aluminum, copper, lead, nickel, tin, zinc) are currently short which indicates that economic weakness is spreading and deflating commodity prices. Investors should note, however, that gold tends to be the longest leading indicator of interest rate

movements and commodity prices. Waiting for rising commodity prices to confirm that gold is in a new bull market is likely to result in missing a large part of the new rally.

- Continued dollar strength. The dollar continues its astronomic climb against the euro and yen due to the Fed's relatively more restrictive monetary policy and geopolitical events that are encouraging USD capital inflows. The Gamma Models have been long USD against both the euro and yen since the middle of 2021 (Charts 13, 14). The Gamma FX Model predicts further dollar gains against both currencies though caution may be in order. Dollar overvaluation against the yen and Swiss franc, in particular, is reaching what are likely to be unsustainable levels that could quickly reverse when US rates peak.



## IV. Foreign Exchange Outlook

The Gamma EUR/USD Model remained long the USD for November as the European Central Bank (ECB) continues to play catch-up to the Federal Reserve (Chart 13). Eurozone consumer prices were up another record 9.9% yr/yr last month, the eleventh monthly record in a row and more than double the previous record high of 4.1% set in August 2008. Germany saw its consumer prices surge to a 10.4% yr/yr rate, the highest rate since 1951.

The cutoff of cheap energy from Russia is hitting the European economy with a massive microeconomic shock on top of inflation that was already soaring due to excessively loose monetary policy during the Covid pandemic. In contrast to the ECB, the Federal Reserve has had the ability to focus solely on bringing inflation back to its 2% target range given the relatively high level of US energy independence. The ECB has been forced to walk a tightrope balancing bringing inflation down against preventing an even more severe recession. As a result, the ECB has persistently lagged behind the Fed in raising rates which has sent the euro down to a 20-year low.

CHART 13

**EUR/USD Model Forecast**

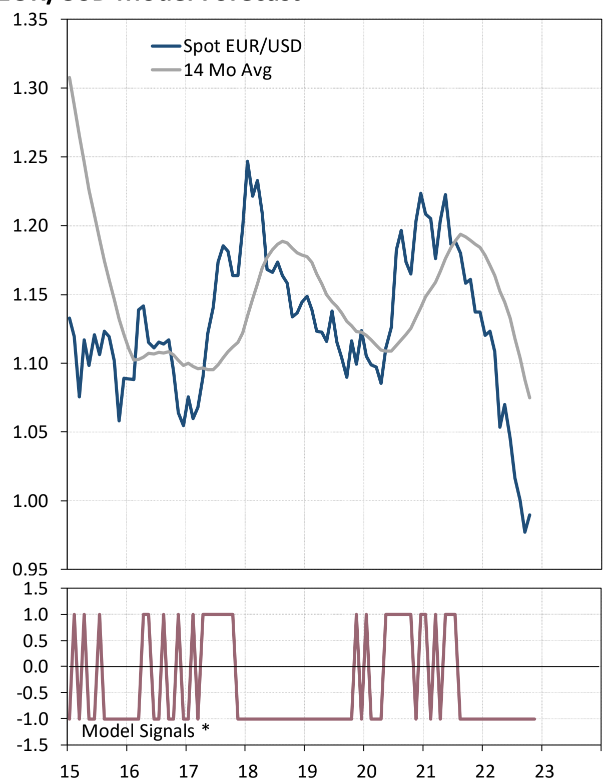
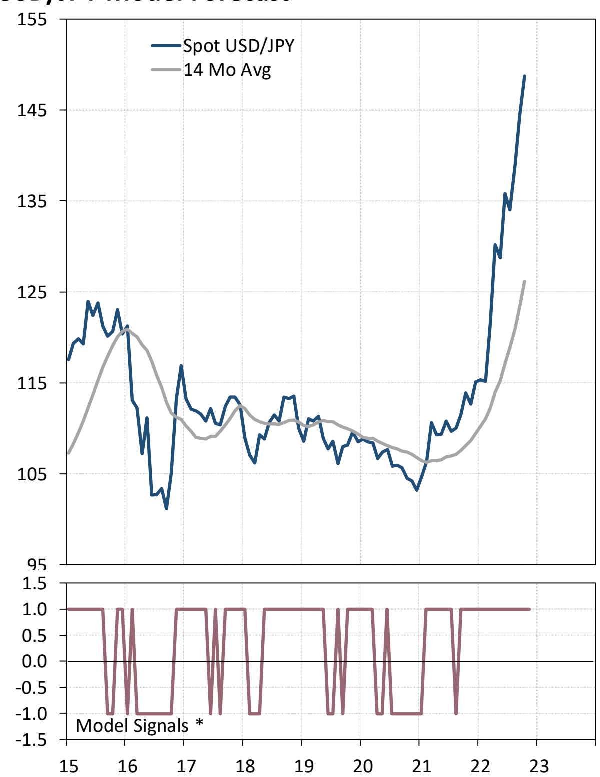



CHART 14

**USD/JPY Model Forecast**

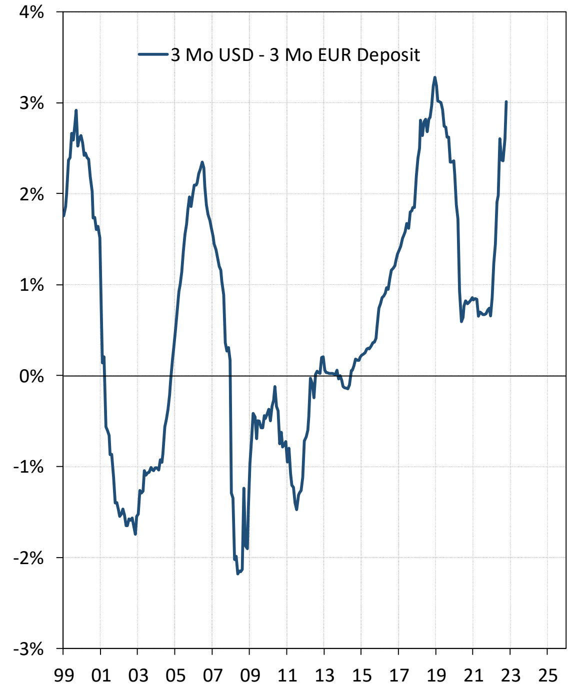


The ECB raised its deposit rate two weeks ago by an additional 75 basis points to 1.5% - the highest rate since 2009. The narrower differential with US rates was quickly neutralized by the Fed's own 75 basis point rate hike this week. The ECB also cut a key subsidy to banks in an attempt to force them to repay trillions of euros' worth of ECB loans early as a means of draining liquidity. The central bank also discussed how to wind down its huge holdings of mostly government bonds that is scheduled to begin in December.

A 75 basis point rate hike would normally be supportive for a currency. In this case, however, markets interpreted ECB President Christine Lagarde's comments that a "substantial" part of policy tightening is done as a sign that rates may not go as high as previously thought. Investors now see rates peaking at around 2.6% next year, below recent expectations of 3%. The result was another selloff in the euro, though not below the most recent lows.

CHART 15

**3 Month Interest Rate Differential**




***Positive USD Factors***

- Interest rate differential in favor of the dollar. Both short- and long-term interest rate differentials moved even further in favor of the dollar following the Fed's recent rate hike (Chart 15). The three-month interest rate differential widened to 3.14%, the second widest spread since the introduction of the euro in 1999. The long-term interest rate differential also widened from 166 to 196 bps. The relative yield curve differential, a relative measure of monetary tightness, also moved further in favor of the dollar.
- Favorable dollar valuation. According to the Gamma Valuation Model, despite a 25% decline in the euro from its December 2020 peak, the dollar is still 37% *undervalued* (a record 3.1 standard deviations) largely due to the wide inflation and interest rate differentials (Table 4).
- Inflation differential (Purchasing Power Parity). While the market has focused on relative monetary policies, the relative movement in producer prices between the Eurozone and the US has been at least as important in driving the euro lower (Chart 16). Relative producer prices have reversed twenty years of gains against the dollar since the middle of 2021. With European energy prices soaring, the differential in producer price inflation between Germany and the United States has exploded. US producer prices over the last 12 months have risen 11.5% while German prices have soared 45.8%.

TABLE 4

**FX VALUATION**

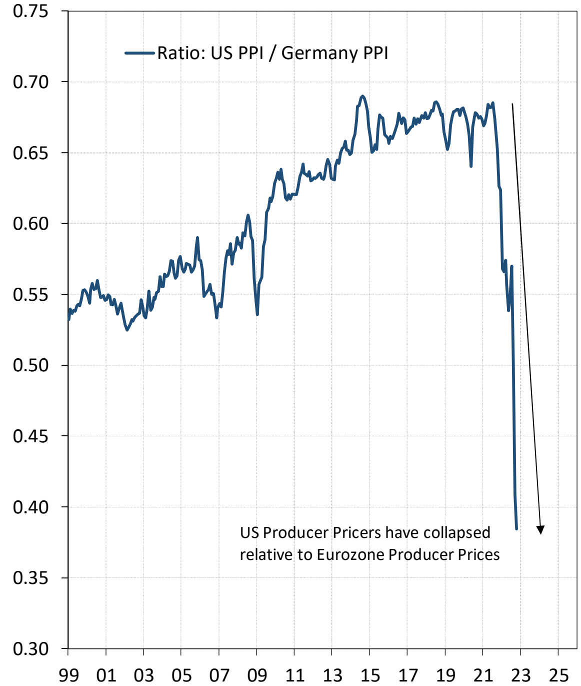
| FX Rate | Valuation (σ) | Valuation (%) |
|---|---|---|
| EUR/USD | +3.10 | +37% |
| GBP/USD | -1.40 | -15% |
| USD/CHF | +1.63 | +21% |
| USD/NOK | +1.25 | +12% |
| USD/SEK | +1.41 | +19% |
| USD/RUB | -0.53 | -8% |
| USD/JPY | +3.41 | +53% |
| AUD/USD | -0.71 | -11% |
| NZD/USD | -0.96 | -15% |
| USD/KRW | +1.51 | +9% |
| USD/CNY | +0.36 | +1% |
| USD/INR | +0.80 | +11% |
| USD/SGD | -1.34 | -6% |
| USD/CAD | +0.91 | +6% |
| USD/BRL | +0.36 | +4% |
| USD/MXN | -1.01 | -5% |
| USD/ZAR | -0.28 | -7% |

***Negative USD Factors***

- A contrarian view. Just as no tree grows to the sky, no major currency stays in a perpetual bear market. The euro is currently dealing with a perfect storm of bearish news. Despite a tendency of markets to extrapolate this bad news indefinitely into the future, at some point the factors behind the euro's meltdown will start to improve. European countries are realizing that their "green energy" dream is turning into a nightmare. Steps will almost certainly be taken to ensure more stable and reliable energy sources whether nuclear from France or natural gas from the Middle East or Norway. Also, the US is in the late stages of

CHART 16

Purchasing Power Parity




raising interest rates. The most likely scenario calls for US interest rates to peak early in 2023 with a recession following thereafter. A stabilization or reversal of the interest differential between the US and the Eurozone would go a long way to providing the euro with support. None of these will happen overnight, but the fact that the dollar is extremely overvalued against gold, the Swiss franc, and the Japanese yen suggests that the euro has room to recover when US rates peak.



-Karl Chalupa

Mr. Chalupa is the CEO and Co-Founder of Gamma Investment Consulting and Editor of the Gamma Intelligence Reports. He is also President of Gamma Capital LLC, a quantitative global macro investment firm. Mr. Chalupa developed the Gamma Investment Program used for previously trading the firm's $400 million global macro program. He was previously Director of Risk Management at Titan Advisors LLC, a $4.5 billion alternative investments firm. Mr. Chalupa was also Managing Director of the Currency and Alternative Investment Strategies Groups at State Street Global Advisors (SSGA) where he developed a $9 billion currency overlay program and launched SSGA's first hedge fund based on his Gamma Model. Mr. Chalupa spent 13 years at ABN Amro Bank where he traded interest rate and currency derivatives and was Manager of the Proprietary Trading and Economic Research Desk. He began his career as an economist for the Federal Reserve Bank of Chicago. Mr. Chalupa holds an MA in Economics from Brown University, graduated magna cum laude from Northern Illinois University with BAs in Economics and Political Science, and is Series 3 registered.

# Gamma Macro Model Forecasts for November 2022

TABLE 1

1 MONTH STOCK INDEX MODEL FORECASTS (%)

| Country | Stock Index | Price | 1 Mo Forecast | Previous Forecast | Position | Trade | Updated |
|---|---|---|---|---|---|---|---|
| USA | S&P 500 | 3,901.06 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| USA | Nadaq | 10,979.40 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Canada | S&P/TSX 60 | 1,180.12 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Mexico | IPC | 49,472.12 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Brazil | Bovespa | 116,079.12 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Japan | TOPIX | 1,929.43 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Australia | S&P/ASX 200 | 6,863.50 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| S. Korea | KOSPI | 2,293.61 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| China | Hang Seng CEI | 4,938.56 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| China / HK | Hang Seng | 13,286.41 | 0.00% | 0.08% | Neutral | Cover Long | 10/31/22 |
| India | Nifty 500 | 15,424.00 | 0.00% | 0.02% | Neutral | Cover Long | 10/31/22 |
| Eurozone | STOXX 600 | 412.49 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Germany | DAX | 13,286.41 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| France | CAC 40 | 6,281.03 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Italy | FTSE/MIB 30 | 22,675.68 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Switzerland | Swiss Market | 10,820.90 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| UK | FTSE 100 | 7,117.25 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| Russia | RTS 50 | 1,109.63 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |
| S. Africa | FTSE/JSE 40 | 60,134.55 | 0.00% | 0.00% | Neutral | Hold | 10/31/22 |

TABLE 2

1 MONTH FIXED INCOME MODEL PRICE CHANGE FORECASTS (%)

| Country | Debt Instrument | Current Yield (%) | Price Change Forecasts (%) 1 Month | Previous | Bond Position | Trade | Updated |
|---|---|---|---|---|---|---|---|
| USA | 2 Yr T-Note | 4.49 | 0.45% | 0.80% | Long | Hold | 10/31/22 |
| USA | 5 Yr T-Note | 4.24 | -0.01% | 0.30% | Short | Cover Long & Sell | 10/31/22 |
| USA | 10 Yr T-Note | 4.05 | -0.05% | 0.33% | Short | Cover Long & Sell | 10/31/22 |
| USA | 30 Yr T-Note | 4.15 | 1.54% | 1.55% | Long | Hold | 10/31/22 |
| USA | IG Corporate | 5.93 | -0.22% | 0.58% | Short | Cover Long & Sell | 10/31/22 |
| USA | HY Corporate | 8.92 | 0.17% | 0.04% | Long | Hold | 10/31/22 |
| Canada | 10 Yr Govt | 3.25 | 0.05% | 0.79% | Long | Hold | 10/31/22 |
| Mexico | 10 Yr Cetes | 9.74 | -0.08% | -0.30% | Short | Hold | 10/31/22 |
| Brazil | 10 Yr Govt | 12.03 | 1.38% | 1.88% | Long | Hold | 10/31/22 |
| Japan | 10 Yr JGB | 0.25 | 0.02% | 0.04% | Long | Hold | 10/31/22 |
| Australia | 10 Yr Govt | 3.83 | 0.21% | 0.64% | Long | Hold | 10/31/22 |
| S. Korea | 10 Yr Govt | 4.26 | 0.86% | 1.32% | Long | Hold | 10/31/22 |
| China | 10 Yr Govt | 2.65 | 0.14% | 0.22% | Long | Hold | 10/31/22 |
| India | 10 Yr Govt | 7.45 | 0.54% | 0.58% | Long | Hold | 10/31/22 |
| Germany | 10 Yr Bund | 2.13 | -1.15% | -3.07% | Short | Hold | 10/31/22 |
| France | 10 Yr OAT | 2.66 | 0.72% | 0.40% | Long | Hold | 10/31/22 |
| Italy | 10 Yr BTP | 4.25 | -0.29% | -0.63% | Short | Hold | 10/31/22 |
| Switzerland | 10 Yr Conf | 1.08 | 0.34% | 0.25% | Long | Hold | 10/31/22 |
| UK | 15 Yr Gilt | 3.86 | 1.19% | 0.18% | Long | Hold | 10/31/22 |
| Russia | 10 Yr Govt | 9.85 | -4.33% | -4.87% | Short | Hold | 10/31/22 |
| S. Africa | 10 Yr Govt | 10.87 | 0.25% | 0.38% | Long | Hold | 10/31/22 |

# Gamma Macro Model Forecasts for November 2022

**TABLE 3**

**1 MONTH FX MODEL FORECASTS (%)**

| Currency | Spot FX Rate | 1 Mo Forecast | Previous Forecast | Position | Trade | Updated |
|---|---|---|---|---|---|---|
| EUR/USD | 0.9897 | -1.65% | -3.42% | Short | Hold | 10/31/22 |
| GBP/USD | 1.1505 | -1.15% | -1.77% | Short | Hold | 10/31/22 |
| USD/CHF | 1.0017 | 1.87% | 2.16% | Long | Hold | 10/31/22 |
| USD/NOK | 10.4024 | 1.46% | 2.72% | Long | Hold | 10/31/22 |
| USD/SEK | 11.0302 | 1.70% | 2.33% | Long | Hold | 10/31/22 |
| USD/JPY | 148.73 | 1.22% | 0.99% | Long | Hold | 10/31/22 |
| AUD/USD | 0.6379 | -0.79% | -0.48% | Short | Hold | 10/31/22 |
| NZD/USD | 0.5787 | -0.93% | -0.40% | Short | Hold | 10/31/22 |
| USD/KRW | 1,428.66 | 0.77% | -0.49% | Long | Cover Short & Buy | 10/31/22 |
| USD/CNY | 7.3010 | 2.06% | 1.30% | Long | Hold | 10/31/22 |
| US/INR | 82.77 | 1.09% | 0.52% | Long | Hold | 10/31/22 |
| USD/SGD | 1.4157 | 0.79% | -0.30% | Long | Cover Short & Buy | 10/31/22 |
| USD/CAD | 1.3662 | 0.67% | -0.02% | Long | Cover Short & Buy | 10/31/22 |
| USD/BRL | 5.2153 | -8.09% | 0.17% | Short | Cover Long & Sell | 10/31/22 |
| USD/MXN | 19.84 | 0.18% | 0.09% | Long | Hold | 10/31/22 |
| USD/RUB | 61.59 | -1.53% | -0.54% | Short | Hold | 10/31/22 |
| USD/ZAR | 18.34 | 1.90% | 1.40% | Long | Hold | 10/31/22 |
| BTC/USD | 20,331.90 | 17.72% | 21.62% | Long | Hold | 10/31/22 |

**TABLE 4**

**1 MONTH COMMODITY PRICE FORECASTS (%)**

| Commodity | Cash / Futures Price ($) | 1 Month Forecast | Previous Forecast | Position | Trade | Updated |
|---|---|---|---|---|---|---|
| Gold | 1,639.33 | -1.82% | -1.79% | Short | Hold | 10/31/22 |
| Silver | 19.17 | -3.02% | -3.44% | Short | Hold | 10/31/22 |
| Platinum | 934.40 | -3.57% | -2.78% | Short | Hold | 10/31/22 |
| Palladium | 1,837.72 | -9.00% | 3.23% | Short | Cover Long & Sell | 10/31/22 |
| Aluminum | 2,200.74 | -3.28% | -3.13% | Short | Hold | 10/31/22 |
| Copper | 7,619.00 | -2.00% | -3.43% | Short | Hold | 10/31/22 |
| Lead | 2,003.50 | -3.19% | -3.69% | Short | Hold | 10/31/22 |
| Nickel | 22,020.50 | -1.78% | -1.70% | Short | Hold | 10/31/22 |
| Tin | 18,130.00 | -4.47% | -3.46% | Short | Hold | 10/31/22 |
| Zinc | 2,855.90 | -1.98% | -3.10% | Short | Hold | 10/31/22 |
| WTI Crude Oil | 85.61 | -7.23% | -2.80% | Short | Hold | 10/14/22 |
| HH Natural Gas | 5.36 | -6.39% | 0.78% | Short | Cover Long & Sell | 10/20/22 |

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