Macro Intelligence Report

June 2023

GAMMA INVESTMENT CONSULTING

Gamma Global Macro Model Highlights

- **The S&P 500 and Nasdaq Models remained neutral (in cash) for June**. Despite last month's 10.6% jump in tech stocks, the outlook for the overall market remains bearish. Contracting liquidity, declining earnings, overvaluation, and spreading signs of economic weakness are keeping the Model out of the market.

- **The 10-year and 30-Year Treasury Models remained short (higher yields) for June. The Corporate Investment Grade Model, however, remained long (lower yields) due to very attractive valuation.** The combination of stubbornly high core inflation and an expected $600 billion surge in Treasury borrowing now that the debt ceiling has been raised points to further upward pressure on long term interest rates.

- **The Gold Model covered its long position and went neutral for June.** Attractive valuation is continuing to support gold prices. The lack of progress in reducing the core inflation rate, however, is increasing the odds of more interest rate hikes which is putting a damper on gold's recent rally.

- **The EUR/USD Model covered its long euro position and went short for June.** The euro had been supported the last several months by a narrowing interest rate differential against the dollar, but signs that the Fed is not done raising rates has provided renewed strength for the dollar.

I. A Few Comments on the Debt Ceiling Increase

Washington is engaging in a round of self-congratulation at passing a $4 trillion increase in the debt ceiling. Let's do a quick post mortem to see if anything good came from this.

Both parties are arguing that they prevented a "catastrophic" default that would have plunged the economy into "the worst recession since the Great Depression." Hmmm. Let's deal with the default issue first. Let's be extremely clear on this point. There was effectively zero chance that the Federal government would default on principal or interest payments. Why? Three reasons. First, the debt ceiling only applies to issuance of NET NEW DEBT. The government could issue new debt to replace any maturing debt. No default on principal could occur because the maturing debt would be replaced by new debt. Second, the rise in interest rates since early 2022 has already added at least $130 billion to the government's interest expense. A default would further increase the cost of borrowing by increasing the perceived risk of holding U.S. debt - something that the Treasury cannot afford given the prospect of multi-trillion-dollar budget deficits as far as the eye can see. Third, the Federal government is obligated to make payments. The 14th Amendment states that "the validity of the public debt of the United States, authorized by law, …. shall not be questioned."

The government has more than enough tax revenues to make these payments indefinitely. In fact, tax revenues in 2022 reached an all-time high so the problem is not having enough money (Chart 1). While it's true that the government might have to lay off workers or reduce discretionary payments (gasp), the Constitution is clear on ensuring that U.S. debt is paid. The Biden Administration might have tried to force the Republicans' hand by threatening to delay scheduled interest and principal payments, but that would have immediately landed in the Supreme Court. The Court would almost certainly have ruled that debt payments take precedent over other discretionary government spending.

Now that we've addressed the political hysterics, let's discuss whether the debt ceiling increase actually accomplishes anything of value. To summarize, the Republicans get an essentially unenforceable agreement to cap spending for the next two years and a "whopping" net $12 billion in spending cuts from the "temporary" $2.4

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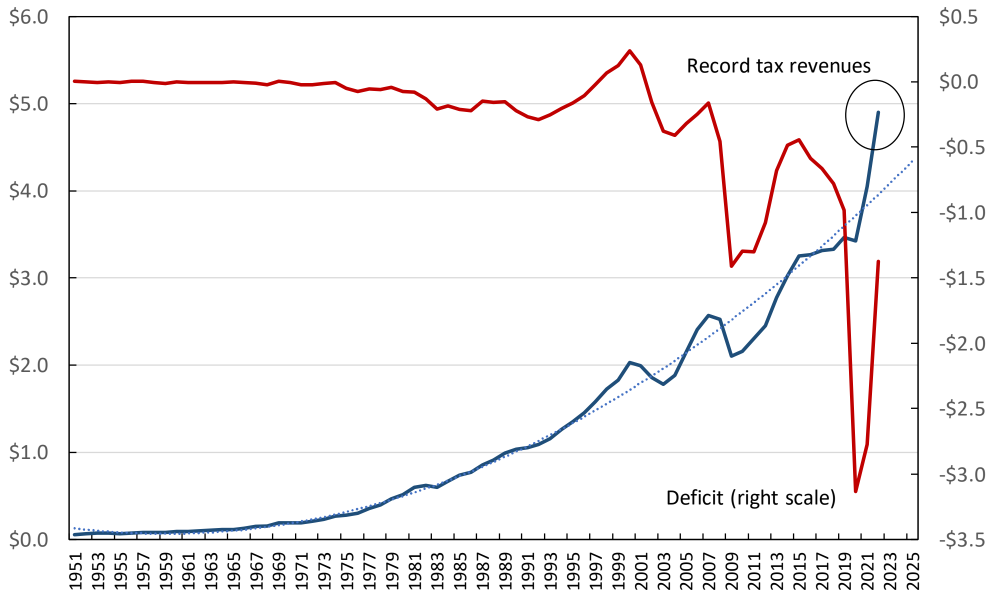
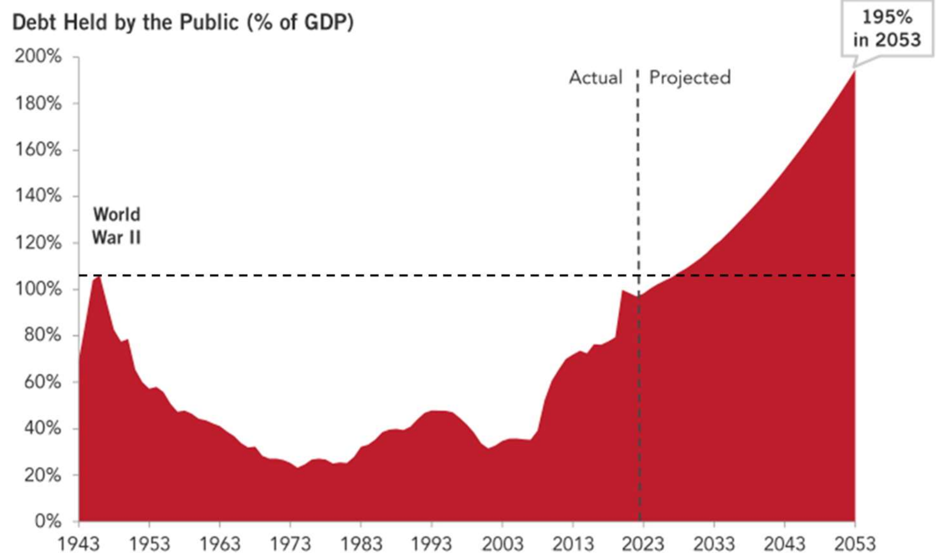
trillion orgy of Covid spending. The Democrats get to finance $4 trillion of additional spending through new debt (added to the $31 trillion already outstanding), preserve all of the $1.2 trillion crony subsidies that make up the so-called Inflation Reduction Act and, wait for it, 87,000 new IRS agents to further harass U.S. taxpayers (though to be fair, this is delayed for a year). Who do you think won this negotiation?

CHART 1



Next, let's look at the implications for the economy. First, government spending is completely out of control. Despite tax revenues at record highs, the Congressional Budget Office (CBO) projects annual budget deficits rising steadily over the next 10 years from $1.6 trillion in 2024 to $2.9 trillion in 2033. The CBO projects that the annual budgetary shortfall will not fall below 5 percent of GDP in any year between now and 2033. Total debt held by the public (not counting debt held by the Social Security Trust Fund) is projected to soon top the WW II peak (Chart 2).

CHART 2



Second, as the debt accumulates, an increasing share of the federal budget will be allocated just to paying interest on the national debt. In 2022, the federal government spent over $400 billion on interest alone on debt held by the public ($724 billion including Social Security payments). The cost of servicing the national debt will rise steadily both as a percent of GDP and as a percent of the federal budget (Chart 3)

Third, and most importantly, the massive debt

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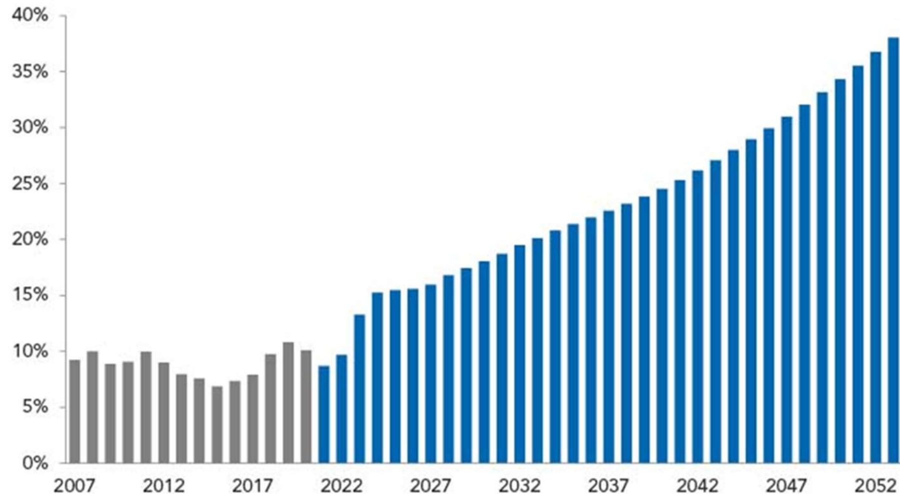
being accumulated is rapidly causing real economic growth to slow while at the same time boosting the inflation rate. Recall from Econ 101 that economic growth is a function of labor hours worked, labor productivity (training, education), capital investment (machinery, tools, structures), natural resources (lumber, iron ore, energy, etc,), and technology (ideas, innovation).

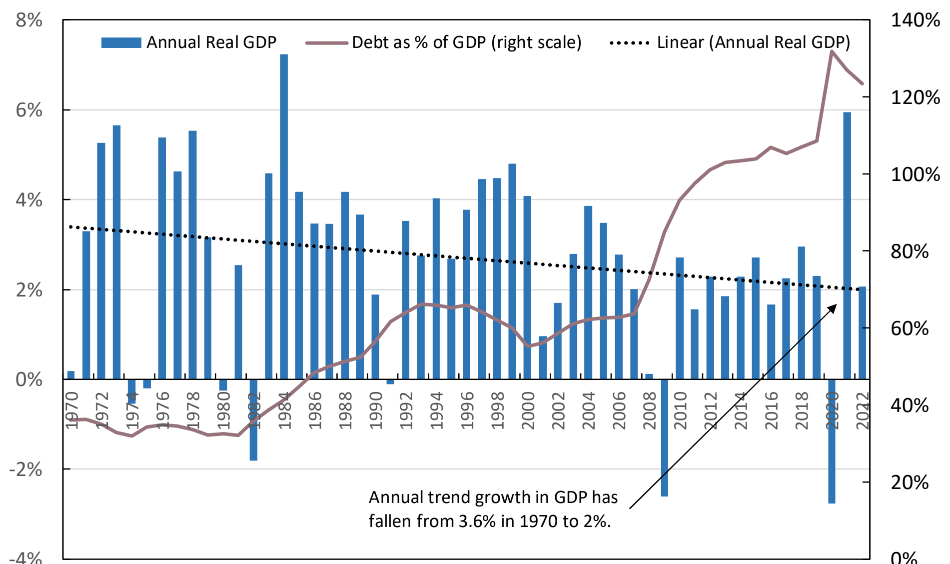
CHART 3



As the deficit increases, more capital is channeled away from productive investment to current consumption and into a bureaucracy whose regulatory burden further reduces economic growth. Chart 4 illustrates the inverse relationship between the federal debt and economic growth.

Trend real economic growth has fallen from a 3.5% annual rate in the 1970's to only 2% since the 2009 recession. Most of the reduction has occurred since debt ballooned from 63% of GDP in 2007 to 103% in 2013. With the debt burden expected to rise steadily, it has set in motion a vicious circle of slower growth which reduces tax revenues at a time when Social Security, Medicare, and Medicaid payments are set to explode higher. Numerous economists have estimated that the "gap" between expected revenues and spending on these "entitlement" programs could be as high as $150 TRILLION over the next 30 years.

CHART 4



The vast majority of people are not even aware of the impact of slower growth on their standard of living because it occurs over a relatively long time period. Consider a single 25-year-old earning $50,000 a year. If his real (inflation adjusted) earnings grow at the current 2% GDP growth rate, he will earn (in real terms) about $3.1 million over the next 40 years. That same person whose income grows at the 3.5% average growth between 1950 and 2000 would

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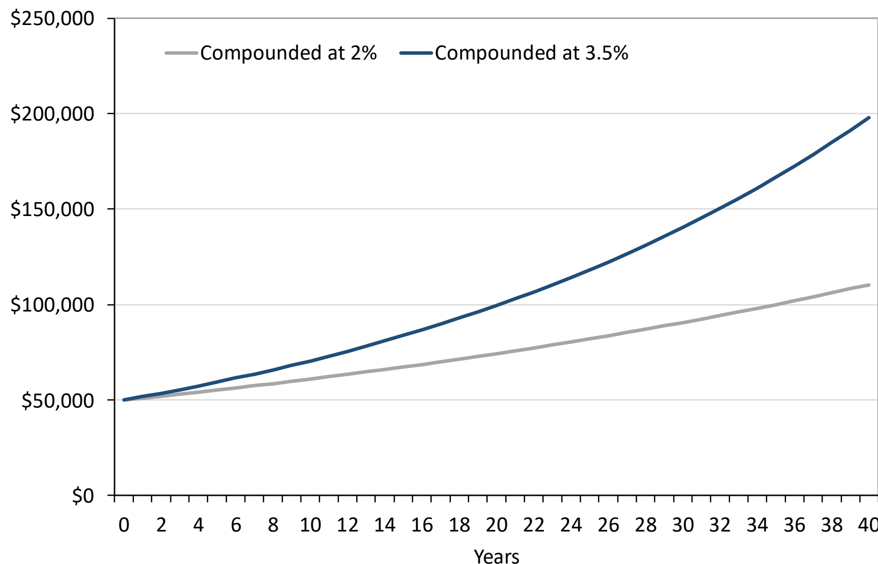
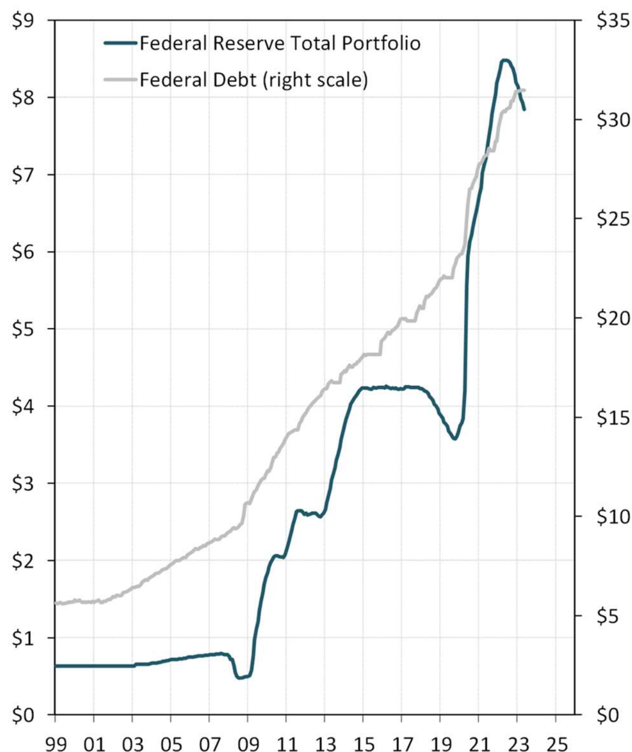
earn $4.4 million in real terms – an increase of $1.3 million (Chart 5). That is the equivalent of 3.3 houses based on the current median single-family home price!



And that's not all. At the lower growth rate, the federal government would receive $300,000 less in tax revenues over that 40-year period based on the current average 13.6% income tax rate. <u>Increasing debt beyond current levels actually reduces tax revenues by slowing growth in real income</u>.

The other implication is a higher inflation rate. While slower trend GDP growth does not necessarily imply higher inflation, the tendency of the Federal Reserve to monetize the Treasury's borrowing with new money creation does. Chart 6 shows the relationship between Fed purchases of Treasury securities and the total amount of debt outstanding. Of the $19.3 trillion in net new borrowing by the federal government since 2009, $4.5 trillion - over 23% - has been purchased by the Federal Reserve. The Fed now owns over a third of the Treasury's debt, all of it paid for with new money creation. The purchase of over $4 trillion in debt since December 2019 was directly responsible for the surge in inflation to a 40 year high of 8.9% in mid-2022.



The Federal Reserve has likely already realized, at least internally, that the magnitude of government borrowing will force them to buy an increasing share of government debt. The implication is that the Fed will have to tolerate a higher inflation rate than the current 2% target rate. Several regional Federal Reserve presidents recently signaled an openness to examining whether 2% (vs 3%) is the right target for the inflation rate. This is likely the first warning to financial markets that 2% inflation will be inconsistent with the amount of government debt that the Fed has to buy with new money in order to prevent major cuts in spending.

The other side effect of the Fed purchasing huge swaths of Treasury debt is the negative impact on the economy and financial markets when the Fed pulls back as a buyer. The Fed's sale of Treasuries in 2008, 2010, 2012, and 2018-2019, and 2022-2023 all triggered slower economic activity and lower stock prices. As a result, fluctuations in the economy and financial markets are increasingly being tied to the Fed's willingness to monetize

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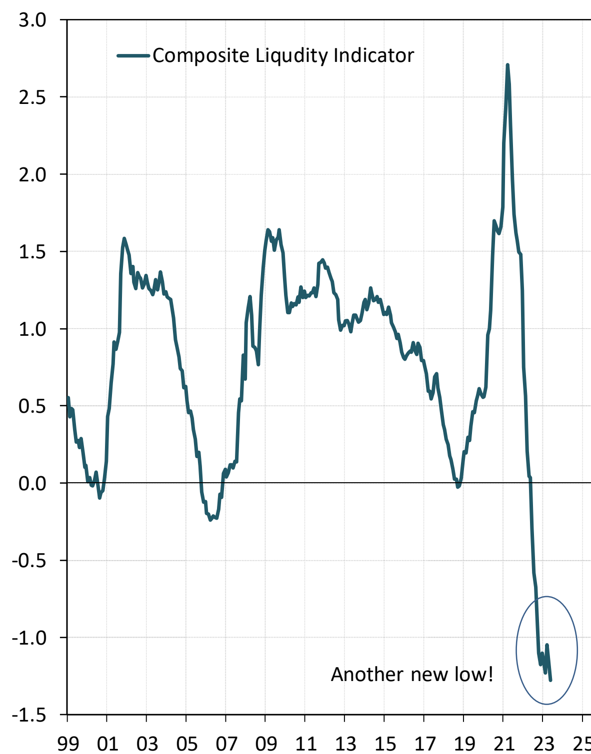
substantial portions of the Treasury's debt. As government debt grows as a percent of GDP, this relationship is likely to become more pronounced and more volatile.

Clearly the "best and the brightest" in government haven't thought this one through. Targeting a 3% inflation rate might reduce the need for politically painful budget cuts. It would also, however, send a message to financial markets that interest rates should be 100 basis points higher because of the higher targeted inflation rate. The Treasury is already being adversely affected by higher interest costs on its borrowing. Higher interest rates since the Fed started tightening in early 2022 have already increased the cost of servicing the Treasury's debt by $130 billion over the CBO's forecasts (Chart 3). Tolerating a higher inflation rate might allow the Fed to buy more Treasuries, but the Treasury would be selling them at a higher yield which would largely offset any benefit from monetizing the debt. Moreover, increased tolerance for higher debt as a percent of GDP would further erode economic growth resulting in even lower tax revenues. Very rarely does trying to fix one stupid action with another stupid action have a good outcome.

II. Equity Index Outlook

The equity markets continue to hang tough despite the Gamma Liquidity Indicator signaling the most severe liquidity contraction since 1980 (Chart 7). The S&P 500 edged up 0. 3% in May and now stands just -12% below its all-time high. Most of the gains were in a handful of stocks, however, as less than 25% of the S&P 500 stocks were up during the month. Tech stocks were the big performers as the Nasdaq climbed 5.6%. The Technology sector led the way with a 10.6% jump followed by Communication stocks which rose 8.9%. Markets were supported by resolution of the debt ceiling issue and another strong 339,000 increase in May payrolls. Despite this, the Gamma Equity Models for the S&P 500 and the Nasdaq stayed neutral (in cash) for May as the fundamentals remain bearish (Chart 8).

CHART 7
Gamma Liquidity Indicator



Positive Factors

- **Labor Market Remains Robust**. 339,000 jobs were created in May. 850,000 jobs were created over the past three months, pushing the number of payroll-type jobs to a record 156.1 million. The three-month average, which smooths out the month-to-month variability, is still above the average growth rate of the 2012-2019 period despite ten rate hikes since February 2022. Large revisions in the employment numbers over the last three months make the size of these increases somewhat suspect, but it's still clear that the labor market remains solid. As long as people have jobs, consumption – which makes up 68% of GDP – will likely hold up. Also, headline concerns about record highs in auto, student, credit card, and mortgage debt slowing spending may be overstated. It's true that household debt as a percentage of disposable income has jumped from a pandemic low of 75% to about 86%, but that level is comparable to the 2012-2019 average and is way below the 115% peak hit in 2008. The equity market appears focused on the positive impact of consumer spending on earnings rather than the risk that robust job growth will keep pressure on the Fed to hike rates further.

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- **Resolution of the Debt Ceiling Increase**. As we discussed above, there was never any real chance that the Federal government would default on its debt. Nevertheless, the uncertainty over limited government shutdowns to conserve cash has been removed. Since markets despise uncertainty, the removal of this issue has helped spur the market's recent strength.
- **A Pause in the Banking Crisis.** After the sale/liquidation of Silicon Valley Bank (SVB), Signature Bank, and First Republic Bank, the regional banking crisis has receded from the headlines. Unrealized losses on securities – mostly Treasury securities and mortgage-backed securities – held by all FDIC-insured commercial banks fell by $102 billion Q1 2023. It was the second quarterly decline in a row, and it left losses 25% below their Q3 2022 high when unrealized losses hit $690 billion. Note that the current losses of $516 billion are still enormous compared to historical norms (Chart 9), they just aren't AS enormous as they were six months ago. As the crisis fades, emergency discount window borrowing has fallen back to its pre-SVB level (Chart 10). This may simply be due to replacing one type of emergency aid with another. As discount widow borrowing has fallen, Bank Term Funding Program (BTFP) lending has climbed to a new high. Under this program, banks can borrow for up to one year by posting as collateral securities valued at "par," not at their current market value. The idea is that this high-quality collateral (Treasuries, MBS) will eventually mature and repay at its par value, thus avoiding the impact of unrealized losses on bank capital and threatening their solvency. High BTFP borrowing suggests that problems continue to simmer below the surface, but the equity market appears happy to ignore them for the time being: out-of-sight, out-of-mind!

CHART 8

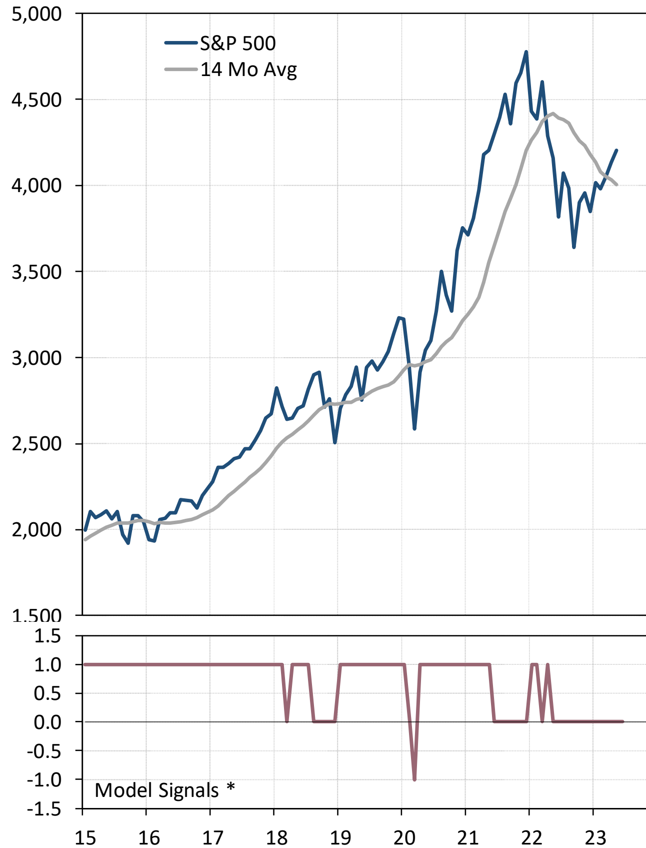


CHART 9

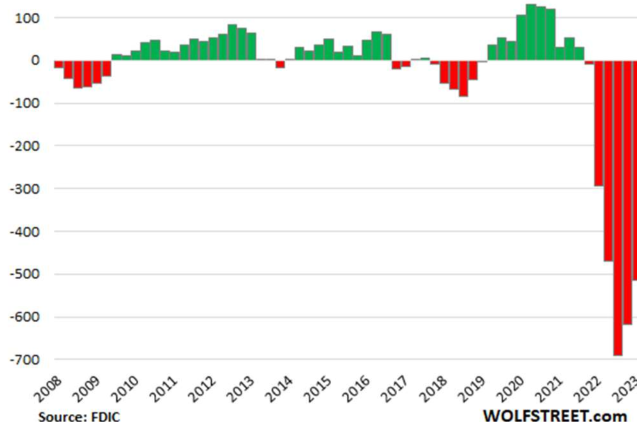
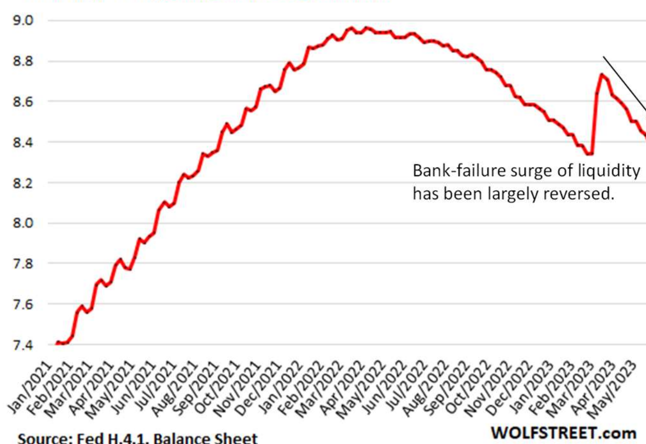


CHART 10



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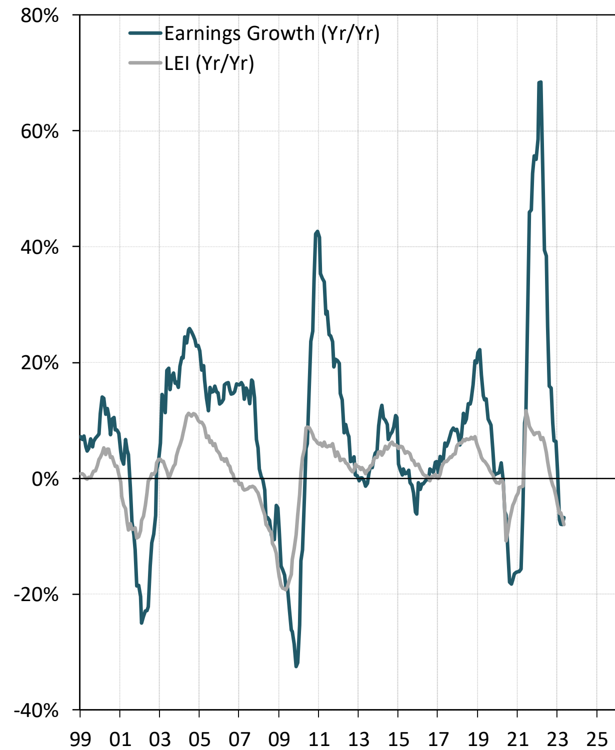
Neutral Factors

- **Corporate earnings *may* be bottoming**. 12-month trailing earnings still look awful, but measures for the total U.S. market, S&P 500, and Nasdaq indexes all improved in May. Total earnings for all U.S. stocks were still down -6.8% yr/yr, but this was an improvement from -8.0% the previous month. Earnings momentum (the 12-month change in 12-month earnings growth) also improved to –46.2% from -60.6%. Earnings have historically turned higher about six months after the Index of Leading Economic Indicators bottoms (Chart 11). The Index just put in a new cyclical low of – 8.0% yr/yr in May which suggests that some further short-term deterioration may still be possible. With earnings momentum still negative, it is unlikely that earnings will provide much support for stocks for the balance of the year. It may, however, remove one of the major drags on stock prices over the last year.

Chart 11
Earnings Growth vs LEI



Negative Factors

- **Core inflation is no longer improving**. Consumer prices excluding food and energy rose 0.4% last month, the fifth consecutive monthly gain of 0.4%. Overall inflation has dropped from an 8.9% yr/yr rate last August to a 5% rate last month. Most of that decrease has occurred due to a 37% drop in energy prices and a 15% decline in food costs. The Gamma Economic Model predicts that at the projected growth rate of the economy, inflation will bottom at a 3.5% annual rate later this year – well short of the Fed's 2% target. Moreover, average hourly earnings rose 0.45% in May from April, the fastest growth rate since November. The three-month average rose by 0.4%, also the fastest rate since November. We previously believed that the Fed's ten rate increases totaling 500 basis points would put a sizeable dent in both economic activity and the core inflation rate. Leading economic indicators still point to a significant slowdown ahead. The persistence of these core numbers, however, is likely to be of growing concern to the Fed.
- **Short-term interest rates continue to rise**. The lack of recent progress in core inflation will keep upward pressure on interest rates (Chart 12). Market expectations previously called for rates to peak with the Fed's May FOMC meeting. Instead, the CME FedWatch Tool currently calls for a pause at the Fed's June meeting followed by another 25 basis points hike in July. Now that the distraction of the debt ceiling increase is out of the way, the Fed may assume a more aggressive stance to try and get inflation solidly under control. Previous comments by Fed officials acknowledge that a sustained improvement is not likely to occur given the current tightness in the labor market. Fed officials are probably frustrated by the disconnect between leading economic indicators and the labor market. The Conference Board's index of leading indicators (LEI) posted its worst one-month drop since June 2020 last month, yet the economy cranked out 339,000 new jobs. The LEI fell 1.2%, the thirteenth monthly decline in a row and a new yr/yr cyclical low. The Fed is clearly hoping that the projected weakness eventually feeds through to the labor market. It's likely they are concerned that a significant slowdown is on its way and that additional tightening(s) will tip the odds in favor a more severe downturn. Each additional month in which wage growth and core inflation continue at a 5%+ rate increases the odds, however, of further rate hikes that would push rates towards their 2000 highs.

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- **<u>The yield curve is becoming even more inverted</u>**. Last month's Fed rate hike caused the 3-30 yield curve to invert to its most extreme level since May 1981 despite an aggressive rise in bond yields due to debt ceiling concerns (Chart 12). The 2-10 curve, which had shown signs of moderating the last several months, also inverted further to 0.72%. **Both curves remain indicative of a very restrictive monetary policy.** Both are likely to contribute to even weaker money growth which has already fallen at the most extreme rate since the 1930's.
- **<u>Every measure of real money growth continues to deteriorate</u>**. Both nominal and real (inflation-adjusted) True Money Supply (TMS) growth continues to crash. Real TMS was down -13.5% yr/yr last month, its largest 12-month decline since March 1981 and the second largest drop yr/yr since WW II (Chart 13). Nominal TMS was down -8.5%. **To put this into perspective, nominal TMS has not fallen this much on an yr/yr basis since the bank failures of the 1930's.** Real M2 was down -9.6% yr/yr. Nominal M2 contracted -4.6%, the first yr/yr decline since the 1930's. All the measures are indicative of a severe contraction in liquidity which is likely to worsen due to an expected further inverting of the yield curves as short-term rates rise. It is highly unlikely that money growth will recover until interest rates have clearly peaked. The only factor preventing this contraction in liquidity from having a more extreme impact on the economy is that it is coming in the face of the record surge in money growth during the Covid pandemic. As we discussed last month, even with the Fed's rate hikes and contraction of it balance sheet, the amount of money per unit of GDP is still 44% higher now than before the pandemic.
- **<u>The Federal Reserve's balance sheet continues to contract</u>**. Even though the Fed injected almost $500 billion in reserves into the banking system in reaction to the flurry of regional bank failures, this occurred against a backdrop of ongoing tightening. Total assets held by the Fed dropped $118 billion for the month and are down $348 billion in the 10 weeks since the peak of the banking crisis. So-called quantitative tightening (QT) continues to be on-track with total assets down $580 billion from their April 2022 high. Chart 6 above shows that divergences

CHART 12

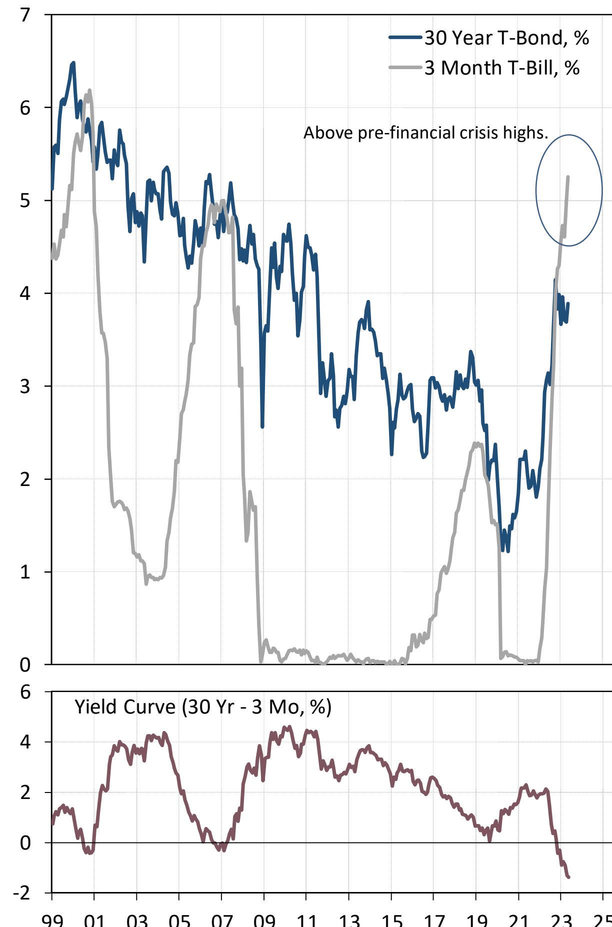
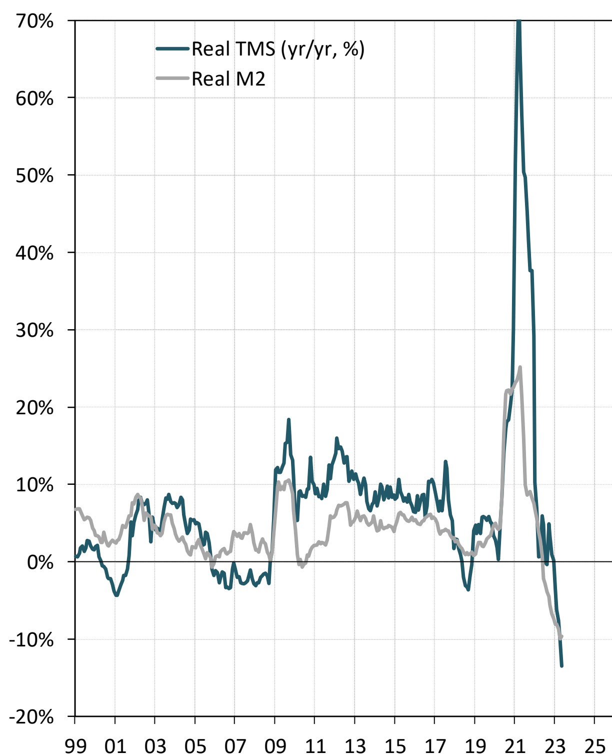


CHART 13



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between debt issuance by the Treasury and purchases by the Fed have invariably been accompanied by flat or negative equity performance.

- **Equities remain overvalued**. Last month's stock rally combined with higher short- and long-term rates carried the major indexes further into overvalued territory. The S&P 500 edged up to 21% overvalued from 19% in April (Chart 8). That's now the most extreme overvaluation since June 2021. The Nasdaq, which led the stock rally last month, saw value deteriorate sharply to 38% overvalued (Chart 14). **That pushed overvaluation just short of levels seen before the beginning of the current bear market** and raises the question of how sustainable this rally is in the face of potential additional rate hikes. **As we have repeatedly noted, no recovery from a major bear market low has occurred in the last 60 years when stocks were not at least fairly-valued. On average, new bull markets launched when stocks were 25% undervalued.**

- **Seasonals: Sell in May and go away**? Stocks have a reputation for underperforming during the summer months. The summer months have actually been positive historically, with the S&P 500 averaging a 0.2% monthly gain since 1974. In contrast, the S&P 500 has averaged a 1.2% monthly return in the non-summer months – a 6:1 outperformance ratio. Looking only at those summers when the Fed was tightening, the monthly summer average shows even worse underperformance with an average monthly loss of -0.04%. June has also historically been the fourth weakest month of the year, averaging a 0.7% gain.

II. Fixed Income Outlook

The 10-year and 30-year Treasury Bond Models and the High Yield Corporate Bond Models remained short for June (higher yields, Charts 15, 16). The Investment Grade Corporate Bond Model covered its long position and also went short (higher yields). Bond yields rose sharply last month as markets remained uneasy over the outcome of the debt ceiling negotiations. The lack of improvement in the core inflation rate, strong labor market performance, an inverted yield curve and the prospect of additional Fed rate hikes also chased bond investors away. The resumption of quantitative tightening and reversal of the Fed's emergency purchase of over $400 billion in securities in March and April also put upward pressure on yields.

Positive Factors

- **Bonds are undervalued**. Last month's sharp rise in bond yields caused bond valuation to improve further. Yields on both the 10-year and 30-year Treasuries rose 20 basis point during May. The yield on both investment grade and high yield corporates climbed over 40 basis points. The sharp jump in yields despite

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CHART 15

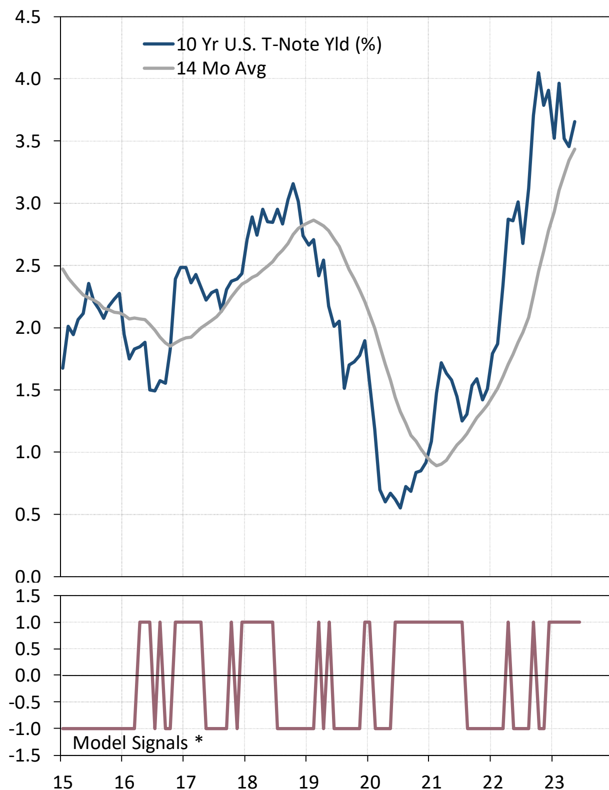
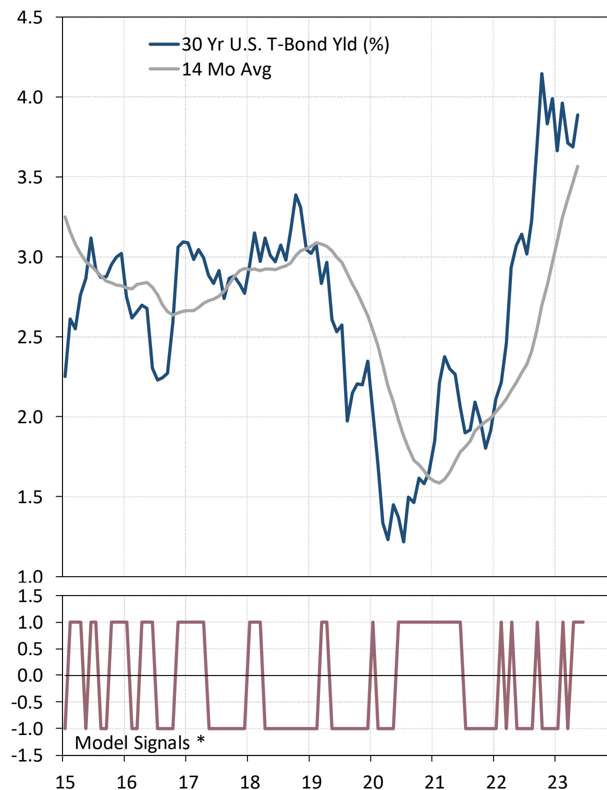


CHART 16



improvement in several leading inflation indicators and a new cyclical low in the Index of Leading Indicators caused all bonds to become more undervalued (Table 1). Investment grade corporates especially improved to 1.84 standard deviations undervalued – their cheapest level since August 2009. Quality corporate bonds now yield over 2% more than 10-year Treasury notes.

- **Bullish seasonals**. Long-term Treasury yields have historically fallen in the second half of the year. June has been the second bullish month of the year with the 10-year T-Note yield falling an average of 5.3 basis point. The 30-year T-Bond yield has fallen an average of 6.9 basis points during the month.

TABLE 1
FIXED INCOME VALUATION

Country	Debt Instrument	Yield Valuation (σ)	Price Valuation (%)
USA 2	2 Yr T-Note	-0.55	0.6%
USA 5	5 Yr T-Note	-0.12	0.4%
USA 10	10 Yr T-Note	+0.31	-2.1%
USA 30	30 Yr T-Note	+0.55	-8.5%
USA IG	IG Corporate	+1.84	-7.8%
USA HY	HY Corporate	+0.95	-11.6%

Neutral Factors

- **Leading indicators are slowing but the labor market remains robust**. Historically reliable leading indicators of economic activity have been pointing to a slowdown for at least six months. The problem is that the labor market hasn't gotten the message. As noted above, the Conference Board's LEI fell 1.2% in May, the thirteenth monthly decline in a row and a new yr/yr cyclical low. The economy has seen substantial slowing in construction and manufacturing, but the service sector continues to hold up unexpectedly well. Given the weakness in the LEI, a substantial slowing in economic activity still remains likely unless prior relationships have completely broken down. **The index has never been down over 2% yr/yr without being followed by a recession**. The problem facing the Federal Reserve is not knowing how much higher interest rates the economy can handle before hitting an inflection point and tanking. For example, the Fed's last rate hike in May 2000 (during the 1999-2000 tightening cycle) occurred when the LEI was up 5.1% yr/yr. 28 months later, stocks were down -50% from their highs and the economy was in recession.

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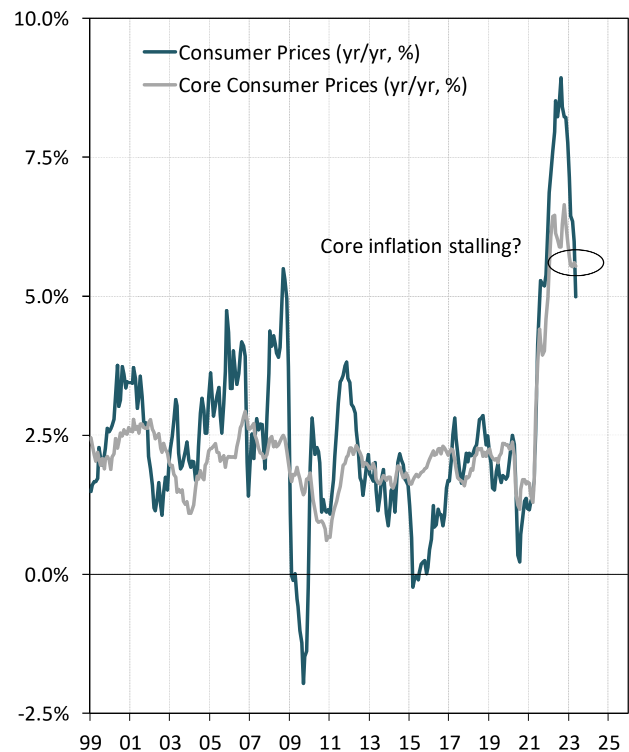
Similarly, the Fed's last rate hike in June 2006 occurred when the LEI was still up 2.4% yr/yr. Bond yields didn't put in a decisive top until June 2007, and it took until February 2009 for stocks to bottom following a -50% drop. The Fed is walking a fine line between losing credibility on the inflation front and at the same time wanting to avoid a sudden drop in economic activity.

Negative Factors

- **Inflation is slowing, but not fast enough**. Headline inflation has fallen from a an 8.9% yr/yr rate nine months ago to a 5% rate in May mostly due to lower energy and food prices. Core inflation (excluding food and energy) has not improved nearly as much, falling from a 6.6% rate to just a 5.5% rate last month (Chart 17). The Fed is concerned that the core rate will not converge to its 2% target rate without inducing at least moderate damage to the labor market. As we discussed above, the problem they face is that the "long and variable lags" in monetary policy make it extremely difficult to predict when "one more rate hike" becomes "one too many rate hike." At this point, the bias likely remains towards higher rates until at least some progress in the core inflation rate is seen. That should continue to keep upward pressure on long-term rates.



- **"Quantitative Tightening" and Treasury borrowing needs.** The brief surge in liquidity in response to the banking failures earlier this year has been largely reversed over the past ten weeks. In the long run, this will likely have the desired effect of slowing the economy and then inflation. In the short-term, however, further liquidation of Treasury holdings will clash with the Treasury's financing needs. Heading into the debt ceiling negotiations, the Treasury delayed issuing new debt in order to manage its cash balances in case a government shutdown actually occurred. The result is that there is now a large backlog of issuance that the Treasury needs to address. We estimate that the Treasury needs to auction about $600 billion in new debt over the next several months. That amount would likely cause a backup in long-term rates even if the Fed was not tightening. The combination of increased Treasury issuance and Fed sales of Treasuries will keep even more upward pressure on long-term rates.
- **Inverted yield curves**. The 3-30 and 2-10 yield curves both inverted further last month. The inverted curves create an incentive to hold higher-yielding, shorter-term maturities over long-term securities which should keep upward pressure on long-term interest rates. With the end of the Fed's tightening cycle being pushed further into the future, bond investors have little incentive to aggressively buy bonds. The one exception is quality corporate bonds which, by historical standards, offer excellent value compared to the inflation rate and comparable maturity Treasuries.

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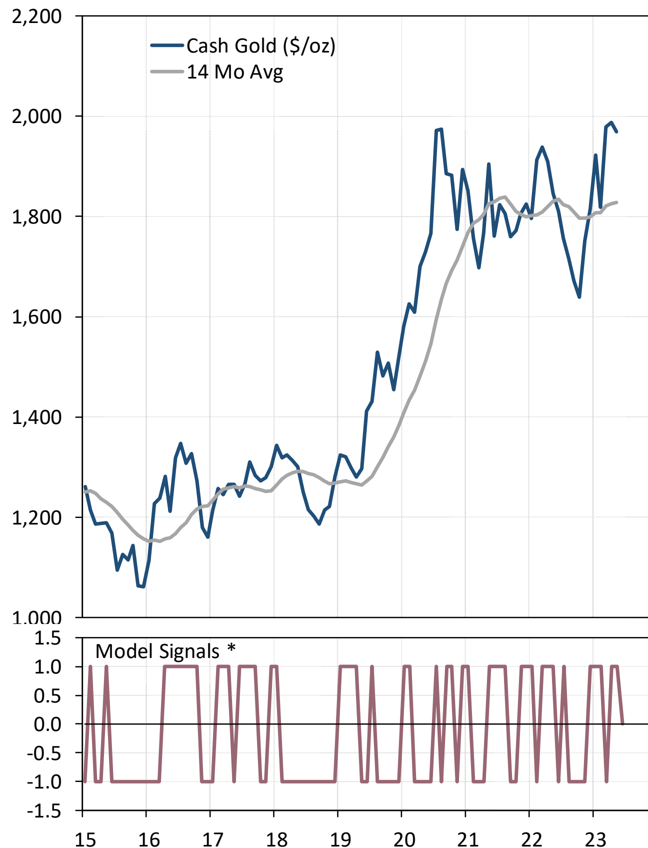
III. Gold and Precious Metals Outlook

The Gamma Gold Model covered its long position and went neutral (no net position) for June (Chart 18). The story for gold all year has been the clash between very attractive valuation and the expectation of a peak in interest rates being steadily pushed out further into the future. **We continue to encourage long-term investors to take advantage of weakness in the sector to add to long positions in both metals and gold mining shares.**

CHART 18

Gold Model Forecast

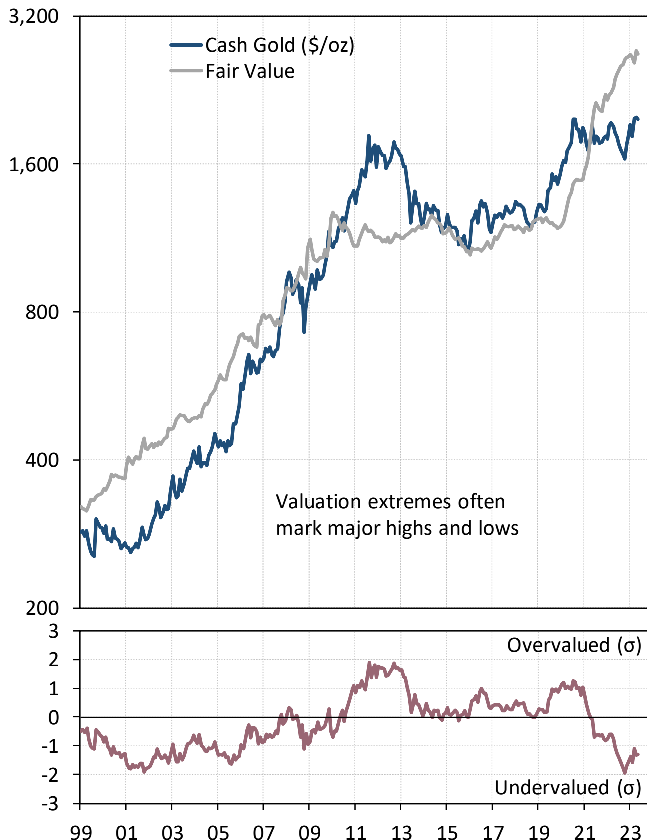


Positive Factors

- **Precious metals are still cheap**. Gold at the end of May was up over 20% from its October 2022 low. Despite this recovery, gold remains 1.3 standard deviations below fair value (Chart 19). The Gamma Valuation Model shows fair value for gold to be around $2,600 – about 31% above its current price. Silver remains even more undervalued at -44%. Gold mining shares dropped -9.4% last month which pushed their undervaluation to -36%.

CHART 19

Gold Valuation



Negative Factors

- **Still-rising interest rates**. As we discussed in the Fixed Income section, both economic growth and the inflation rate are slowing but at a glacial pace. Core inflation, in particular, seems to have stalled at a 5.5% annual rate – well short of the Fed's 2% target. The result is that investors have steadily pushed out into the future when the peak in interest rates is likely to occur. The Fed was originally expected to stop tightening in March. That has now been pushed into June or July with a good chance that another rate hike before year-end will be required to put a dent in the labor market's strength. Gold has historically been the longest leading indicator of inflation and monetary policy. It tends to move so far ahead of major changes in interest rates and inflation that it often appears to be counter-cyclical, i.e., falling when inflation is rising and vice versa. We noted last month that additional interest increases were not likely to reverse the gold rally since rates were likely close to a

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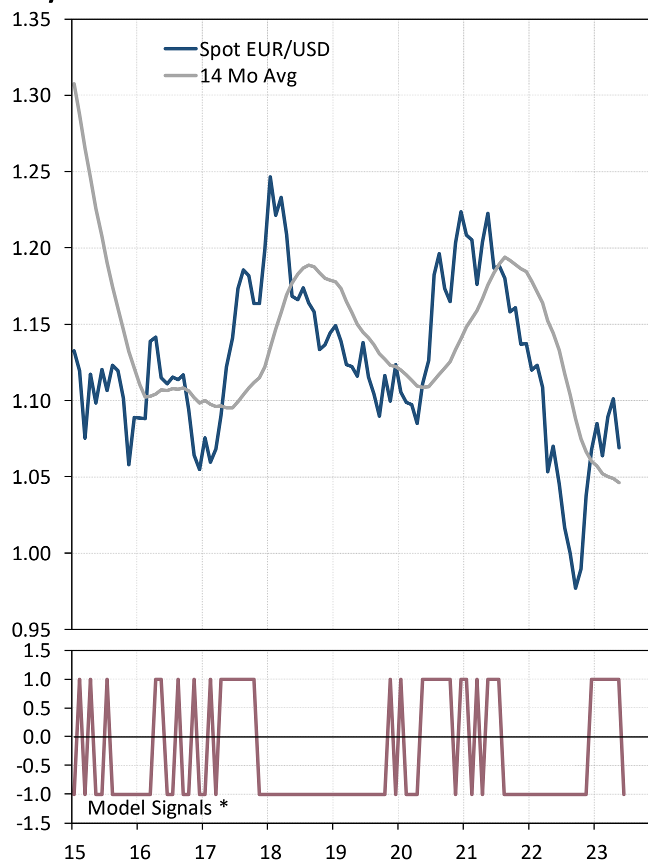
top. Obviously, this is no longer the case. We continue to believe that gold offers excellent long-term value, but the uncertainty over additional interest rate increases will leave the market open to corrections.

- **Dollar strength**. The Gamma EUR/USD Model covered its long position for the euro and went short for June. The euro Model had been long the last six months on the expectation that European rates would continue to close the gap with U.S. rates. That assumption may be somewhat shaky now that Eurozone GDP rose only 0.1% in the first quarter compared to a 1.4% gain in the U.S. With the peak in U.S. interest rates pushed further into the future, it's likely that European rates will at best keep pace. That implies a steady-to-higher dollar which should put downward pressure on gold prices.
- **Negative seasonals**. Precious metals have historically struggled in the first half of the year. Gold has, on average, fallen -0.4% in June. June, however, is also the last strongly negative month with gold having historically risen over 6% in the July-December period.

IV. Foreign Exchange Outlook

The Gamma EUR/USD Model covered its long euro position and went short (long USD) for June (Chart 20). The Model had been long the euro for the past six months, but slower European growth and the prospect of U.S. rates remaining "higher for longer" caused the Model to flip to a long dollar position.

CHART 20
EUR/USD Model Forecast



Positive USD Factors

- **Still-rising U.S. interest rates**. U.S. economic growth continues to outpace that of the Eurozone. U.S. real GDP rose 1.4% in the first quarter compared to an anemic 0.1% for Europe. The persistent strength in the U.S. labor market combined with stubbornly high core inflation is forcing the Fed to maintain rates at current levels or even raise them further. The interest differential with Europe had narrowed steadily over the last six months as the European Central Bank (ECB) began to raise rates more aggressively to combat record high inflation rates. The three-month interest differential narrowed from 3% last November to 2% in April (Chart 21). It has since widened back further in favor of the dollar. European inflation has dropped sharply since energy prices peaked in mid-2022. The yr/yr rise in producer prices in Germany has plummeted from a 45% rate September 2022 to only a 4% rate last month. With European leading economic indicators remaining weak, the odds of the Eurozone entering a full recession

TABLE 2
STOCK INDEX VALUATION

Country	Valuation (σ)	Valuation (%)
United States	+1.05	+21%
S&P 500	+1.00	+21%
Nasdaq	+1.40	+38%
S&P 600 Small Cap	-1.32	-22%
Canada	-1.30	-22%
Brazil	-2.17	-48%
Mexico	-0.21	-3%
Australia	-1.71	-41%
Japan	+0.18	+7%
China	-1.21	-45%
S. Korea	-0.26	-6%
India	-0.57	-10%
Europe	-1.30	-30%
Germany	-1.54	-33%
France	+0.38	+8%
Italy	-1.61	-40%
Switzerland	-0.28	-6%
UK	-0.07	-2%

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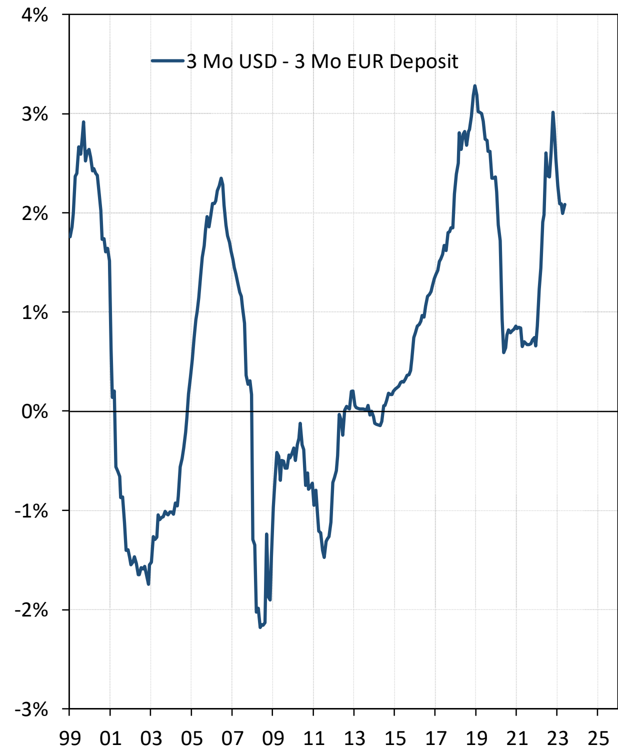
have increased significantly. Most analysts have predicted that the European rates will peak in July at 3.75% after two more 25 basis point hikes. Bundesbank President Joachim Nagel, however, noted recently that the ECB still needs several more interest rate hikes to rein in inflation, and it is not certain that rates could peak this summer. ECB President Christine Lagarde also acknowledged "signs of moderation" in core inflation, but reaffirmed it was too early to call a peak in that key gauge of price growth. Under any circumstances, changes in European rates are at best likely to match those of the U.S.

Negative USD Factors

- **<u>Equity valuation</u>**. Last month's rally pushed U.S. equity valuation into even more overvalued territory. In contrast, European equity valuation remains extremely attractive in comparison. This wide valuation differential in favor of Europe is likely to preclude any substantial movement in capital from Europe to the U.S (Table 2).

CHART 21



IV. Asset Allocation

Coming next month, we will be adding a new section on asset allocation. That section will provide specific information on how our subscribers can implement the Gamma Model investment recommendations using ETF's, mutual funds, or futures. Our goal is help subscribers replicate the returns of the Gamma Models based on our specific trade instructions using liquid, low-cost investment options. We will also track the performance of these portfolios so investor can decide which strategies best suit their investment goals.

-Karl Chalupa

Mr. Chalupa is the CIO 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.

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Gamma Macro Model Forecasts for June 2023

1 MONTH STOCK INDEX MODEL FORECASTS (%)

Country	Stock Index	Price	1 Mo Forecast	Previous Forecast	Position	Trade	Updated
USA	S&P 500	4,205.52	0.00%	0.00%	Neutral	Hold	5/31/23
USA	Nadaq	13,014.26	0.00%	0.00%	Neutral	Hold	5/31/23
Canada	S&P/TSX 60	1,181.89	0.00%	0.00%	Neutral	Hold	5/31/23
Mexico	IPC	53,180.80	0.00%	5.43%	Neutral	Cover Long	5/31/23
Brazil	Bovespa	108,873.95	0.00%	0.00%	Neutral	Hold	5/31/23
Japan	TOPIX	2,130.63	1.48%	1.50%	Long	Hold	5/31/23
Australia	S&P/ASX 200	7,091.30	0.00%	0.00%	Neutral	Hold	5/31/23
S. Korea	KOSPI	2,577.12	0.00%	0.00%	Neutral	Hold	5/31/23
China	Hang Seng CEI	6,163.34	0.00%	0.93%	Neutral	Cover Long	5/31/23
China / HK	Hang Seng	15,789.24	0.00%	0.00%	Neutral	Hold	5/31/23
India	Nifty 500	15,766.40	0.65%	0.37%	Long	Hold	5/31/23
Eurozone	STOXX 600	454.15	0.00%	0.00%	Neutral	Hold	5/31/23
Germany	DAX	15,789.24	0.00%	0.00%	Neutral	Hold	5/31/23
France	CAC 40	7,135.71	0.00%	0.00%	Neutral	Hold	5/31/23
Italy	FTSE/MIB 30	26,256.35	0.00%	0.00%	Neutral	Hold	5/31/23
Switzerland	Swiss Market	11,302.57	0.00%	0.00%	Neutral	Hold	5/31/23
UK	FTSE 100	7,486.59	0.00%	0.00%	Neutral	Hold	5/31/23
Russia	RTS 50	1,053.80	0.00%	0.00%	Neutral	Hold	5/31/23
S. Africa	FTSE/JSE 40	70,414.31	1.85%	0.20%	Long	Hold	5/31/23

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	4.37	-0.08%	-0.04%	Short	Hold	5/31/23
USA	5 Yr T-Note	3.75	-0.13%	0.02%	Short	Cover Long & Sell	5/31/23
USA	10 Yr T-Note	3.66	-0.25%	-0.08%	Short	Hold	5/31/23
USA	30 Yr T-Note	3.89	-0.17%	-0.11%	Short	Hold	5/31/23
USA	IG Corporate	5.63	-0.61%	-0.17%	Short	Hold	5/31/23
USA	HY Corporate	8.90	-0.82%	-0.42%	Short	Hold	5/31/23
Canada	10 Yr Govt	3.22	0.36%	-0.09%	Long	Cover Short & Buy	5/31/23
Mexico	10 Yr Cetes	8.84	0.09%	0.24%	Long	Hold	5/31/23
Brazil	10 Yr Govt	11.64	1.06%	0.79%	Long	Hold	5/31/23
Japan	10 Yr JGB	0.44	0.00%	0.05%	Short	Cover Long & Sell	5/31/23
Australia	10 Yr Govt	3.59	-0.09%	0.32%	Short	Cover Long & Sell	5/31/23
S. Korea	10 Yr Govt	3.53	0.04%	0.08%	Long	Hold	5/31/23
China	10 Yr Govt	2.71	0.35%	0.26%	Long	Hold	5/31/23
India	10 Yr Govt	6.99	0.58%	0.19%	Long	Hold	5/31/23
Germany	10 Yr Bund	2.28	0.04%	0.27%	Long	Hold	5/31/23
France	10 Yr OAT	2.85	0.35%	0.44%	Long	Hold	5/31/23
Italy	10 Yr BTP	4.10	0.95%	0.52%	Long	Hold	5/31/23
Switzerland	10 Yr Conf	0.88	0.39%	0.52%	Long	Hold	5/31/23
UK	15 Yr Gilt	4.44	-0.20%	0.31%	Short	Cover Long & Sell	5/31/23
Russia	10 Yr Govt	10.76	-1.88%	-0.87%	Short	Hold	5/31/23
S. Africa	10 Yr Govt	11.30	0.32%	-0.14%	Long	Cover Short & Buy	5/31/23

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Gamma Macro Model Forecasts for June 2023

1 MONTH FX MODEL FORECASTS (%)

Currency	Spot FX Rate	1 Mo Forecast	Previous Forecast	Position	Trade	Updated
EUR/USD	1.0690	-0.75%	0.85%	Short	Cover Long & Sell	5/31/23
GBP/USD	1.2394	-0.44%	0.33%	Short	Cover Long & Sell	5/31/23
USD/CHF	0.9115	0.78%	-0.26%	Long	Cover Short & Buy	5/31/23
USD/NOK	11.1447	0.55%	-0.20%	Long	Cover Short & Buy	5/31/23
USD/SEK	10.8593	0.67%	-0.28%	Long	Cover Short & Buy	5/31/23
USD/JPY	139.73	0.79%	0.60%	Long	Hold	5/31/23
AUD/USD	0.6487	-0.38%	-0.39%	Short	Hold	5/31/23
NZD/USD	0.6010	-0.35%	-0.19%	Short	Hold	5/31/23
USD/KRW	1,324.44	0.19%	0.35%	Long	Hold	5/31/23
USD/CNY	7.1064	0.82%	0.41%	Long	Hold	5/31/23
US/INR	82.68	0.47%	0.43%	Long	Hold	5/31/23
USD/SGD	1.3539	0.45%	0.44%	Long	Hold	5/31/23
USD/CAD	1.3616	0.22%	0.25%	Long	Hold	5/31/23
USD/BRL	5.0770	-0.52%	0.19%	Short	Cover Long & Sell	5/31/23
USD/MXN	17.66	-0.52%	-0.60%	Short	Hold	5/31/23
USD/RUB	81.04	-0.04%	-0.59%	Short	Hold	5/31/23
USD/ZAR	19.69	0.01%	0.26%	Long	Hold	5/31/23
BTC/USD	27,141.03	-0.34%	3.84%	Short	Cover Long & Sell	5/31/23

1 MONTH COMMODITY PRICE FORECASTS (%)

Commodity	Cash / Futures Price ($)	1 Month Forecast	Previous Forecast	Position	Trade	Updated
Gold	1,969.59	0.00%	1.03%	Neutral	Cover Long	5/31/23
Silver	23.35	0.00%	0.35%	Neutral	Cover Long	5/31/23
Platinum	1,002.74	-1.00%	-0.11%	Short	Hold	5/31/23
Palladium	1,384.10	-1.24%	-0.75%	Short	Hold	5/31/23
Aluminum	2,251.51	-1.44%	-3.03%	Short	Hold	5/31/23
Copper	8,103.00	-1.80%	-3.58%	Short	Hold	5/31/23
Lead	2,064.75	-1.13%	-1.61%	Short	Hold	5/31/23
Nickel	20,865.50	-2.57%	-3.10%	Short	Hold	5/31/23
Tin	25,867.00	-2.39%	-1.88%	Short	Hold	5/31/23
Zinc	2,287.77	-3.88%	-2.64%	Short	Hold	5/31/23
WTI Crude Oil	71.11	0.00%	0.00%	Neutral	Hold	5/15/23
HH Natural Gas	2.59	0.00%	0.80%	Neutral	Cover Long	5/19/23

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