Macro Intelligence Report

January 2024

GAMMA INVESTMENT CONSULTING

At this time, we want to pay tribute to our friend and colleague Daniel C. Horan who passed away suddenly in October. Dan was an early contributor at Gamma and was instrumental in assisting with the formation of our stock selection model. He was a gentleman, and his quick wit and humor will be missed but not forgotten.

Gamma Global Macro Model Highlights

- **The S&P 500 and Nasdaq Models remained NEUTRAL (in cash) for January**. Despite last month's 4.4% gain in the S&P 500 and apparently near-universal expectations of additional gains, the Gamma Model remains on the sidelines due to still-negative liquidity and the highest valuation levels since the dot.com bubble.

- **The 30-year Treasury Bond Model covered its LONG position and went NEUTRAL for January. The 10-year Treasury Note Model also remained NEUTRAL. The Investment Grade Corporate and High Yield Corporate Models remained LONG (lower yields).** The neutral position for the 10- and 30-year Treasuries is due to the sharp drop in yields since October which has brought valuation to more neutral levels. Combine that with still-high short-term interest rates, and the Models are looking for a bounce in yields before reestablishing long positions. Investment Grade and High Yield Corporates remained long due to moderate undervaluation despite the recent rally.

- **The Gold Model remained LONG for January along with the Silver and Platinum Models.** Expectations of Federal Reserve rate cuts and still-favorable valuation are continuing to support higher Gold and Gold Mining share prices.

- **The EUR/USD Model remained SHORT euros (long USD) for January.** With Federal Reserve and European Central Bank policy on hold, the exchange rate remains range bound. The Model still prefers a long dollar position, however, due to a 155-basis points edge in short term interest rates and a 190-basis points advantage on 10-year governments. The ECB's balance sheet has contracted more than that of the Fed over the last year, which may eventually contribute to greater euro strength.

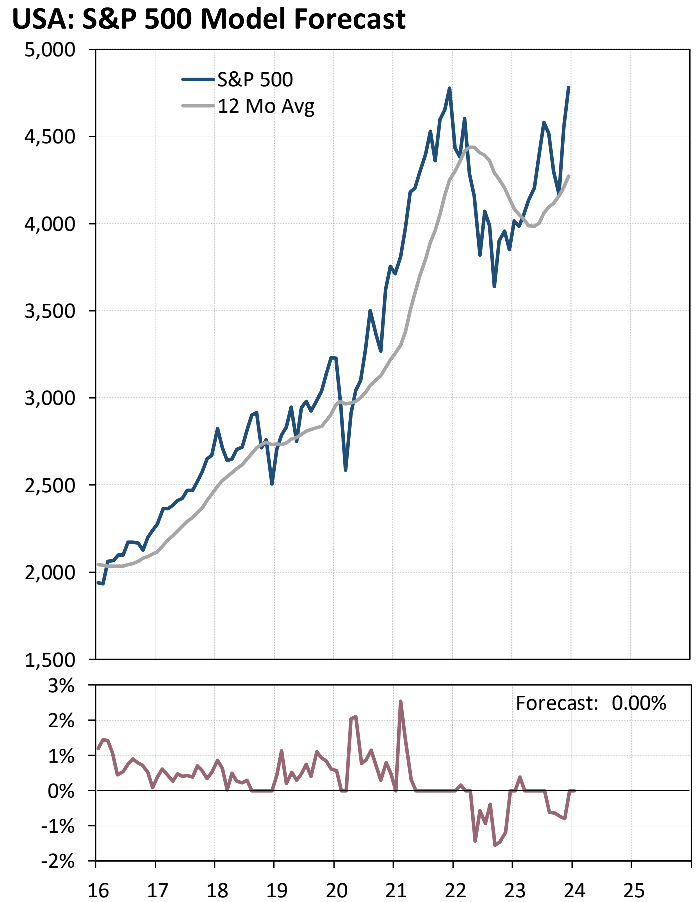
Equity Index Outlook

U.S. equities continued to roll in December. The S&P 500 rose an additional 4.4% during the month and was up 24.4% from its December 2022 low. The Nasdaq posted a 5.5% gain in December and was up 42.1% from its December 2022 low. Despite this rise, the Gamma Equity Model remained neutral both the S&P 500 and Nasdaq indexes for January as most historically reliable leading indicators of stock rallies, notably liquidity, have not yet turned positive (Chart 1).

The stock market's strength appears to be driven by improving corporate earnings and slowing headline inflation, in particular, that has led investors to believe that the Federal Reserve will cut rates multiple times in 2024. Objectively, however, the market's ability to rally in the face of a near-record contraction in liquidity and persistently high valuation is both impressive and puzzling, both of which we'll address below.

- **Liquidity is still negative but improving**. The Gamma Liquidity Indicator continues to slowly improve after hitting a -2.0 standard deviation low last May, the weakest reading since 1981 (Chart 2). 12-month liquidity momentum has now been positive for the last five months. The bottom for liquidity is likely in, but that is

Chart 1

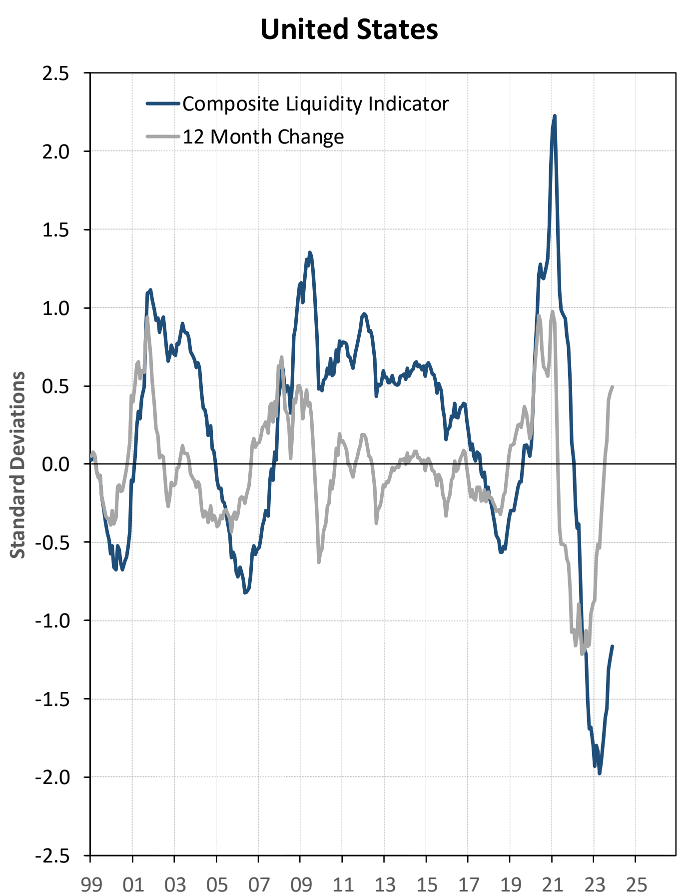


not a guarantee that the recent improvement will be sustained. Most of the improvement has occurred not because liquidity growth measures have turned positive. Rather, the improvement has been due almost entirely to no further increases in short term interest rates and lower long-term interest rates. As a result, the yr/yr change in these measures has fallen to zero so they are no longer contributing to the overall deterioration in liquidity. In addition, the contraction of the Fed's balance sheet is potentially set to accelerate depending on the developments in inflation and economic growth. The negative impact on bank reserves and indirectly on money growth could cause a renewed deterioration in liquidity later in 2024 even if interest rates decline.

- **Money growth remains negative**. All three major measures of real (inflation-adjusted) money growth remain strongly negative on an yr/yr basis (Chart 3). As of December, yr/yr growth in real M1 was down -12.8%. Real True Money Supply (TMS) was down -6.4%, while real M2 fell -6.2%. All three measures are showing signs of bottoming, with real TMS actually growing at a positive annual rate of 5.4% over the last three months. The improvement (or lack of deterioration) is to some extent due to the recovery in bank reserves. Despite the Fed's liquidation of about $1.27 trillion of its investment portfolio, growth in bank reserves has reversed from a -25% yr/yr rate a year ago to an +8.9% rate last month. Expectations of Fed rate cuts in 2024 jumped sharply following last month's FOMC meeting. Normally, that would be bullish for money growth. How the Fed manages its "quantitative tightening" (QT) and the winding down of it reverse repurchase facility will likely have as big an effect on money growth as interest rates (a point that we will discuss in much greater detail below).

- **The yield curve remains inverted**. The 2-10 and 3-30 yield curves inverted further last month. The flattening of the yield curve from March 2022 through June 2023 – when the 3-30 curve moved from +212 to -135 basis points – occurred largely due to rising short-term interest rates. The wider inversion over the past two months (both curves steepened

Chart 2



from May through October) has occurred due to declining long-term rates rather rising short-term rates (Chart 4). The decline in long-term rates can be viewed as a sign that the market expects the Federal Reserve to cut short-term rates in response to slowing inflation. While this may be true, an inverted curve is still indicative of a restrictive monetary policy. Until we see short-term rates decline faster than long-term rates, the current shape of the curve is likely to keep downward pressure on equity prices.

- **What exactly is the Fed doing?** As recently as six weeks ago, investors were anticipating a 25-basis points rate hike by the Federal Reserve. **Since then, expectations have swung radically in favor of six (!) 25 basis points rate cuts in the next twelve months**. Why the change, and is it likely or even possible?

The Fed's December FOMC minutes clearly show that the central bank is increasingly convinced that inflation is under control and the risk now is that an "overly restrictive" monetary policy could pose a threat to economic growth. For the first time since June 2022, policymakers did not describe inflation as "unacceptably high," instead focusing on reasons why they expected inflation to continue to slow.

Chart 3

Real True Money Supply and M2

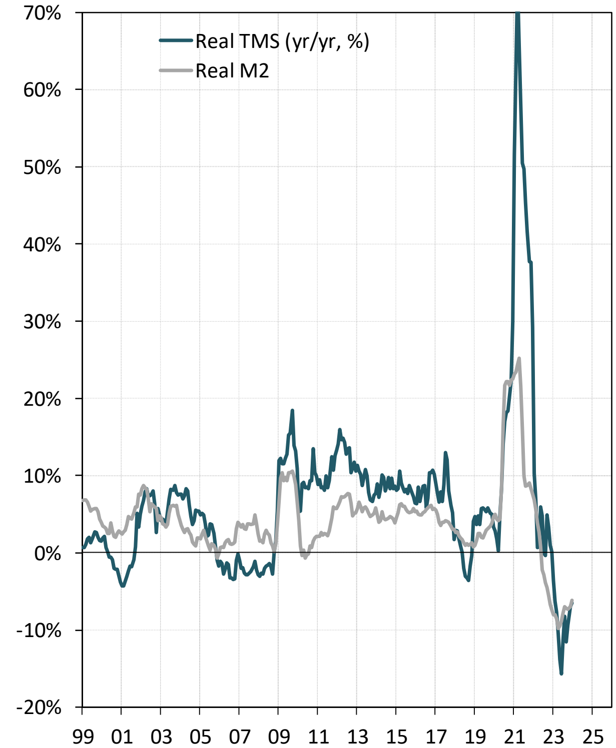
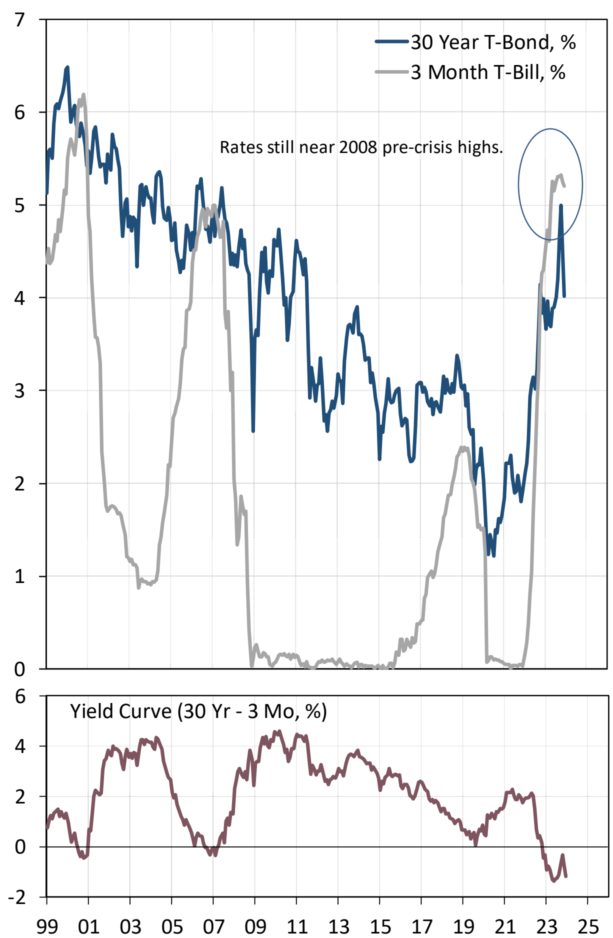


Chart 4

Interest Rates: United States



This change in outlook has been due to a larger and faster improvement in the Fed's preferred inflation measure than originally expected. Inflation as measured by the personal consumption expenditure deflator (PCED), dropped to a 2.6% yr/yr rate last month (Chart 5). The decline was largely due to lower energy prices which have dropped a sharp 19% over the last three months after a short-lived jump in September. The inflation rate had previously shown signs of bottoming in the June-September period – which had raised concerns over another Fed rate hike - before unexpectedly dropping the last two months. The rate excluding food and energy fell to a 3.2% rate. While still well above the Fed's 2% target rate, the measure excluding food and energy has trended steadily lower from a 5.5% rate in September 2022.

Readers will note that 3.2% is over 50% higher than the Fed's 2% target, so why the abrupt change in interest rate expectations? First, the steady decline in the core inflation rate has encouraged investors to believe that it's just a matter of time before inflation reaches the Fed's target rate. This is especially true since service sector inflation has also headed lower compared to several months ago when the rate appeared to be stabilizing at a stubbornly high 5%+ rate.

The second factor is the persistent weakness in the Index of Leading Economic Indicators (LEI). As we have discussed repeatedly, the LEI continues to signal at least a modest slowing in economic activity (Chart 6). The Index last month fell -1.0%, the largest drop since May and the twentieth consecutive monthly decline. The yr/yr rate which had recovered a bit back in September has now fallen back near its cycle low at -8.0%. The assumption is that slowing economic activity will keep downward pressure on inflation which will allow the Fed to eventually cut rates.

While the logic is reasonable, it seems difficult to justify a swing in expectations from a rate hike in December to six rate cuts in 2024. This is especially true since the LEI has been pointing towards a recession for going on two years and the economy has yet to respond. Fourth quarter GDP is projected to be up 2.3% - hardly consistent with a recession. Unemployment at its current 3.7% rate is also indicative of a labor market that remains at or near full employment. With employment at these levels, an acceleration in growth due to Fed rate cuts would make additional improvement in the inflation rate increasingly difficult.

Alternatively, if the economy does slow abruptly, it is likely that the Fed will cut rates aggressively. But a weaker economy will also put a dent in earnings, something that would be entirely unexpected judging from most investment firm forecasts showing earnings continuing to recover into 2024. Markets are pricing in a "Goldilocks" scenario in which the economy slows enough – but not too much – to slow inflation without crashing earnings.

There is also the issue of the Fed's Quantitative Tightening (QT). Fed Chairman Powell noted following the last FOMC meeting that "we're not talking about altering the pace of QT right now." The problem is that QT, which is contractionary, tends to be inconsistent with falling interest rates. Markets are apparently betting that an end to QT is

Chart 5

Inflation Measures

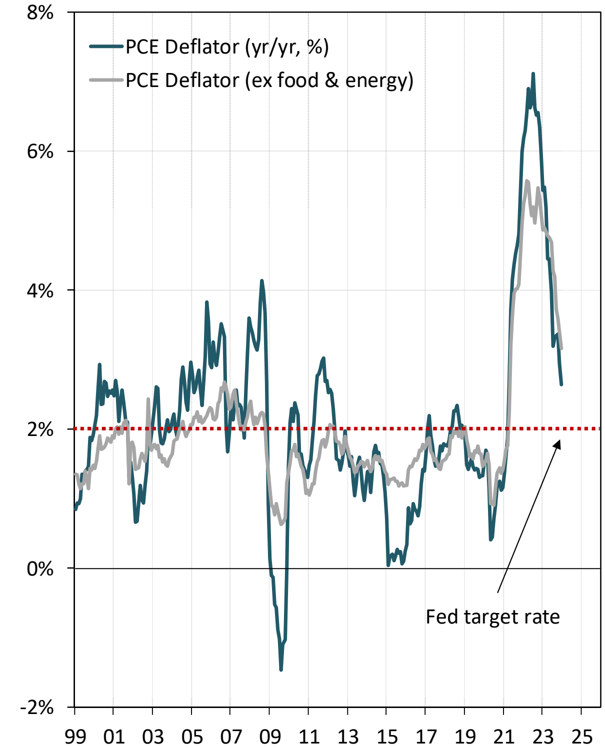
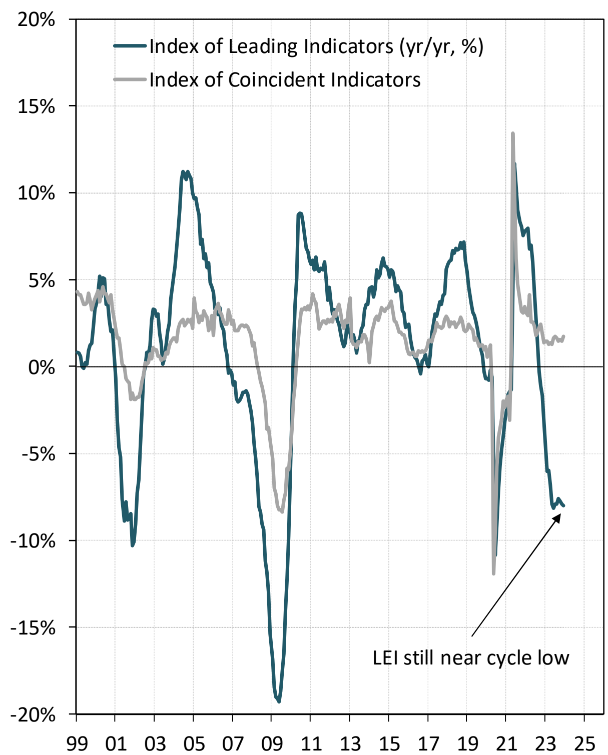


Chart 6

Measures of Economic Activity



in sight. The problem is that Powell added that the two policy levers are "on independent tracks." Wolf Richter of Wolf Street observed that "whether the Fed can keep QT going while also cutting rates, or whether it would end QT before it cuts rates, comes down to why the Fed is cutting rates. If the Fed is cutting rates in order to go "back to normal," with the economy growing but inflation low, a scenario that the Fed's Summary of Economic Projections …. projected, the Fed could keep QT going while cutting rates at the same time. If the Fed is cutting rates because the economy is "really weak," as Powell put it, the Fed could halt QT while cutting rates. "So, you can imagine, you have to know what the reason is, to know whether it would be appropriate to do those two things [QT and rate cuts] at the same time," he said."

If we take the Fed at their word, a further runoff of their portfolio is likely barring a recession which implies potentially a slower pace of rate cuts than what is priced into the market. **In that case, equity prices may be in for a rude awakening when the six expected cuts don't materialize**. While markets seem convinced that QT will end with any rate cuts, there is another factor that investors are ignoring that has likely been responsible for the rally in stock prices in 2024 and that will strongly influence the Fed's approach to QT going forward.

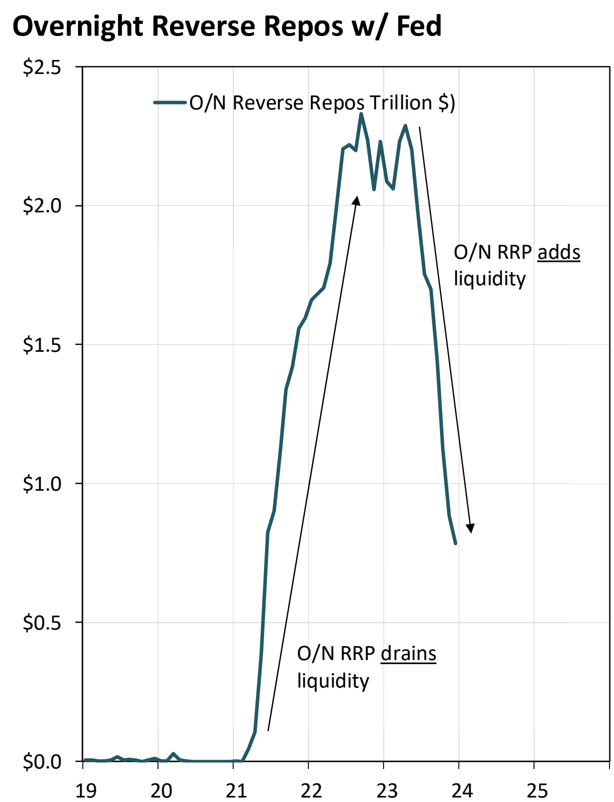
- **QT and O/N RRP**. From the start of the Covid pandemic until the beginning of tightening in March 2022, the Fed added an average of $175 billion a month in new liquidity to the economy at the same time that loan demand collapsed. The result was that interest rates plummeted and were on the verge of turning negative. Large money market funds (MMF) like Fidelity and Vanguard were overwhelmed with investments they didn't want and couldn't invest.

MMFs normally maintain a par value of "100", i.e. the fund's return is due solely to interest earned, not changes in the price of the securities held. In contrast, the return on longer-term bond funds (>1 year) depends on both the coupon earned and also on changes in the price of the bonds held. Interest rates turning negative would have caused the MMFs to "break the buck" because the value of the funds invested would decline over time due to earning a negative interest rate on the investments. To avoid this, the Federal Reserve stepped in and created a special overnight reverse repo facility (ON RRP) for these institutions to give them access to a positive interest rate investment option.

A reverse repo from the perspective of a MMF is simply a secured loan. The MMF places money with the Fed at some interest rate (currently 5.30%). That loan is secured (collateralized) with Treasury securities that the Fed holds in its portfolio. The effect of this is to drain money from the economy because money invested by the MMF leaves the financial system and gets deposited in the Fed's account.

Astute readers will notice that this reverse repo facility, by draining liquidity from the financial system, effectively offset some of the stimulus the Fed was providing at the time by buying billions of dollars of Treasury securities and mortgages (we'll leave the explanation for why they did this for another day). At this point, it's enough to know that the reverse repo facility swelled from $0 in July 2020 to a peak of $2.33 trillion in September 2022 (Chart 7).

Chart 7



Once the Fed began to raise interest rates in March 2022, the likelihood of negative interest rates receded thus largely eliminating the need for the reverse repo facility. As a result, the Fed decided to start reducing the size of its ON RRP book. Since September 2022, the Fed has allowed the reverse repos to run off by $1.31 trillion to $1.02 trillion at the end of December. In other words, the money previously invested with the Fed is now being returned to the financial system. Remember, a reverse repo drains liquidity; allowing a reverse repo to run off reverses this and ADDS money back into the financial system.

The Fed's plan is apparently to reduce the reverse repo facility to zero over the coming months. O/N RRPs have historically been zero except during short periods of financial stress. Fed Chairman Powell said that "at a certain point, there won't be any more to come out of [RRPs], (presumably because they will have fallen to zero), or there will be a level where the reverse repo facility levels out, and at that point, reserves will start to come down." In other words, the runoff of the O/N RRPs s will end and will no longer be an influence on the total amount of bank reserves.

In the early phase of the Fed's tightening starting in March 2022, the Fed's investment portfolio was allowed to run off AND the O/N RRP book was allowed to grow. **Both events resulted in money flowing out of the financial system back to the Fed** (Chart 8). The result was the contraction in bank reserves that triggered the initial selloff in equities. The value of total reverse repos peaked at $2.33 billion in September 2022. Since then, the runoff of the Fed's reverse repo book has returned over $1.31 trillion in liquidity to the financial system.

We have discussed in previous letters that the Fed has shrunk its investment portfolio by buying fewer Treasuries and allowing existing holdings to run off as they mature. This has had the effect of removing liquidity because the Treasury has to pay off these holdings by transferring money to the Fed which effectively exits the financial system. Since March 2022, the Fed has allowed its investment portfolio to contract by $1.27 trillion ("quantitative tightening" – QT). Normally, such an extreme contraction in the Fed's investment portfolio would cause bank reserves to fall which, in turn, would tend to put downward pressure on asset

Chart 8

Fed Portfolio vs Bank Reserves (Trillion $)

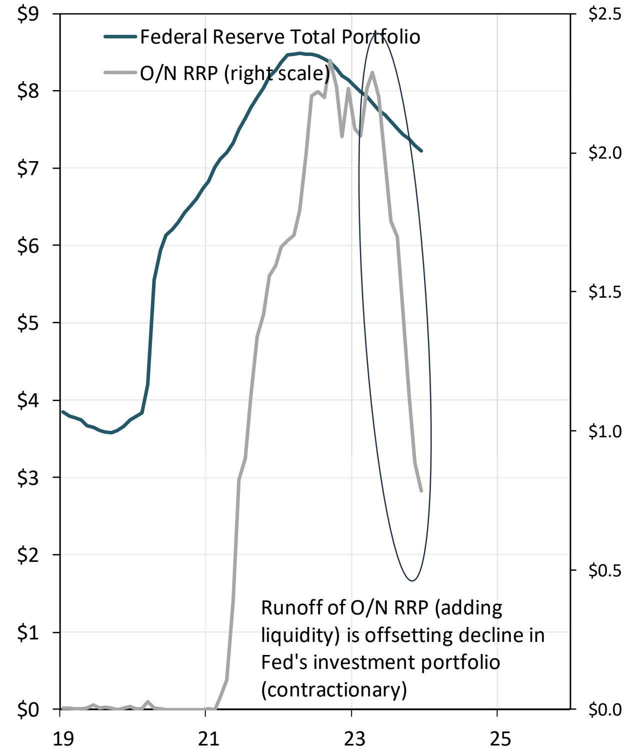
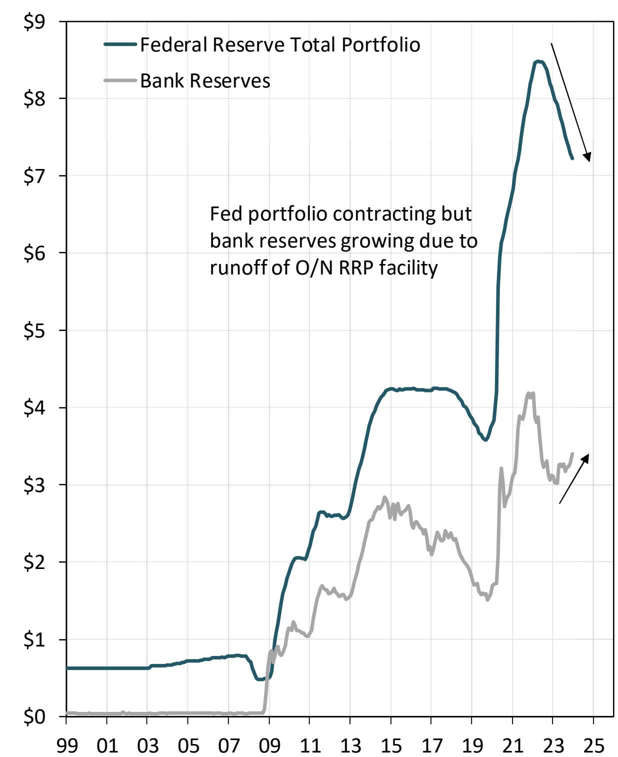


Chart 9

Fed Portfolio vs Bank Reserves (Trillion $)



prices since there is less money around to buy stocks and bonds. That was what happened from March 2022 through early 2023 when total bank reserves plummeted 26% (Chart 8). Since then, the runoff in the Fed's reverse repo facility has more than offset QT which has caused total bank reserves to **increase** 8.9% over the past year (Chart 9). **This increase in liquidity has been largely responsible for the recovery in stock prices despite rising interest rates.**

The problem the Fed faces now is what to do with its QT policy? Normally, declining interest rates are consistent with an expansion of bank reserves as the Fed increases its purchase of Treasuries. In a normal environment, however, the Fed would also not have an O/N RRP facility that it would like to get to zero. Doing so would inject a whopping $1.02 billion in reserves – a 30% increase - back into the banking system. At the same time, the Fed is aware that the current level of reserves is still well above where it would ideally like it to be **even without the addition of another $1.02 trillion from the runoff of the O/N RRP program**. The problem is that banks, which already have ample reserves that can be lent out, would have even more at the same time loan demand recovers due to lower interest rates. The resulting increase in money growth and economic activity would potentially put renewed upward pressure on prices.

Bank reserves at the Fed hit a record $4.19 trillion at the end of 2021. Fed Chairman Powell has since said that "(we) intend to reduce our securities holdings until we judge that the quantitative reserve balance has reached a level somewhat above what is consistent with ample reserves." The "ample reserves" comment apparently refers to the drop in reserves to a critically low $1.5 trillion in 2019 which caused the repo market to freeze up due to lack of bank participation. Assuming that the Fed now views "ample reserves" to be somewhere between that low and the pre-Covid high of $2.4 trillion, that would be consistent with a reserve target of around $2 trillion. With current reserves at $3.4 trillion, that would require a further contraction of another $1.4 trillion.

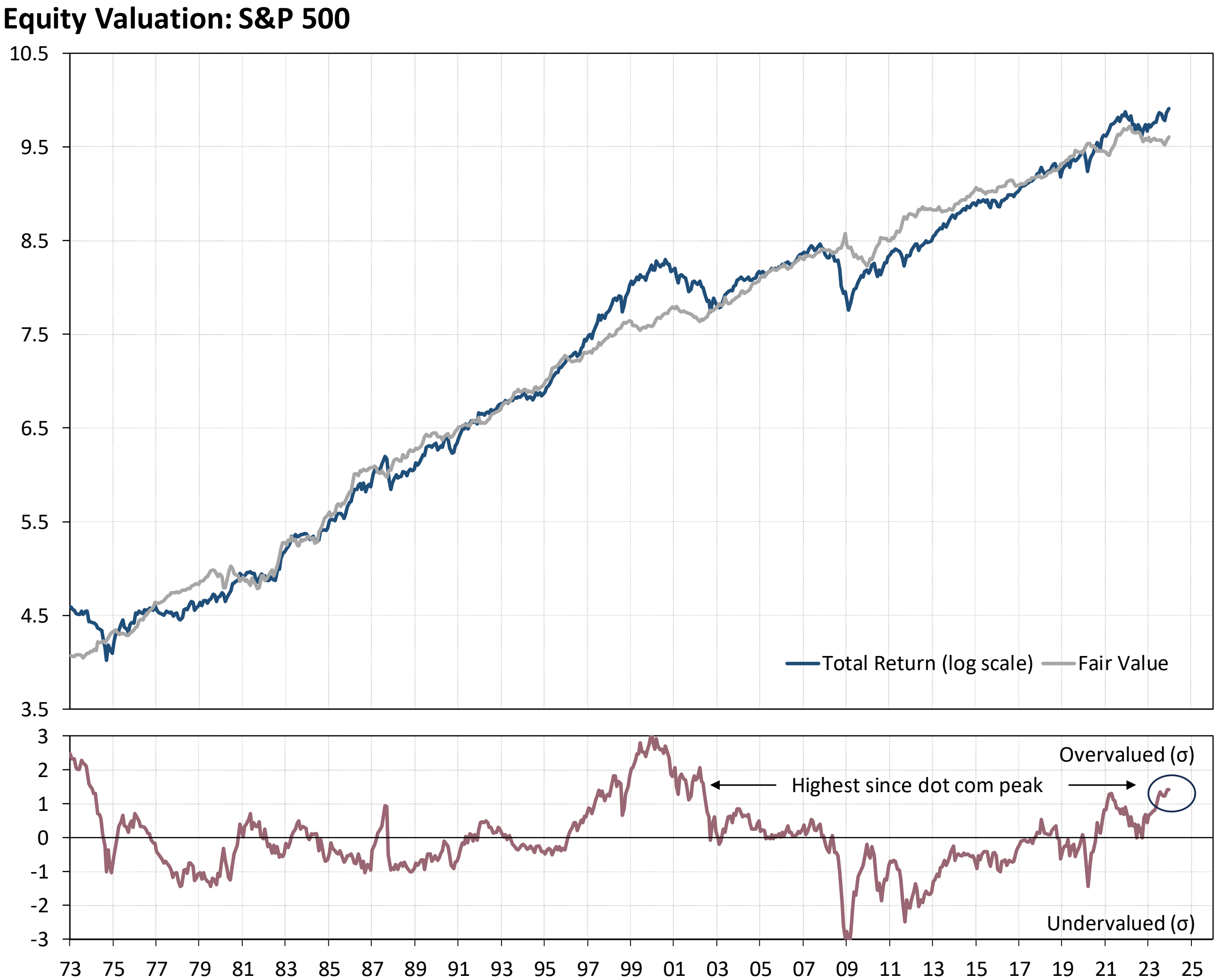
To accomplish this, the Fed would first need to offset the additional $1.02 trillion in reserves that are being returned to the banking system through the runoff of the ON RRP facility. That would be accomplished through sales/runoff of the Fed's investment portfolio. The Fed would then need to sell an additional $1.4 trillion of its investments for a total of $2.42 trillion ($1.02 trillion + $1.4 trillion).

Is a $2.42 trillion reduction in the Fed's portfolio, **double the $1.27 trillion that has already occurred,** consistent with six 25 bps cuts in interest rates in 2024? Probably not. **So, the question becomes what does the Fed emphasize: inflation or growth?** If, when, and how the Fed handles this will be critically important in determining if stocks head higher or lower. It would be comforting to think that the Fed has this all thought out. More likely is that they're making it up as they go along.

- **<u>How will the Presidential election influence Fed policy</u>?** The Fed destroyed much of its credibility over the past three years when it inflated the money supply by 80%, claimed that would not cause inflation, and then blamed the 40-year high surge in inflation on supply bottlenecks. Now, despite core inflation still running 50% over its target rate, GDP growth running at 2.3%, unemployment near a record low, and bank reserve growth accelerating the Fed has pivoted 180° from its narrative of only a month ago It's no great mystery that the likely Republican nominee, former President Donald Trump, is not a favorite of Washington insiders. Will the Fed destroy what's left of its credibility by cutting rates ahead of the election only to hike them afterwards if Trump is reelected? The smart money says "yes."

- **<u>Stocks remain very overvalued</u>**. The rise in stock prices continues to outrun favorable developments in interest rates and corporate earnings. 10-year T-Note yields have fallen 98 basis points over the past two months. S&P 500 earnings were down -1.0% yr/yr in December compared to down -9.2% six months ago and have been growing at a 4.0% annual rate over the last three months. **Despite these improvements, U.S. equity valuation has actually worsened as stock prices have risen faster than the improvement in the underlying fundamentals**. Total U.S. equity market overvaluation worsened to 1.53 standard deviations (30%). S&P 500 overvaluation was unchanged at 1.50 standard deviations (30%) (Chart 10), while the

Chart 10



Nasdaq crept up to 1.66 standard deviations (46% overvalued). These readings are higher than their stimulus-fueled peak in mid-2021 despite 10-year T-Notes being 250 basis points higher and earnings still -5% below their March 2022 peak. Overall valuation is now at its highest level since March 2002 when stocks were still deflating from their dot com frenzy.

Our concern is that if the Fed slashes rates next year as aggressively as the market believes and abandons its QT, the result is likely to be a surge in stock prices that carries valuation to a level rivalling the record peak of the dot com bubble. **The current level of valuation has historically been consistent with well below-average returns.** For example, previous periods when the market was 1.5 standard deviations overvalued resulted

TABLE 1
VALUATION vs FORWARD RETURN ANALYSIS

Country	Valuation (σ)	Valuation (%)	Valuation-Based Return Forecast (Annualized, %) 1 Mo	3 Mo	6 Mo	1 Yr	2 Yr	3 Yr	5 Yr
United States	+1.53	+30%	-2.4%	-1.0%	-0.9%	0.6%	3.5%	5.3%	6.1%
S&P 500	+1.42	+30%	1.1%	1.1%	1.3%	2.6%	5.1%	6.6%	7.0%
Nasdaq Composite	+1.66	+46%	-5.1%	-5.1%	-4.7%	-4.3%	-0.2%	2.8%	3.4%
Russell 2000	+0.04	+1%	11.6%	11.5%	11.7%	11.9%	11.9%	11.8%	11.6%

in an average one-year forward return of only 0.6% and an average five return of only 6.1% a year (Table 1). That compares unfavorably to the average 12.8% annual return since 1973. The outlook for the Nasdaq is even shakier. Similar historical valuation has been consistent with a -4.3% one-year forward loss and only a 3.4% annual return over five years. That compares to a whopping 15.6% average since 1973.

- **Earnings are recovering but may turn lower if the economy slows.** Much of the Fed's interest-cutting strategy for 2024 depends on walking a fine line between keeping inflation on a downward path and while sinking the economy. How well it accomplishes that will determine whether the recent recovery in earnings continues to support stock prices or stalls and triggers a double-dip in earnings that sinks stocks.

Corporate earnings fell -8% from their Covid-stimulus-fueled-high in March 2022. Earnings growth for the overall market improved to a 0.1% yr/yr rate in December from a -6.8% yr/yr rate six months ago. If sustained, the recovery in earnings growth would provide support for additional stock price gains. The question is whether earnings can continue to recover given the 20-month drop in the Index of Leading Indicators. The LEI has historically led changes in corporate earnings by 6-12 months. With the LEI down -8.0% yr/yr and heading lower, the odds favor what, judging from most analysts' forecasts, would be a totally unexpected second leg down in earnings (Chart 11). We may already be seeing signs of this as yr/yr earnings growth for the S&P 500 hit -0.1% in October but edged lower to a -1.3% rate last month.

Chart 11

US Total Market Earnings Growth

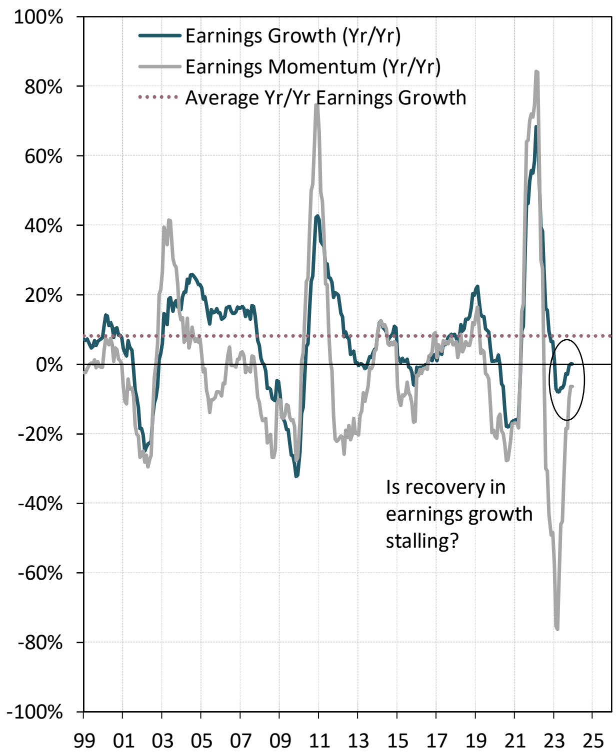
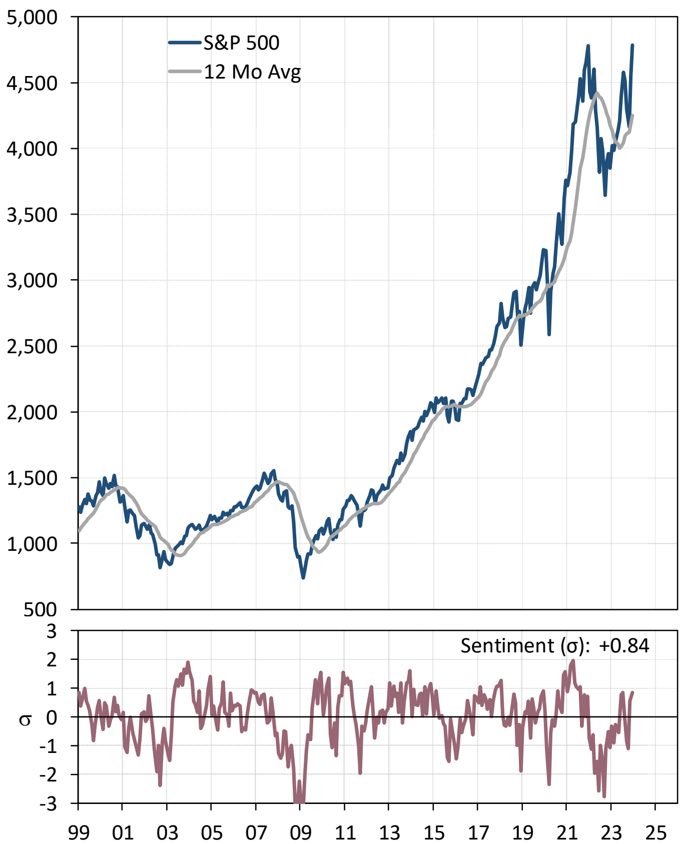


Chart 12

USA: S&P 500 Sentiment



- **Sentiment is mildly bullish**. Despite the S&P 500's 13.6% rise from October's low, the Gamma Sentiment Indicator at 0.84 standard deviations is only moderately bullish (Chart 12). None of the Sentiment Indicator's components were higher than 1.12 standard deviations - well below the 1.5 standard deviation extreme that has historically been associated with equity corrections and reversals. Moderate levels of valuation, in contrast, tend to be consistent with equity outperformance. Similar previous sentiment readings have been consistent with a 13.3% 12-month forward return – higher than the 12.8% annual average since 1973. Based on sentiment alone, this indicates that the current rally still has room to run.

- **Seasonals are bullish.** Equities are in the most bullish part of the year from October through April. January has historically been the fifth strongest month of the year, averaging a 1.3% gain. Unusually strong or weak performance relative to a seasonal pattern, however, is often followed by overshooting in the opposite direction the following months. Given the 8.9% rise in the S&P 500 in November (average seasonal +1.9%) and the 4.4% gain in December (average seasonal +1.5%), it's likely that this year's January performance may end up less than average.

II. Fixed Income Outlook

The 30-year Treasury Bond covered its long position (lower yields) and went neutral for January, joining the already-neutral 10-year Treasury Note Model (Chart 13, 14). The Gamma Treasury Models for the 2-, 5-, 10-, and 30-year maturities are all now neutral. The Investment Grade Corporate, and High Yield Corporate Models remained long, however, larger due to more attractive valuation compared to Treasuries.

Chart 13

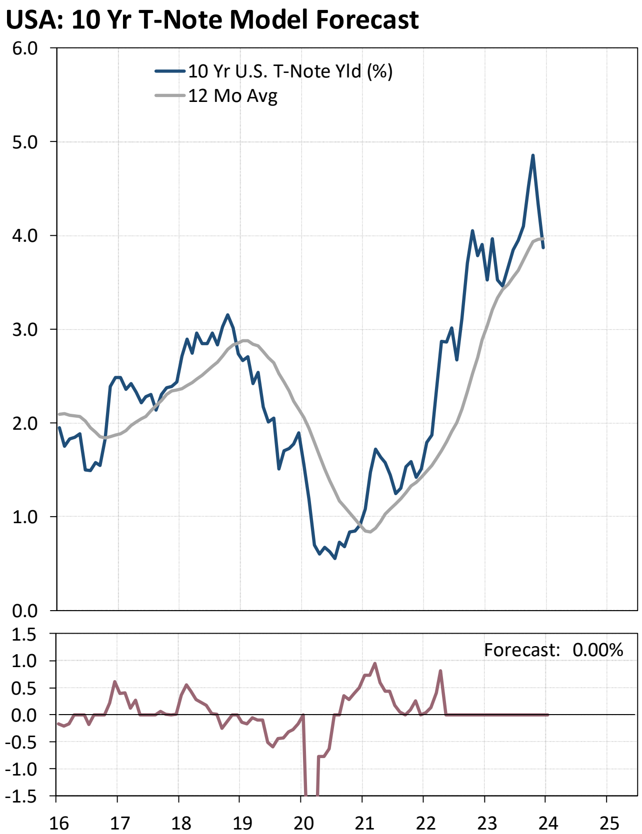
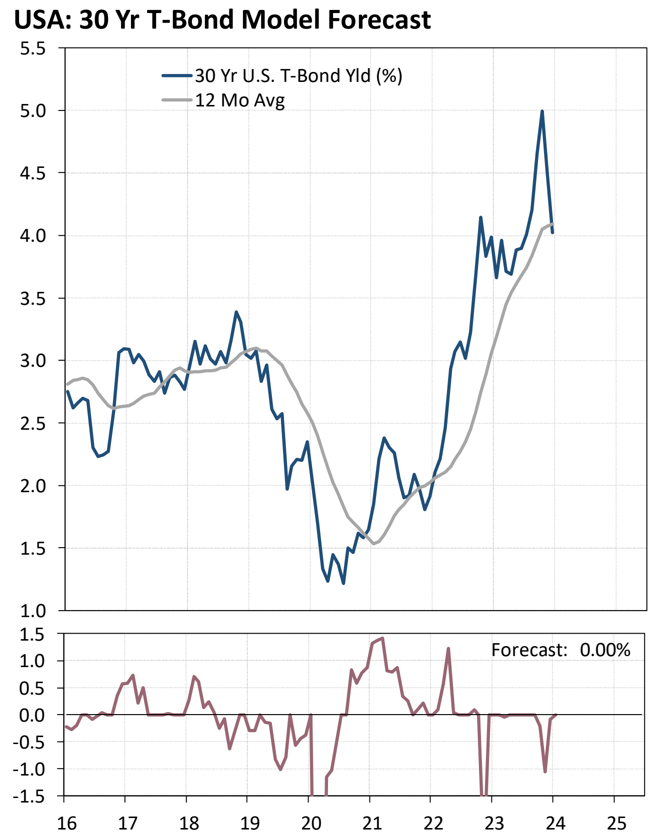


Chart 14



- **Interest rate cuts are already priced in.** The neutral positioning for Treasuries is due to the market's already pricing in the six 25 basis point rate cuts that we mentioned earlier. Both 10- and 30-year Treasury yields have plummeted almost 1% from their October peaks. At this point, the market has priced in the "Goldilocks" scenario in which inflation gradually eases to the Fed's 2% target while real economic growth remains at or slightly below 2%. Under this scenario, long-term rates are likely to remain steady with the decline in short-term interest rates causing the yield curve to steepen and uninvert. Should inflation fail to converge to its target and economic growth remains robust, Treasury yields could head higher to test the highs hit in October. Conversely, if inflation undershoots the 2% target due to a more extreme weakening of the economy, more aggressive Fed rate cuts would likely cause Treasury yields to fall further. With short-term interest rates still near their cycle highs and real (inflation-adjusted) rates positive, the Gamma Models are content to see how the scenarios play out before assuming new directional positions.

- **Bond valuation is mixed.** The sharp decline in bond yields since October has caused valuation for the 10- and 30-year Treasuries to drop to neutral (Table 2). As a result, there is no directional bias emanating from valuation. Only the Investment Grade Corporate Model is slightly undervalued at 0.44 standard deviations which is largely the reason for the Model remaining long despite all the Treasury Models going neutral.

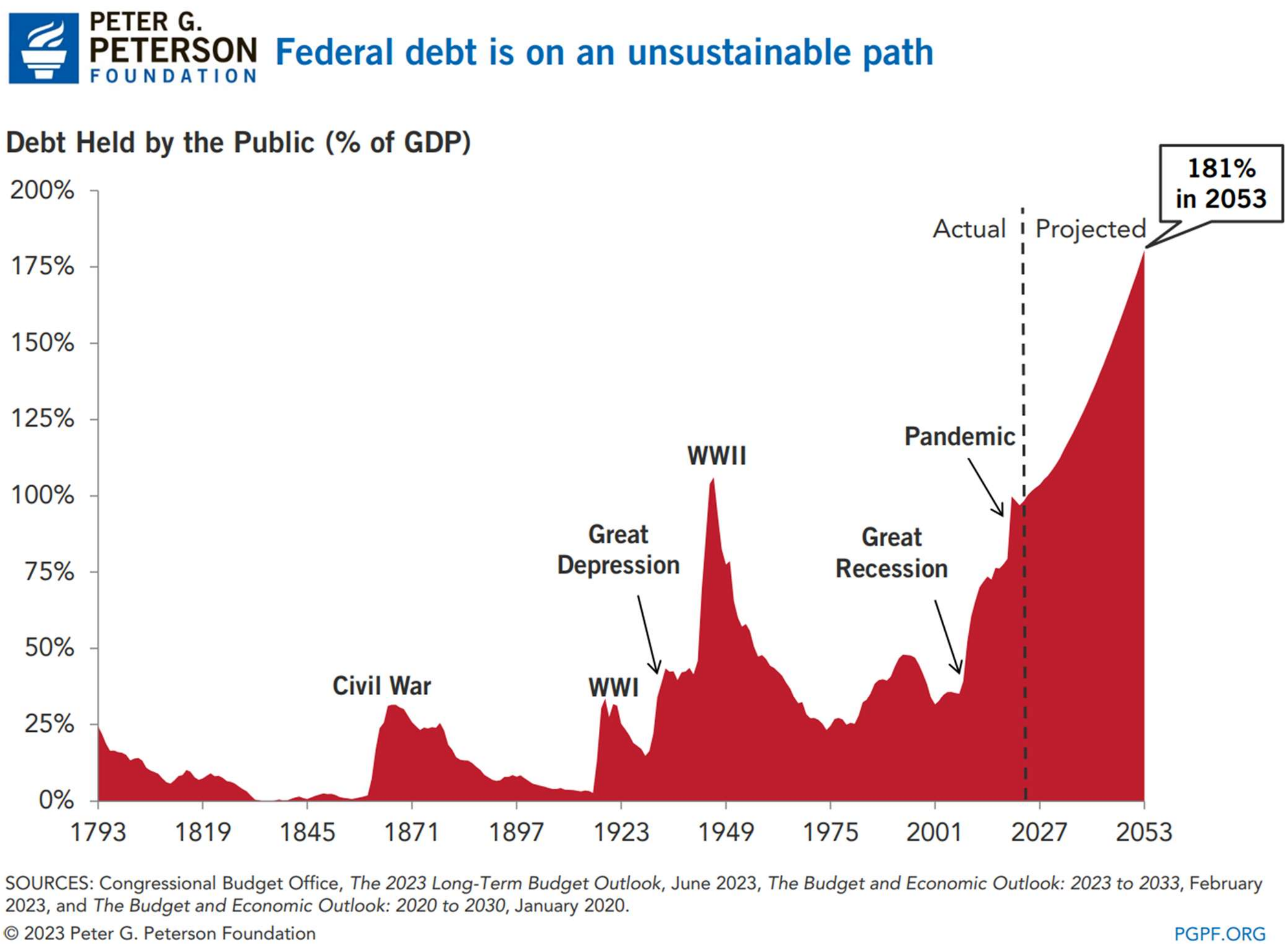
TABLE 2
FIXED INCOME VALUATION

Country	Debt Instrument	Yield Valuation (σ)	Price Valuation (%)
USA 2	2 Yr T-Note	+0.01	-0.1%
USA 5	5 Yr T-Note	-0.47	1.6%
USA 10	10 Yr T-Note	-0.09	0.6%
USA 30	30 Yr T-Note	+0.01	-0.2%
USA IG	IG Corporate	+0.44	-1.9%
USA HY	HY Corporate	-0.00	0.0%

- **Bond seasonals favor higher rates**. Long-term interest rates have historically headed higher from January – May. The 10-year T-note has averaged a 17 basis points rise over that five-month period since 1973, though January has only averaged a 1.2 basis point gain. The 30-year T-Bond has climbed an average of 19 basis points From January – May, with January recording a larger 4.7 basis point rise.

- **The wildcard: government borrowing vs Quantitative Tightening**. The gross national debt of the United States hit a record $34 trillion in December, up over $1 trillion just since September. New debt for the fiscal year is expected to top $1.7 trillion - about 8% of GDP. Net new debt issuance, based on the current trajectory for Social Security and Medicare, is not expected to drop below 6.5% of GDP for at least the next ten years. The result is that total debt as a percent of national income is likely to rise exponentially to record

Chart 15



levels over the coming decade (Chart 15). The interest rate hikes by the Federal Reserve have further complicated the outlook by sharply increasing the interest rate being paid on the national debt.

Money borrowed during the Covid pandemic was issued when 10-year Treasury notes yielded as low as 1.25%. Prior to the Covid pandemic annual interest payments on the debt were running at a rate of about $460 billion. Federal debt skyrocketed by over $8 trillion between 2020 and 2022. Since the Fed began tightening in March 2022, interest rates have jumped from near zero to over 5%. The combination has caused interest on the national debt to more than double to over $1 trillion a year (Chart 16). To put that into perspective, the annual cost of financing the debt is now larger

Chart 16

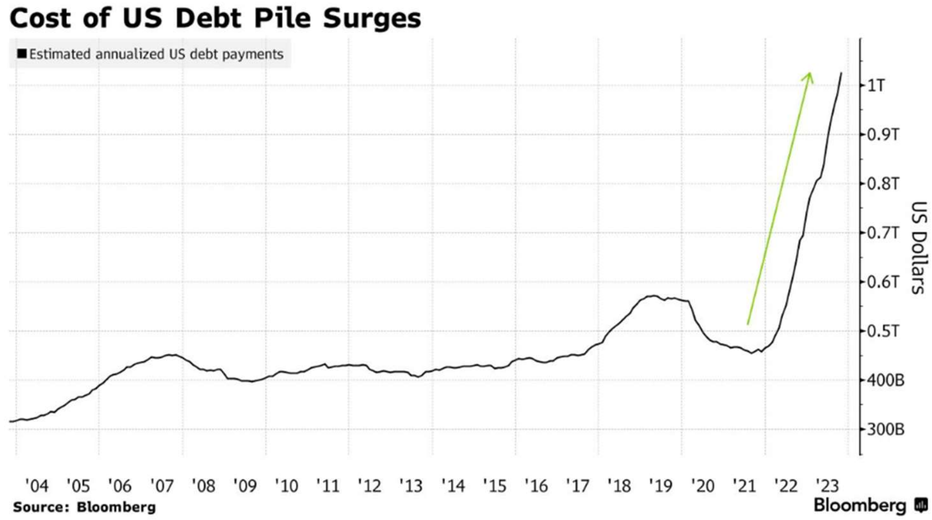
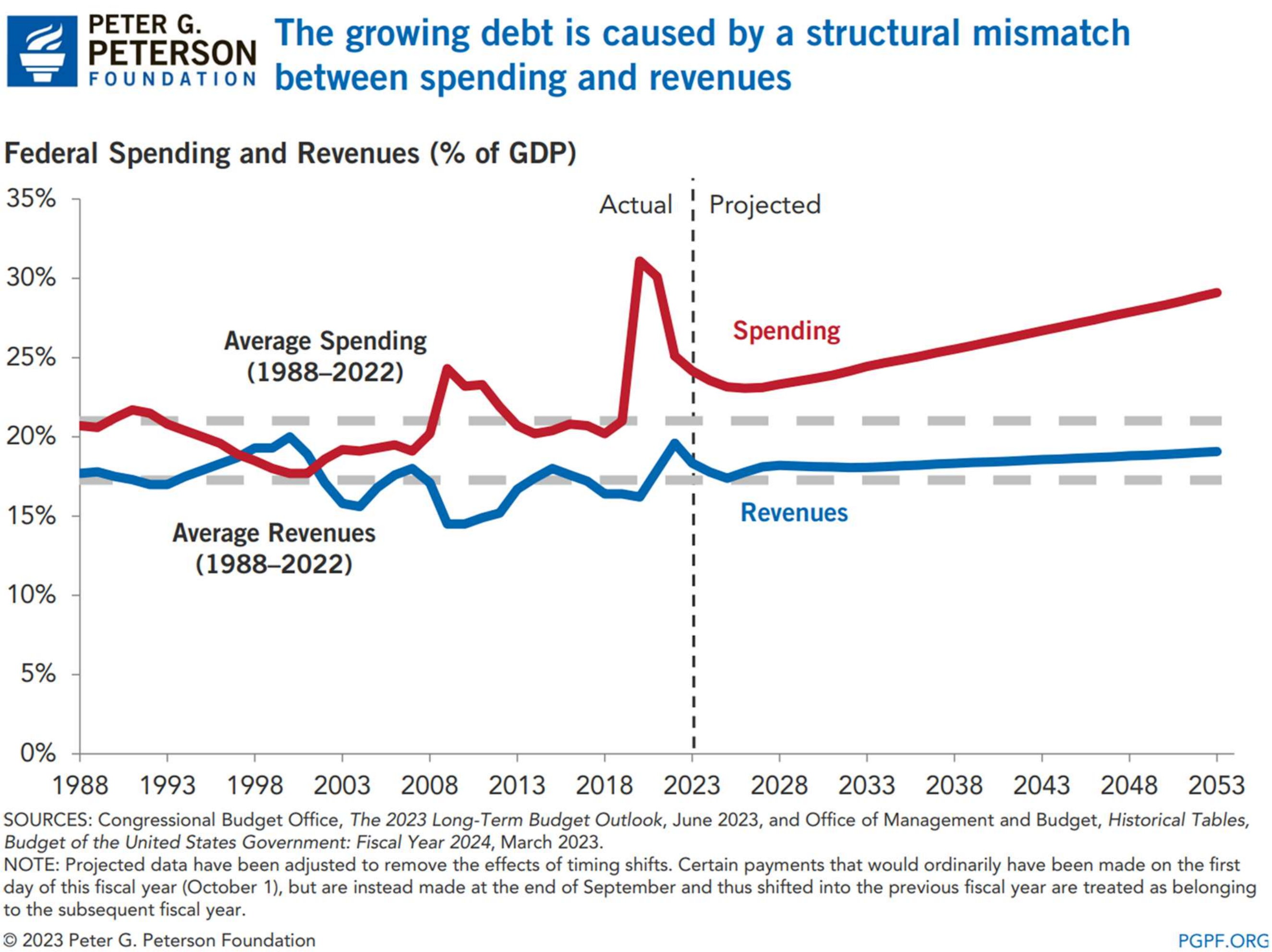


Chart 17



than the defense budget ($880 billion), non-defense discretionary spending ($992 billion), Medicare ($821 billion), and Medicaid ($556 billion). Only Social Security spending at $1.559 trillion is larger. This has created a Catch-22 situation. The government needs to borrow more money to finance the interest payments on existing debt which then increases the total amount of debt on which interest is owed.

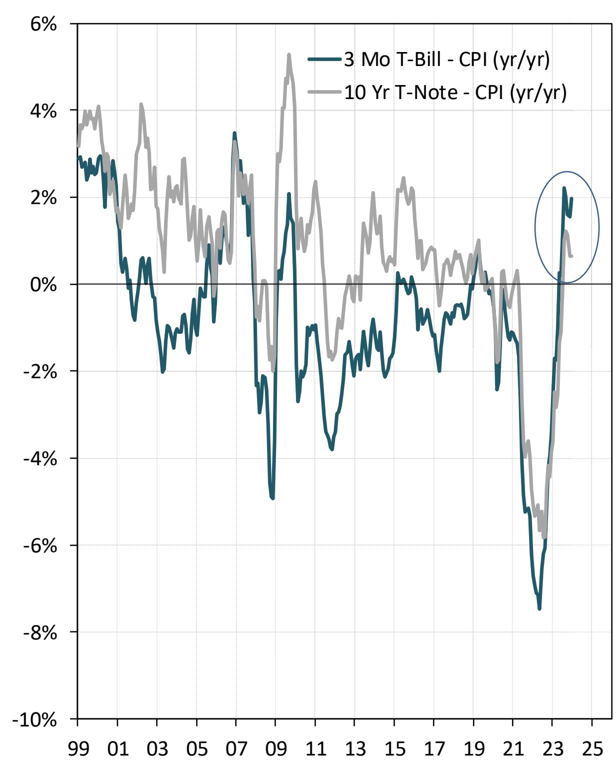
It is mindboggling that the largest economy in the world with a GDP of $26.5 trillion needs to borrow 8% of national income to finance out-of-control spending. And to be clear, this is solely a spending problem. Chart 17 shows historical and projected spending versus revenue. Federal government revenues as a percent of GDP are expected to rise steadily and remain consistently above their 1988-2023 average. As we noted in a previous Report, total federal spending has surged 40% from its pre-Covid level of $5.01 trillion in 2019 to over $7.03 trillion III Q 2023. With Covid over, any sane individual would assume that spending would revert to its pre-Covid level. But that's not the way Washington works. Neither party seems remotely interested in addressing this runaway freight train of spending that is inevitably leading to major dislocations.

The implications are twofold:

- **<u>The size of the debt/deficit is creating a vicious circle</u>**. The amount of money that the Federal government needs to raise is starting to have a material impact on borrowing costs throughout the economy. Real (inflation-adjusted) interest rates have turned strongly positive and have climbed to their highest level since 2009 (Chart 17). With debt expected to grow steadily as a percentage of national income, this upward pressure on real interest rates is likely to continue. The result may be a long-term floor under interest rates that will only exacerbate the cost of financing the debt. The syphoning of capital from the private sector is also likely to harm GDP growth as the hurdle rate for profitable investment rises. Slower economic growth translates into slower growth in tax revenues which will worsen increase the amount the government needs to borrow.

Chart 17

Real Interest Rates



- **<u>The clash between government borrowing and Fed policy</u>**. As we discussed above, the Fed still appears keen on reducing total bank reserves to around $2 trillion from the current $3.4 trillion. To do this the Fed would first need to offset the additional $1.02 trillion in reserves that are being returned to the banking system through the runoff of the O/N RRP facility. In addition, the Fed would then need to liquidate an additional $1.4 trillion of its investments for a total of $2.42 trillion ($1.02 trillion + $1.4 trillion).

  As part of its quantitative tightening, the Fed has already reduced its portfolio by about $1.3 trillion. One of the consequences of this was a surge in interest rates. 3-month T-bill rates have climbed from zero in mid-2021 to over 5.25%. 10-year T-note yields jumped from 1.25% to as high as 4.85%. Long-term yields have declined in the last several months on expectations that the Fed will slash rates in 2024. We believe that the recent decline in long-term rates has been at least partly due to the increase in the level of bank reserves as the O/N RRP has started to wind down. Once completed (and assuming the Fed is sincere when it says it wants to continue QT), total reserves will start to fall again. The result is likely to be another rise in long-term interest rates as the liquidation of the Fed's portfolio clashes with the government's borrowing requirements.

Strangely enough, the optimal scenario for the Fed would be a recession, and the more severe the better. A major downturn in the economy would cause credit demand to fall which would allow the federal government to issue debt without crowding out private sector investment (the assumption is that credit availability would improve more than the decline in tax revenues). A recession would also keep the inflation rate headed lower which would make an end to QT easier to justify. The Fed could cut rates aggressively while buying Treasuries as part of the process. Is that likely in an election year? Probably not which means that odds actually favor just the opposite: a backup in long-term rates.

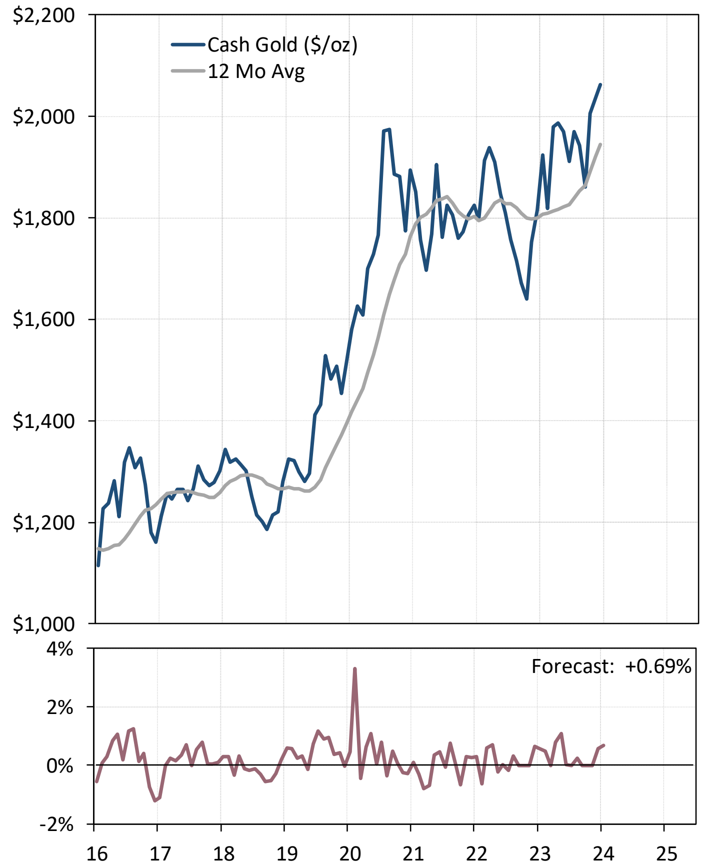
III. Gold and Precious Metals Outlook

The Gamma Gold Model remained LONG for January (Chart 18). Gold gained 1.3% last month, extending its positive run to three consecutive months. Gold Minig Share prices rose 1.1%, also the third consecutive monthly increase.

- **<u>Interest rate expectations are driving gains</u>**. Gold has benefitted from the same interest rate expectations that have driven the recent rally in stock prices. As discussed above, investors are already pricing in six 25 basis point rate cuts through December 2024. Such an extreme expectation would be expected to boost the price of gold. Our concern, however, is that these expectations are already reflected in current prices. As we noted last month, as recently as October markets were seriously entertaining the odds of a December Fed rate HIKE. Now, expectations have swung in favor of multiple rate cuts over the next twelve months. With these expectations already priced into the interest rate term structure, any event that contradicts the slowing inflation / slowing growth scenario would likely trigger a substantial correction or extended consolidation. Also, the overall liquidity situation remains negative and may actually worsen once the Fed winds down its reverse repo facility.

Chart 18

Gold Model Forecast



- **<u>Still favorable valuation</u>**. The risk that the market has gotten ahead of itself with its expectations of six rate cuts in 2024 is still being tempered by still-attractive valuation. Gold valuation hit almost a two standard deviation level of undervaluation in October 2022 when the price dipped to $1,639/oz. **Despite several corrections since then, gold has gained 26% since then. Yet despite this recovery, the metal remains -0.6 standard deviations undervalued (14%) (Table 3). That suggests a fair-value equilibrium price of $2,350/oz**. Moreover, historically such high levels of undervaluation have resulted in overshoots into overvalued territory of at least one standard deviation. That would make $2,950 - $3,000 a reasonable target. At some point either inflation or economic growth numbers will make the market question whether the six-rate-cut scenario is viable. When that happens, investors should take advantage of any moderate-to-major corrections to add to long positions.

- **Seasonals are very supportive of further price gains**. January has historically been the last positive month of the historically bullish July-January period. Gold has averaged a 1.3% monthly gain in January since 1974. After January, however, seasonals turn sideways with historically little or no price gain from February through June.

- **Sentiment is favorably positive**. The Gamma Sentiment Indicator shows gold sentiment to be about 0.7 standard deviations above normal, up from 0.6 last month. That level, while moderately overvalued, is not at an extreme enough level to indicate a major pullback. In fact, 0.7 standard deviation bullish sentiment has historically been followed by a 13.3% 12-month forward return compared to an average 12-month return of 7.4%.

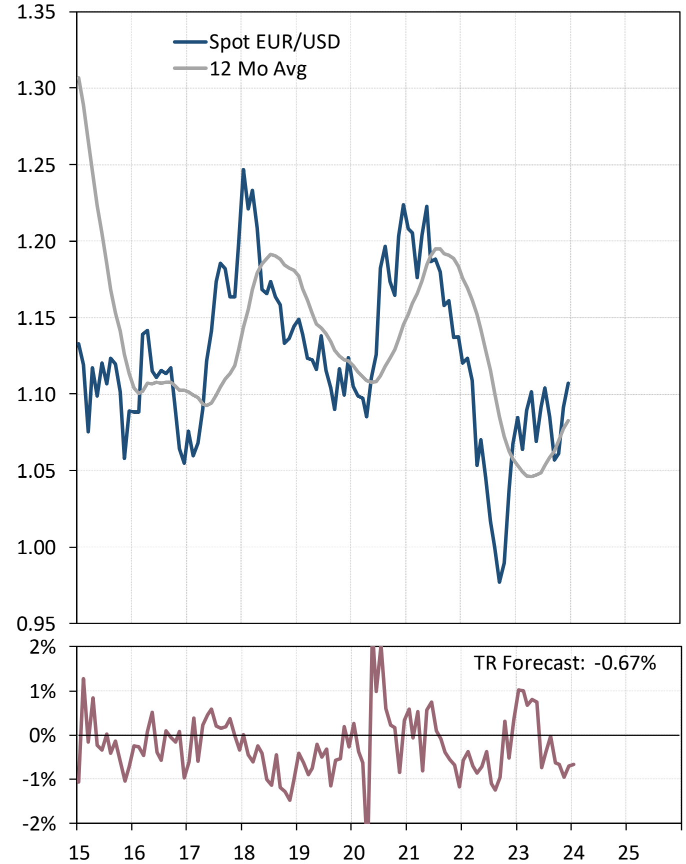
TABLE 3
PRECIOUS METALS VALUATION

Commodity	Valuation (σ)	Valuation (%)
Gold	-0.60	-14%
Silver	-0.59	-20%
Platinum	-1.34	-40%
Palladium	-1.17	-50%

IV. Foreign Exchange Outlook

The Gamma EUR/USD Model remained short the euro (long USD) for January for the sixth month in a row (Chart 20). With the Federal Reserve tentatively in "ease" mode and the European Central Bank (ECB) on "pause," the euro would normally be expected to rally. While The obstacle facing the euro is that, on an absolute basis, both short-term interest rates still heavily favor the dollar. The result is that the exchange rate is likely to remain range bound until a more sustained move in relative monetary policies occurs.

Chart 20
EUR/USD Model Forecast

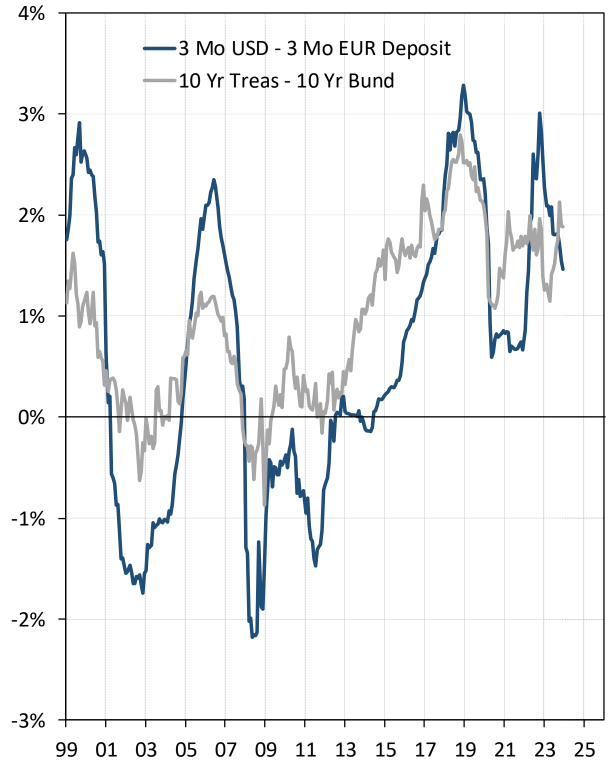


- **The U.S. has an interest rate edge despite potential rate cuts.** While the Federal Reserve is gradually shifting into "ease" mode, the interest rate differential still favors the dollar (Chart 21). The USD-EUR differential on three-month deposit rates has narrowed from 300 basis points in October 2022 but was still a substantial 146 basis points last month. The spread on 10-year governments, moreover, has been largely unchanged at 190 basis points favoring the U.S. The one measure that is moving strongly in favor of the euro is the relative yield curve. The relative yield curve, a measure of liquidity, has moved steadily in favor of the euro since the end of 2022 from +105 basis points to -42 basis points last month. These improvements have helped the euro recover from its sharp drop below 0.9800 fourteen months ago to last month's 1.1100.

- **Relative inflation rates may keep Eurozone rates higher for longer.** Despite the favorable interest rate differential, the EUR/USD Model may switch in favor of the euro in coming months as U.S. rates decline faster than European rates. Eurozone inflation recently bounced higher after declining steadily for most of last year. Yr/yr inflation across the 20-nation bloc jumped to 2.9% in December from 2.4% in November, though the worsening had been expected due to several technical factors. The data was in line with the ECB's prediction that inflation bottomed out in November and will now hover in the 2.5% - 3% range through the year, well above its 2% target, before falling to target in 2025. The implication is that the ECB is not yet ready to jump on the "ease" bandwagon. As in the U.S., investor expectations are betting that the ECB will cut rates six times this year with the first move coming in March or April. If inflation does not converge to the 2% target more rapidly, the ECB is likely to cut its key interest rates significantly less than the market currently expects.

Chart 21

3 Mo & 10 Yr Interest Rate Differentials



- **Relative QT favors the euro.** While the interest rate differential favors the dollar, the ECB arguably is the more aggressive in terms of reining in excessive liquidity. Under the ECB's QT program, which started in October 2022, total assets have plummeted by €1.94 trillion (21.9%) to €6.90 trillion last month to their lowest level since November 2020. In contrast, the Fed's balance sheet has shrunk by $1.23 trillion, a drop of 15%. For comparison, the ECB's balance sheet has contracted at a much more aggressive 1.6% per month pace compared to a 0.7% rate for the Fed. The ECB's pace of QT has also accelerated over that time period and is now the most aggressive of any major central bank.

- **The U.S. economy continues to outperform**. Eurozone GDP fell -0.1% in the third quarter as Yr/yr growth slipped to 0.5%. In contrast, U.S. output climbed 1.2% as yr/yr growth accelerated to 2.9% - its highest reading since I Q 2022. The persistent outperformance in U.S. growth will substantially offset the inflation outlook as a possible influence on relative monetary policies.

- **Cheaper European equities may encourage capital inflows.** European equities offer much more attractive valuation than U.S. stocks. As noted above, U.S. equities are now at their most overvalued level since 1999. European stocks, on the other hand, are still undervalued even after their rally over the past three months. The Euro Stoxx 600 has risen 15% from its October low, but the Gamma Equity Valuation Model still shows the European index to still be a whopping 26% undervalued (Table 4). Such an extreme discrepancy may encourage enough capital inflows to help support the euro.

TABLE 4

EUROPEAN EQUITY VALUATION

Country / Region	Valuation (σ)	Valuation (%)
Europe	-1.15	-26%
Germany	-1.88	-41%
France	+0.30	+6%
Italy	-1.19	-29%
Switzerland	-1.94	-38%
UK	-0.12	-3%

-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.

Gamma Macro Model Forecasts for January 2024

1 MONTH STOCK INDEX MODEL FORECASTS (%)

Country	Stock Index	Price	1 Mo Forecast	Previous Forecast	Position	Trade	Updated
USA	S&P 500	4,783.35	0.00%	0.00%	Neutral	Hold	12/29/23
USA	Nasdaq	15,098.63	0.00%	0.00%	Neutral	Hold	12/29/23
USA	Russell 2000	2,049.30	0.00%	0.00%	Neutral	Hold	12/29/23
Canada	S&P/TSX 60	1,263.46	0.00%	0.00%	Neutral	Hold	12/29/23
Mexico	IPC	57,387.13	+1.62%	+1.74%	Long	Hold	12/29/23
Brazil	Bovespa	134,185.24	0.00%	0.00%	Neutral	Hold	12/29/23
Japan	TOPIX	2,366.39	0.00%	0.00%	Neutral	Hold	12/29/23
China	Hang Seng CEI	5,768.50	+0.54%	+1.01%	Long	Hold	12/29/23
Hong Kong	Hang Seng	16,751.64	0.00%	0.00%	Neutral	Hold	12/29/23
S. Korea	KOSPI	2,655.28	+0.68%	-1.53%	Long	Cover Short & Buy	12/29/23
India	Nifty 500	19,429.15	+1.78%	+1.61%	Long	Hold	12/29/23
Australia	S&P/ASX 200	7,590.80	0.00%	0.00%	Neutral	Hold	12/29/23
Europe	STOXX 600	479.47	0.00%	0.00%	Neutral	Hold	12/29/23
UK	FTSE 100	7,733.24	+1.42%	+1.26%	Long	Hold	12/29/23
Germany	DAX	16,751.64	0.00%	0.00%	Neutral	Hold	12/29/23
France	CAC 40	7,565.90	0.00%	0.00%	Neutral	Hold	12/29/23
Italy	FTSE/MIB 30	30,445.52	0.00%	0.00%	Neutral	Hold	12/29/23
Switzerland	Swiss Market	11,117.28	0.00%	0.00%	Neutral	Hold	12/29/23
Russia	RTS 50	1,080.24	0.00%	0.00%	Neutral	Hold	12/29/23
S. Africa	FTSE/JSE 40	70,494.80	+1.44%	0.00%	Long	Buy	12/29/23

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	4.28	0.00%	0.00%	Neutral	Hold	12/29/23
USA	5 Yr T-Note	3.86	0.00%	-0.00%	Neutral	Cover Short	12/29/23
USA	10 Yr T-Note	3.87	0.00%	0.00%	Neutral	Hold	12/29/23
USA	30 Yr T-Note	4.02	0.00%	+0.09%	Neutral	Cover Long	12/29/23
USA	IG Corporate	5.17	+0.61%	+0.53%	Long	Hold	12/29/23
USA	HY Corporate	7.78	+0.98%	+0.74%	Long	Hold	12/29/23
Canada	10 Yr Govt	3.16	-0.08%	0.00%	Short	Sell	12/29/23
Mexico	10 Yr Cetes	9.03	0.00%	0.00%	Neutral	Hold	12/29/23
Brazil	10 Yr Govt	10.36	0.00%	-0.11%	Neutral	Cover Short	12/29/23
Japan	10 Yr JGB	0.62	0.00%	0.00%	Neutral	Hold	12/29/23
Australia	10 Yr Govt	3.96	0.00%	0.00%	Neutral	Hold	12/29/23
S. Korea	10 Yr Govt	3.18	-0.39%	-0.03%	Short	Hold	12/29/23
China	10 Yr Govt	2.58	0.00%	0.00%	Neutral	Hold	12/29/23
India	10 Yr Govt	7.18	-0.01%	0.00%	Short	Sell	12/29/23
Germany	10 Yr Bund	2.03	+0.06%	+0.11%	Long	Hold	12/29/23
France	10 Yr OAT	2.56	0.00%	0.00%	Neutral	Hold	12/29/23
Italy	10 Yr BTP	3.70	0.00%	0.00%	Neutral	Hold	12/29/23
Switzerland	10 Yr Conf	0.71	0.00%	0.00%	Neutral	Hold	12/29/23
UK	15 Yr Gilt	3.92	+0.34%	+0.39%	Long	Hold	12/29/23
Russia	10 Yr Govt	12.24	0.00%	0.00%	Neutral	Hold	12/29/23
S. Africa	10 Yr Govt	9.77	0.00%	0.00%	Neutral	Hold	12/29/23

Gamma Macro Model Forecasts for January 2024

1 MONTH FX MODEL FORECASTS (%)

Currency	Spot FX Rate	1 Mo Forecast	Previous Forecast	Position	Trade	Updated
EUR/USD	1.1074	-0.67%	-0.70%	Short	Hold	12/29/23
GBP/USD	1.2751	-0.23%	-0.45%	Short	Hold	12/29/23
USD/CHF	0.8370	+0.52%	+0.94%	Long	Hold	12/29/23
USD/NOK	10.1354	+1.06%	+1.19%	Long	Hold	12/29/23
USD/SEK	10.0335	+0.38%	+0.48%	Long	Hold	12/29/23
USD/JPY	141.44	0.00%	0.00%	Neutral	Hold	12/29/23
AUD/USD	0.6820	-0.57%	-0.45%	Short	Hold	12/29/23
NZD/USD	0.6336	-0.60%	-0.15%	Short	Hold	12/29/23
USD/KRW	1,295.69	+0.65%	+0.93%	Long	Hold	12/29/23
USD/CNY	7.1006	+0.00%	+0.05%	Long	Hold	12/29/23
USD/INR	83.21	-0.48%	-0.19%	Short	Hold	12/29/23
USD/SGD	1.3192	+0.41%	+0.64%	Long	Hold	12/29/23
USD/CAD	1.3203	+0.40%	+0.28%	Long	Hold	12/29/23
USD/BRL	4.8521	+0.62%	+1.16%	Long	Hold	12/29/23
USD/MXN	16.91	0.00%	0.00%	Neutral	Hold	12/29/23
USD/RUB	90.85	+0.46%	-2.00%	Long	Cover Short & Buy	12/29/23
USD/ZAR	18.33	+0.38%	+1.55%	Long	Hold	12/29/23
BTC/USD	42,737	+4.52%	+0.77%	Long	Hold	12/29/23

1 MONTH COMMODITY PRICE FORECASTS (%)

Commodity	Cash / Futures Price ($)	1 Month Forecast	Previous Forecast	Position	Trade	Updated
Gold	$2,062.10	+0.69%	+0.56%	Long	Hold	12/29/23
Silver	$23.83	+1.38%	+0.24%	Long	Hold	12/29/23
Platinum	$1,001.51	+0.89%	+0.89%	Long	Hold	12/29/23
Palladium	$1,106.90	+0.21%	-1.29%	Long	Cover Short & Buy	12/29/23
Aluminum	$2,251.51	0.00%	0.00%	Neutral	Hold	12/29/23
Copper	$8,103.00	0.00%	0.00%	Neutral	Hold	12/29/23
Lead	$2,064.75	0.00%	0.00%	Neutral	Hold	12/29/23
Nickel	$20,865.50	0.00%	0.00%	Neutral	Hold	12/29/23
Tin	$25,867.00	0.00%	0.00%	Neutral	Hold	12/29/23
Zinc	$2,287.77	0.00%	0.00%	Neutral	Hold	12/29/23
LME COMPOSITE	---	0.00%	0.00%	Neutral	Hold	12/29/23
WTI Crude Oil	$71.06	0.00%	0.00%	Neutral	Hold	12/15/23
HH Natural Gas	$2.450	0.00%	-2.77%	Neutral	Cover Short	12/20/23

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