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NEUBERGER BERMAN

Equity Market Outlook 4Q 2023

A Change of Season

It's hard to blame the bulls for their good cheer of late.

Spiking inflation no longer dominates the headlines even as the U.S. economy has rebounded toward its long-term trend. Meanwhile, the labor market has started to ease (perhaps reducing the urgency for further interest-rate hikes) while corporate earnings have remained buoyant. Goldilocks would approve.

Yet for all the exuberance, we believe a rising tide of data reveals an economy that is more likely tracing a scenic detour to recession rather than gliding toward a soft landing. While the stock market has remained strong year-to-date, a vast majority of those gains have come from a handful of tech giants rather than small caps and value names, which normally take the lead in truly strengthening economies.

In our **4Q Equity Market Outlook**, we discuss the economic challenges ahead—including steeper capital costs, evaporating excess savings, cracking business and consumer balance sheets, and slumping overall growth. As we monitor these potentially significant shifts, *we maintain our cautious stance and advise investors to consider lowering portfolio beta and increasing earnings quality and defensiveness across all styles, sectors and regions.*

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Investment Themes and Views[1]

Based on their relative sensitivity to changes in inflation and financial conditions, and their historical beta to the stock market, we offer the following as our overweight and underweight views:

OVERWEIGHT VIEW ON:

Factors and Styles:

- Low beta
- High quality
- Large caps
- Momentum
- High earnings visibility
- U.S. stocks

Industry Groups:

- Household & Personal Products
- Telecom Services
- Food & Staples Retailing
- Health Care
- Utilities
- Food Beverage & Tobacco
- Equity Real Estate Investment Trusts (REITs)

UNDERWEIGHT VIEW ON:

Factors and Styles:

- High beta
- Low quality
- Small caps
- Low earnings visibility
- Speculative growth
- Ex-U.S. stocks

Industry Groups:

- Automobiles & Components
- Energy
- Banks
- Consumer Durables & Apparel
- Transportation
- Semiconductors & Semiconductor Equipment
- Technology Hardware & Equipment
- Capital Goods

NEUTRAL VIEW ON:

- Value
- Growth

[1] For illustrative and discussion purposes only. This material is general in nature and is not directed to any category of investors and should not be regarded as individualized, a recommendation, investment advice or a suggestion to engage in or refrain from any investment-related course of action. The firm and its portfolio managers may take positions contrary to any views and themes expressed.

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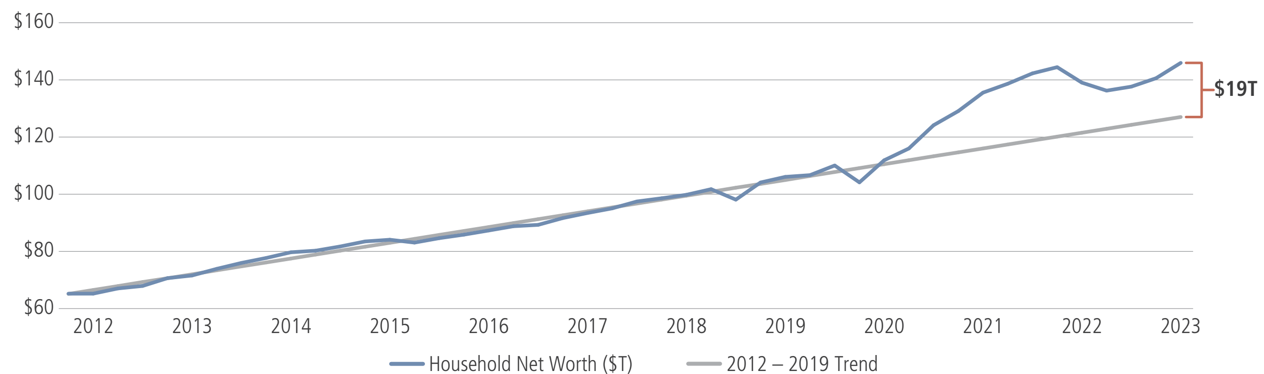
Why Bulls Remain Bullish

The bulls have had a case to make.

As 12-month realized inflation and consumer inflation expectations[1] have fallen from their 2022 peaks, inflation no longer dominates the discussion on company earnings calls. At the same time (and to many observers' ongoing surprise), the Federal Reserve's aggressive interest rate hikes have yet to glaringly dent the economy or equity markets.

Goldilocks would approve: GDP growth has stayed above 2% in each of the past four quarters. Consumer confidence[2] has also improved, as has real income. Excess savings (while lower) remains positive. Excess household net wealth—now at $19 trillion, above the pre-COVID trendline—has helped buoy consumer spending (see figure 1). And despite higher mortgage rates, housing activity and home prices have been resilient.

FIGURE 1: EXCESS HOUSEHOLD NET WORTH CONTINUES TO SUPPORT ABOVE-TREND CONSUMPTION



Source: FactSet and Neuberger Berman Research. Data as of June 30, 2023.

Meanwhile, the labor market has been softening, perhaps reducing the urgency for further rate hikes.[3] (The forward curve may suggest possible cuts over the next year.) Job openings have retreated to where they were in early 2021, while the forward-looking "quits rate" has eased to pre-pandemic levels.

The manufacturing sector offers hope, too: The ISM manufacturing index (PMI)—in decline since March 2021—has staged a two-month rebound, and the new-orders-to-inventory ratio suggests to us that the rally could continue for another few months.[4] Importantly, the Chinese government has expressed its commitment to shoring up the country's growth, potentially shrinking the odds of a global downturn originating from the world's second-largest economy.

Corporate earnings have been following suit, as companies continue to exert enough pricing power to offset still-rising input costs. During the first two quarters of 2023, the S&P 500 (helped along by AI-related demand) reported sequential earnings growth, resulting in more positive earnings revisions than negative ones.[5]

[1] University of Michigan Surveys of Consumers: Expected Change in Prices During the Next Year. Data as of August 31, 2023.
[2] University of Michigan Surveys of Consumers: Consumer Sentiment. Data as of August 31, 2023.
[3] U.S. Bureau of Labor Statistics. Data as of August 31, 2023.
[4] Institute for Supply Management. Data as of September 1, 2023.
[5] FactSet.

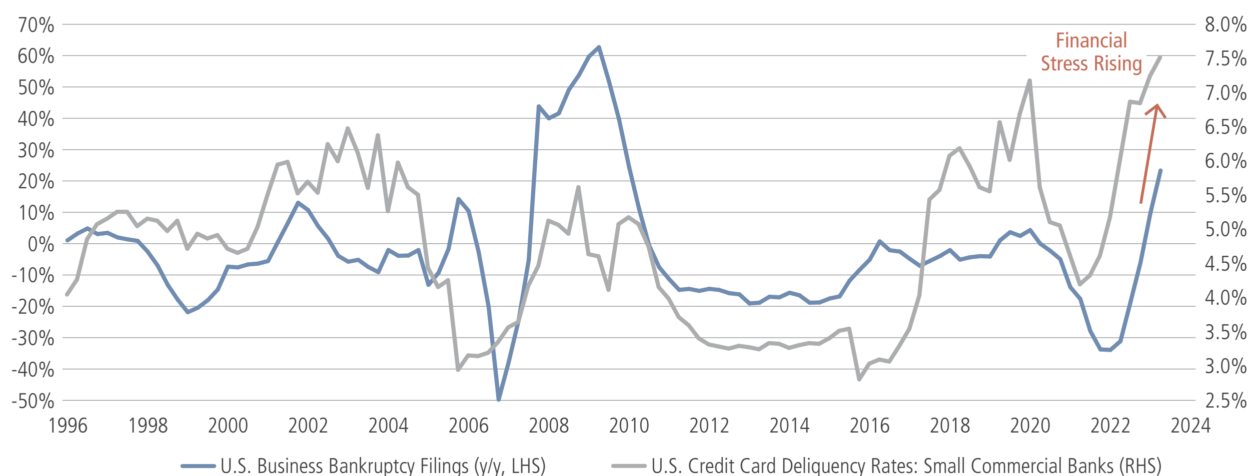
Why Bears Are Prowling

For all the bullish sentiment, however, we believe looming economic challenges could soon quell the exuberance. (For more context, see the "Reasons for the Rebound—and Why They Could Fade" section in our 3Q 2023 Equity Outlook.)

Small business sales slump. Recessionary tremors are often first felt among small companies, which collectively employ the most people per unit of sales. In the August 31, 2023 NFIB survey, 14% more small companies reported shrinking revenues in the past three months than did those enjoying top-line gains—a deterioration exceeded only twice in 49 years, both times during recessions.

Cracking balance sheets. After talk of resilience due to excess savings and termed-out debt, we believe the lag from higher interest rates is starting to bite. Both U.S. businesses and consumers appear increasingly stretched (see figure 2). Company bankruptcy filings are on the rise, and speculative-grade default rates are expected to jump by nearly a third during the next nine months.[6] As for consumers, the average credit card interest rate has hit 21% (500 bps north of the highest level recorded in this data's 29-year history[7]) and delinquencies have begun to spike; meanwhile, the Fed's rate hikes have throttled new home mortgage applications to a 28-year low.[8]

FIGURE 2: MORE BUSINESSES AND CONSUMERS ARE FEELING THE STRAIN



Source: FactSet. Data as of June 30, 2023.

[6] S&P Global: "The U.S. Speculative-Grade Corporate Default Rate Could Rise To 4.5% By June 2024", August 17, 2023.
[7] FactSet. Data as of May 31, 2023.
[8] FactSet. Data as of August 31, 2023.

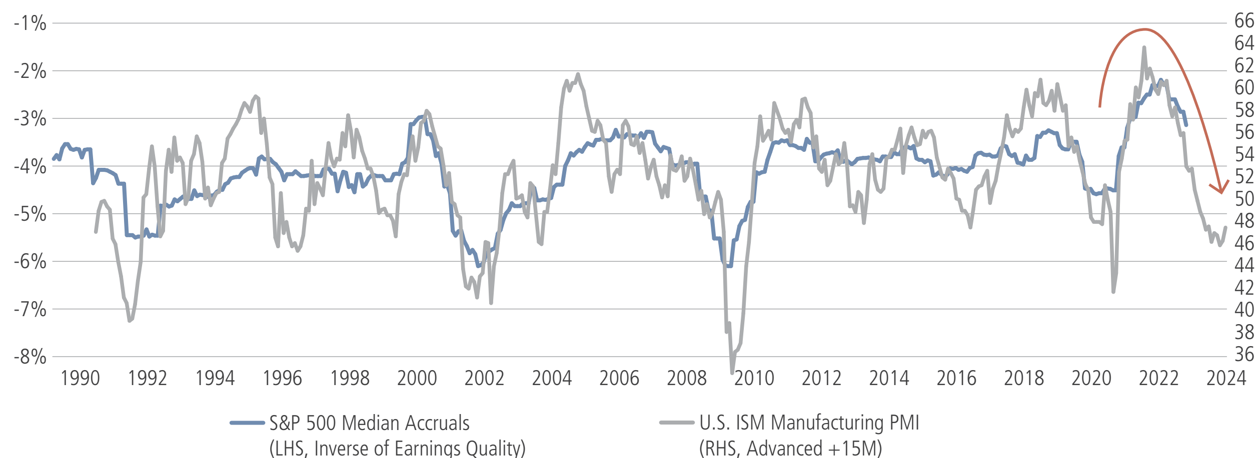
Additionally, we believe sovereign balance sheets could be increasingly in jeopardy from the recent rise in government long rates. Based on conservative projections by the Congressional Budget Office, the U.S. government is on track to spend a troubling 20% of its revenue just to service its debt in 10 years.[9]

More belt-tightening. Consumers (especially those with lower incomes) continue to spend more on the essentials—food, housing and health care—versus discretionary items; we believe this trend, which has been gaining momentum since mid-2022, indicates that shoppers are worryingly stretched, a condition historically seen prior to recessions.

Sputtering labor market. Temporary employment and average weekly hours worked have both staged worrisome declines, while the Kansas City Fed's Labor Market Conditions Index—a composite of 24 labor market indicators—has been falling for a year, which we believe is consistent with an economy headed toward recession.

Poor earnings equality. Accounting accruals—often based on rosy economic scenarios—can turn into earnings write-offs as companies face economic headwinds. As we have been forecasting in previous reports, accruals have begun to decline, from historically elevated levels, as the latest write-off cycle has gathered steam (see figure 3).

FIGURE 3: EARNINGS WRITE-OFFS HAVE BEGUN GATHERING PACE



Source: Neuberger Berman Research and FactSet. Data as of August 31, 2023. Accruals = (Net Income - Cash Flow)/Total Assets.

To be fair, investors buy stocks—they don't buy the economy. So how much economic stress has the market already factored in?

By one insightful gauge—the valuation dispersion of the S&P 500—we believe the market appears too sanguine. Dispersion measures the valuation gap between the cheapest stocks and the median, with higher dispersion implying greater skepticism among investors. Intra-index dispersion is now just +0.5 standard deviations above the historical average, while during recessions it tends to be multiple standard deviations above it.[10] By this measure, we worry that stocks could be especially vulnerable should the economy begin to falter.

[9] Congressional Budget Office (CBO).
[10] Empirical Research Partners. Data as of September 15, 2023.

Why A Recession Is Likely Still on the Horizon

Earnings Recessions vs. Economic Recessions

Souring economies can appear headed for "soft landings" before entering full-blown recessions.[11] (Recent examples include 1990, 2000 – 2001 and 2007.) As the investment community debates the degree of damage on the horizon, we think it might help to review some key distinctions between gentler *earnings* recessions and the full-blown *economic* variety.

Earnings recessions are typically the result of decelerating economic growth and predominantly affect the corporate sector while leaving fewer marks on consumers and investors (hence the term "soft" landing). By contrast, economic recessions accompany significant declines in activity across industries, often leading to rising unemployment, falling incomes, weaker consumer spending and reduced business investment. Put another way: In an earnings recession, economic angst is *in the news*; in a full-blown recession, it's *in your neighborhood*. Since 1945, there have been 18 earnings recessions (during which the S&P 500 earnings declined between 3% and 39%), but only 13 economic recessions.[12]

While earnings and employment growth have begun to slow, it appears we are not yet in an economic recession. Yet history shows that monetary-tightening cycles (let alone very aggressive ones) tend to bite within 18 to 27 months after they begin[13]—and as we now sit 18 months into this latest campaign, we believe there is good cause for vigilance.

Is Growth As Strong As It Appears?

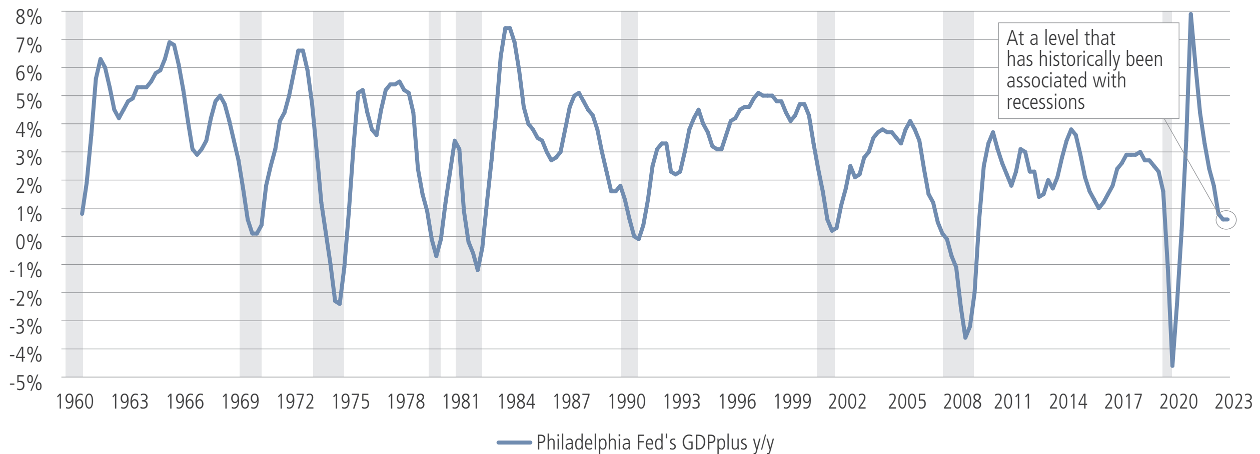
Did you know that the year-over-year GDP growth has been at least 1.4% (and as much as 5.4%) just one month before the onset of every recession since 1948? That's why it's essentially impossible to know when recessions begin simply by tracking GDP data. For example, the Great Recession which began in December 2007, was not evident in the GDP data until July 2008, when GDP first turned negative.

In the current context, GDP continues to paint a potentially rosier picture. According to the Bureau of Economic Analysis, real GDP increased by an annualized 2.1% in the second quarter—a relatively robust performance.[14] At the same time, Gross Domestic Income (GDI), a theoretically equivalent measure of GDP, suggested that the economy grew at just 0.7% in the second quarter. (In basic terms, GDP measures the value of stuff made, while GDI tracks the income of those who made it—a more relevant yardstick for the U.S., some argue, given the country's gradual shift to a more services-oriented economy.)

We believe a gauge developed by the Federal Reserve Bank of Philadelphia—called GDPplus—paints a clearer economic picture by combining both GDP and GDI (for more, see Is Recent GDP Data Overestimating U.S. Growth?). At the end of second quarter, the 12-month growth rate of real GDPplus had dropped to a level that has historically been associated with recessions (see figure 4).

[11] Google Trends. Data as of September 27, 2023.
[12] FactSet and Neuberger Berman Research.
[13] Ibid.
[14] U.S. Bureau of Economic Analysis. Data as of September 28, 2023.

FIGURE 4: THE PHILADELPHIA FED'S GDPPLUS INDICATOR APPEARS TO BE SENDING RECESSIONARY SIGNALS



Source: Neuberger Berman Research and FactSet. Data as of September 28, 2023. Shaded bars denote U.S. recessions.

As for near-term prognostications, there is considerable disagreement—even within the Fed: While the Atlanta branch is forecasting 4.9% real GDP growth for Q3, the New York and St. Louis branches are more pessimistic, at 2.1% and 1.6%, respectively.[15] Ah, the joys of forecasting!

Asymmetric Monetary Policy Casts a Cloud

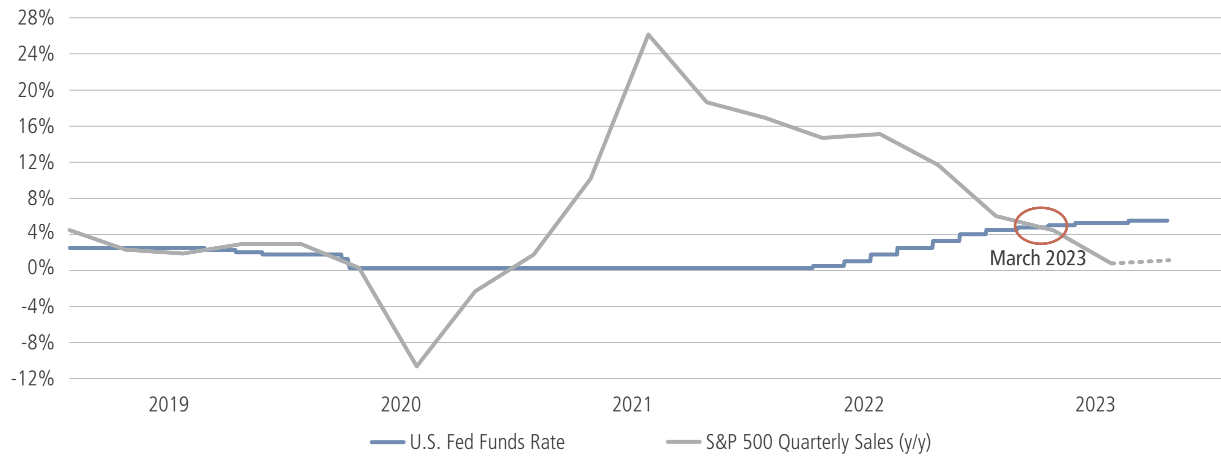
Though aggregate excess savings are being depleted, we believe higher-income consumers still have plentiful resources; meanwhile, broader wage growth is strong and inflation remains well above target. This combination, in our view, increases the odds of additional rate hikes to keep prices in check. That's why we feel there is a greater chance the Fed will leave rates where they are, or tighten further should growth accelerate. Even if growth were to weaken below trend, we believe the Fed is unlikely to cut rates for a while because slowing growth would be seen as essential to bringing inflation down to target.

We fear this asymmetric approach could squeeze the economy harder than the market anticipates and have potentially significant implications for investors.

Consider that, currently, the nominal policy rate has surpassed not only the economy-wide nominal growth rate, but also *revenue growth* among the S&P 500 (see figure 5). Business transactions not settled immediately require financing, and the cost of funding (both short-and long-term) is now outstripping growth. When that happens, businesses may be disincentivized to pursue growth, eventually leading to falling sales that could quickly dent remaining strength in the labor market—and increase the odds of an economic recession.

[15] FactSet. Data as of September 23, 2023.

FIGURE 5: CAPITAL COSTS NOW EXCEED REVENUE GROWTH AMONG THE S&P 500



Source: FactSet and Neuberger Berman Research. Data as of August 31, 2023.

The Payroll Predictor

As a single-variable indicator of recessions, the unemployment rate has been hard to beat. Since the 1950s, the unemployment rate has been a reliable indicator of the onset of 11 out of 11 recessions (with only one false alarm), albeit with an average lag of two months (see left side of figure 6); specifically, whenever the U.S. unemployment rate has increased by 0.4% or more within a year, the country has either been in a recession or on the brink.

FIGURE 6: RISING UNEMPLOYMENT RATES OFTEN FOREWARN ONCOMING RECESSIONS

12-Month Change in Unemployment Rate >=0.4%	Recession Start Date	Months to Recession
11/30/1953	7/31/1953	-4
7/30/1957	8/31/1957	1
6/30/1960	4/30/1960	-2
2/28/1962	No Recession	
1/31/1970	12/31/1969	-1
6/30/1974	11/30/1973	-7
1/31/1980	1/31/1980	0
6/30/1982	7/31/1981	-11
8/31/1990	7/31/1990	-1
4/30/2001	3/31/2001	-1
12/31/2007	1/31/2008	1
3/31/2020	3/31/2020	0
Average		**-2**

7-Month Change in Unemployment Rate >=0.4%	Recession Followed Within 6 Months 12/16 Times	Months to Recession
12/31/1948	Yes	0
11/30/1951	No	
10/30/1953	Yes	-3
9/30/1957	Yes	-1
11/30/1959	Yes	5
2/28/1963	No	
1/30/1970	Yes	-1
5/31/1974	Yes	-6
12/31/1976	No	
12/31/1979	Yes	1
10/30/1981	Yes	-3
9/28/1990	Yes	-2
4/30/2001	Yes	-1
5/31/2003	No	
12/31/2007	Yes	1
3/31/2020	Yes	0
Average		**-1**

Note: Positive numbers denote the number of months that had to pass *before* the onset of a recession; negative numbers denote the number of months that had passed *after* the onset of a recession.
Source: Neuberger Berman Research and FactSet. Data as of August 31, 2023.

So where do we stand now?

Although the unemployment rate has only risen by 0.1 percentage points since August 2022, it has ticked up 0.4 percentage points over the first seven months of 2023. That has happened only 16 times since 1948, and in 12 of those instances, the economy was either in a recession or on the verge of one within six months (see right side of figure 6).

Based on these observations—potentially slowing growth, the Fed's asymmetric monetary policy, and the tick-up in the unemployment rate—we fear the possibility of a U.S. economic recession remains a significant concern.

The Yield Curve Remains Stubbornly Inverted

We believe the trend in U.S. money supply is inconsistent with an economy about to rebound. According to FactSet, growth in 6-month and 12-month M1 supply have been contracting at the fastest rates since the 1960s, illustrating the extent of current monetary tightness.

Furthermore, short-term bond yields have hovered above long-term ones for more than a year now. Inverted yield curves—as measured by the spread between the 1-yr and 10-yr Treasury yield—tend to be reliable harbingers of economic recessions and, ultimately, equity-market declines, in our view.

Since the mid-1960s, the yield curve has inverted 11 times (see figure 7). In all but one case, the S&P 500 staged a quick rally before reversing lower than before the curve's inversion. Twice—in 1989 – 1990 and 2006 – 2007—the index leapt 20% from the date of the inversion, only to relinquish those gains as the subsequent downturn unfolded. On average, we find that stocks fall 25% from the start of an inversion to the following index trough, and 31% from their peak level post-inversion.

FIGURE 7: INVERTED YIELD CURVES TEND TO SIGNAL HEADWINDS FOR STOCKS—BUT THEY TAKE TIME TO PLAY OUT

Yield Curve Inversion	Inversion to S&P 500 Peak (%)	S&P 500 Peak to Trough Decline	Inversion to S&P 500 Trough (%)	Inversion to S&P 500 Trough (Days)
3/2/1966	4%	-21%	-18%	219
4/7/1969	6%	-35%	-31%	414
2/26/1974	4%	-38%	-35%	219
8/18/1978	2%	-14%	-12%	88
9/15/1980	12%	-27%	-18%	695
4/3/1981	-1%	-23%	-24%	495
3/6/1989	22%	-18%	0%	584
8/1/2000	6%	-49%	-46%	799
6/5/2006	24%	-57%	-47%	1008
8/1/2019	15%	-34%	-24%	235
7/13/2022				
Median	**6%**	**-30%**	**-24%**	**455**
Average	**9%**	**-31%**	**-25%**	**476**

Source: Neuberger Berman and FactSet. Data as of August 31, 2023. Past performance is not indicative of future results.

Indeed, for nearly six decades, there has never been a soft landing after a yield-curve inversion as severe and prolonged as the one we have experienced over the last year. While this time could be different, we believe further caution is warranted.

What All of This Means for Equity Portfolios

Stay Defensive

As noted in the "Continued Caution Despite Market Resilience" section of our 3Q 2023 Equity Market Outlook, we believe a roughly $1.3 trillion surge in global liquidity helped turbocharge the equity markets: The S&P 500 and the NASDAQ 100 vaulted 20% and 45%, respectively, during the first seven months of the year.

Many observers have framed that rally as evidence of a resilient economy, falling inflation and a potential soft landing—yet the relative performance of different equity strategies belies this narrative (see figure 8). Through September, growth stocks have trounced value stocks across all market caps (large, mid, small), and large beat small across all style categories (growth, core, value). This pattern is *the opposite of what historically happens in an economic reacceleration* and is much more consistent with a sustained slowdown. Had the stock market been driven by a truly rebounding economy, we would expect small caps and value stocks—because of their greater sensitivity to economic growth—to have taken the lead.

FIGURE 8: IN TRUE RECOVERIES, SMALL CAP AND VALUE OFTEN BEAT GROWTH—BUT THAT'S NOT THE CASE NOW

STYLE BOX PERFORMANCE: YTD THROUGH SEPTEMBER 22, 2023

	VALUE	CORE	GROWTH
LARGE	2.7%	13.7%	25.3%
MID	0.9%	4.0%	9.1%
SMALL	-1.0%	2.0%	4.6%

Source: FactSet and Neuberger Berman Research. Performance was calculated between 12/31/2022 and 9/22/2023. Performances shown are total return indices calculated using Russell 1000, Russell Midcap and Russell 2000 Indices for the Large, Mid and Small size categories. Past performance is not indicative of future results.

Oceans of liquidity, in our view, also drove excessive speculation in hope-filled corners of the market that have only tenuous links to broader economic growth—demonstrated by the rip-roaring year-to-date performance among crypto miners (up 548% through August 31), the NB Speculative AI Composite[16] (+112%) and Bitcoin (+94%). Meanwhile, more economically sensitive sectors, such as banking and materials, fared far worse, with the KBW Regional Banking Index and the ACWI Materials index falling by as much as 32% and 4%, respectively, during the same period.[17]

Now we fear a looming *drain* on liquidity—expected in the second half of the year—could sap investors' appetite for risk. (For more detail, see our last quarterly report.) Indeed, that process may already have begun: Since July 31, both economically sensitive and speculative swaths[18] of the market have declined between 9% and 15%, while crypto miners—the stars of the recent rally—have shed a whopping 61%.[19]

We believe these are early warning signs of an important inflection point in investors' willingness to embrace portfolio risk. Hence, *we maintain our cautious stance and advise investors to consider lowering portfolio beta and increasing earnings quality and defensiveness across all styles, sectors and regions.* (For more details, see our table of "Investment Themes and Views.")

Extra Tip for Tech Investors: Beware Widening Credit Spreads

It may come as a surprise to some that, unlike in 2022, the Technology sector's performance in 2023 has not followed the fluctuations in the 10-year bond yield. In fact, Technology (along with Communication Services and Consumer Discretionary) has moved most strongly with Baa yield spreads.

We believe tech investors should pay strict attention in the months to come. As spreads widen, leading stocks (including the "Magnificent Seven") within these three sectors could suffer—most notably in Tech, which has been the clear leader in the recent equity rally.

Indeed, this relationship is nothing new. Since 1990, the Nasdaq 100 peaked a median 55 days after a trough in Baa credit spreads (see figure 9). The dot-com era, with its raging animal spirits, was no exception to this trend.

FIGURE 9: WIDENING BAA SPREADS COULD PORTEND A PEAK IN THE TECH SECTOR

Trough in Moody's Baa Corporate Bond Spreads	Nasdaq 100 Peak	Difference (Days)
04/25/1990	06/13/1990	49
01/27/2000	03/27/2000	60
07/03/2007	10/31/2007	120
02/15/2011	07/22/2011	157
07/31/2018	08/29/2018	29
12/31/2019	02/19/2020	50
11/10/2021	11/19/2021	9
Average		**78**
Median		**55**

Source: Neuberger Berman Research and FactSet. Data as of August 31, 2023.

[16] Past performance is not indicative of future results. The NB Speculative AI Composite is an equally weighted index of 30 AI-linked stocks with high-beta, high-volatility, high-valuation and low-earnings-quality characteristics. This composite is used for Neuberger Berman Research purposes only and not offered for investment.

[17] FactSet.

[18] These include areas tracked by the S&P 500 High Beta ETF, Bitcoin, NB Speculative AI Composite, KBW Russell 2000, Russell Microcap Index, Regional Banking Index, Philadelphia Housing Index, and Philadelphia Semiconductors Index.

[19] Neuberger Berman Research and FactSet. Past performance is not indicative of future results.

The link between Tech and credit spreads may seem counterintuitive given that the Tech sector is not a net borrower in the credit markets. Yet we believe Tech, like credits spreads, moves cyclically with the economy, and perhaps more than the market appreciates. Even beloved giants, like the currently acclaimed "Magnificent Seven," are not immune to rising economic stress. Example: Google shot up 47% in just under three months, between August 20 to November 6 of 2007, only to plummet 65% (more than the stock market) when the Great Recession hit in 2008. This was a company that had its best growth years still ahead and yet was not treated like a defensive holding.

While corporate credit spreads have yet to widen significantly this year, we believe Tech investors should be prepared to relinquish their thematic optimism and consider underweighting the sector, which we believe is broadly over-owned, overconcentrated in a few stocks and overvalued on many measures.

For additional context on how we think the economy's trajectory could impact the equity markets, please see figure ***A1: Five Economic Scenarios and Their Potential Implications for Equities*** *in the following Appendix. And for a look at both 1) how much median recessionary sell-off has already been priced in, and 2) how much farther various markets would have to fall from current levels in order to match their typical recessionary retreats, please see figure* ***A2: How Much Recessionary Decline Is Already Priced In—And How Much Isn't.***

Appendix

FIGURE A1: FIVE ECONOMIC SCENARIOS AND THEIR POTENTIAL IMPLICATIONS FOR EQUITIES

	NO RECESSION		RECESSION	
Peak-to-Trough Change Estimate	**EPS Return to Trend**	**Strong Slowdown**	**Mild**	**Disinflationary**
Peak S&P 500 NTM EPS ($/share)	240	240	240	240
Est. EPS y/y	-8%	-10%	-20%	-24%
Est. NTM EPS at Trough	221	216	192	182
Peak NTM P/E	21.4	21.4	21.4	21.4
Est Change in NTM P/E Ratio	6%	-15%	-15%	-25%
Est. S&P 500 NTM P/E Ratio at Trough	22.7	18.1	18.1	16.0
Est. S&P 500 at Trough	**5000**	**3900**	**3500**	**2900**

Prior Mild Recessions: Δ Agg. Economic Activity >-4%, or ΔRGDP>-2% [1960, 1969, 1980, 1990, 2000]
Prior Disinflationary Recessions: ΔNGDP<-6% [1948, 1953, 1957, 1981, 2008, 2020]
Prior Severe Recessions: Δ Agg. Economic Activity <-6.5%, or ΔRGDP<-3% [1973, 2008, 2020]
*Analysis includes only the recessions starting in 1980 onwards. Oil prices were not set by the market before that.

FIGURE A2: HOW MUCH RECESSIONARY DECLINE IS ALREADY PRICED IN—AND HOW MUCH ISN'T

Index	Median Recessionary Market Decline	Decline From Recent Peak Since January 2021	Current/Median Decline Ratio	% Decline Required to Match Recessionary Median Decline
MSCI India	-60%	-7%	12%	57%
MSCI Brazil	-62%	-25%	40%	50%
Russell 1000 Growth	-51%	-14%	27%	43%
Russell Midcap Growth	-57%	-26%	46%	41%
MSCI Japan	-47%	-17%	37%	36%
MSCI EM ex-China	-49%	-21%	43%	36%
Russell Midcap Value	-44%	-15%	35%	34%
MSCI EMU	-43%	-16%	36%	32%
Russell 1000 Value	-39%	-10%	26%	32%
MSCI United Kingdom	-38%	-10%	27%	31%
S&P 500 Div. Aristocrats	-36%	-9%	25%	29%
MSCI World Index	-37%	-11%	31%	29%
Russell 2000 Value	-45%	-23%	52%	28%
S&P 500	-35%	-10%	28%	28%
MSCI EAFE	-38%	-14%	37%	28%
MSCI AC World	-37%	-13%	34%	28%
Russell Midcap	-40%	-19%	46%	27%
Russell 2000 Growth	-51%	-34%	66%	26%
MSCI China	-64%	-55%	85%	21%
Russell 2000	-38%	-27%	72%	15%
MSCI EM (Emerging Markets)	-42%	-33%	79%	13%

Source: FactSet and Neuberger Berman Research. Median decline associated with the recessions starting in 1990, 2000, 2008, and 2020. Data as of September 19, 2023. Past performance is not indicative of future results.

S&P 500 Sectors	Median Recessionary Market Decline	Decline From Recent Peak Since January 2021	Current/Median Decline Ratio	% Decline Required to Match Recessionary Median Decline
Information Technology	-43%	-9%	22%	37%
Real Estate	-56%	-33%	59%	35%
Energy	-37%	-5%	13%	33%
Industrials	-38%	-8%	21%	32%
S&P 500	-35%	-10%	28%	28%
Health Care	-32%	-9%	28%	25%
Utilities	-38%	-19%	48%	24%
Materials	-32%	-13%	42%	21%
Communication Services	-39%	-23%	59%	21%
Financials	-35%	-19%	53%	20%
Consumer Discretionary	-35%	-24%	69%	14%
Consumer Staples	-20%	-12%	60%	9%

Source: FactSet and Neuberger Berman Research. Median decline associated with the recessions starting in 1990, 2000, 2008, and 2020. Data as of September 19, 2023. Past performance is not indicative of future results.

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Index Definitions

The **S&P 500 Index** consists of 500 U.S. stocks chosen for market size, liquidity and industry group representation. It is a market value-weighted index (stock price times number of shares outstanding), with each stock's weight in the Index proportionate to its market value.

The **MSCI China Index** captures large and mid cap representation across China A shares, H shares, B shares, Red chips, P chips and foreign listings (e.g. ADRs).

The **MSCI India Index** is designed to measure the performance of the large and mid cap segments of the Indian market.

The **MSCI Japan Index** is designed to measure the performance of the large and mid cap segments of the Japanese market.

The **MSCI EMU Index** (European Economic and Monetary Union) captures large and mid cap representation across the 10 Developed Markets countries in the EMU.

The **MSCI EAFE Index** is an equity index which captures large and mid cap representation across 21 Developed Markets countries* around the world, excluding the U.S. and Canada.

The **MSCI Emerging Markets Index** captures large and mid cap representation across 24 Emerging Markets (EM) countries. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Kuwait, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

The **MSCI ACWI** captures large and mid cap representation across 23 Developed Markets (DM) and 24 Emerging Markets (EM) countries. DM countries include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the U.K. and the U.S.. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Kuwait, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

The **MSCI World Index** captures large and mid-cap representation across 23 Developed Markets (DM) countries. DM countries include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the U.K. and the U.S.

The **MSCI United Kingdom Index** is designed to measure the performance of the large and mid cap segments of the U.K. market.

S&P 500® Dividend Aristocrats® measure the performance of S&P 500 companies that have increased dividends every year for the last 25 consecutive years.

The **Russell 1000® Growth Index** measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 companies with relatively higher price-to-book ratios, higher I/B/E/S forecast medium-term (2-year) growth and higher sales-per-share historical growth (5 years).

The **Russell 1000® Value Index** measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with relatively lower price-to-book ratios, lower I/B/E/S forecast medium-term (2-year) growth and lower sales-per-share historical growth (5- years).

The **Russell 2000® Growth Index** measures the performance of the small-cap growth segment of the U.S. equity universe. It includes those Russell 2000 companies with relatively higher price-to-book ratios, higher I/B/E/S forecast medium-term (2-year) growth and higher sales-per-share historical growth (5-years).

The **Russell 2000® Value Index** measures the performance of the small-cap value segment of the U.S. equity universe. It includes those Russell 2000 companies with relatively lower price-to-book ratios, lower I/B/E/S forecast medium term (2 year) growth and lower sales per share historical growth (5-years)

The **Russell 2000® Index** measures the performance of the small-cap segment of the U.S. equity universe. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership.

The **Russell Midcap® Growth Index** measures the performance of the midcap growth segment of the U.S. equity universe. It includes those Russell Midcap Index companies with relatively higher price-to-book ratios, higher I/B/E/S forecast medium-term (2-year) growth and higher sales-per-share historical growth (5-years).

The **Russell Midcap® Value Index** measures the performance of the midcap value segment of the U.S. equity universe. It includes those Russell Midcap Index companies with relatively lower price-to-book ratios, lower I/B/E/S forecast medium-term (2-year) growth and lower sales-per-share historical growth (5-years).

The **Russell Midcap® Index** measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Midcap Index is a subset of the Russell 1000® Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership.

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