

TOP *of* MIND

EQUITY BEAR MARKET: A PARADIGM SHIFT?



Against a backdrop of sky-high inflation, rising rates, and growing recession concerns, the S&P 500 has had its worst start to the year since 1962, with the tech-heavy Nasdaq and unprofitable Growth companies performing even more dismally. Whether equity markets are in the midst of a paradigm shift and what's in store for them ahead is Top of Mind. For answers, we speak with ARK's Cathie Wood, AQR's Cliff Asness, GSAM's Darren Cohen, GS GIR's David Kostin, and GS analysts. The one commonality in their disparate views: good buying opportunities can be found in equity markets today. While Wood still favors innovative Growth companies, Asness beats the drum for Value. But with investors reluctant to re-engage without

greater clarity on if equities have troughed, GS strategists find that a likely coming peak in inflation is probably not sufficient to see the bottom, and that similar past drawdowns have only ended when the Fed has shifted towards easier policy. So, for now, they recommend investors reduce portfolio duration and increase exposure to real assets.



Disruptive innovations... will cut across every sector, every industry, and almost every company. That means that the traditional world order will be disintermediated, disturbed, disrupted, or destroyed... The growth from these [innovation] platforms will shock people.

- Cathie Wood

I'm confident that Value can continue to outperform over a medium-term horizon precisely because the valuation spread between Value and Growth remains incredibly stretched.

- Cliff Asness

You can only lose money for so long before investors stop suspending their disbelief about [unprofitable tech] companies' paths to profitability. And given capital is no longer essentially free, it'll be very hard to see a re-rating of unprofitable tech.

- David Kostin



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WHAT'S INSIDE

INTERVIEWS WITH:

- Cathie Wood**, Founder, CEO, and CIO, ARK Invest
- Cliff Asness**, Founder and CIO, AQR Capital Management
- David Kostin**, Chief US Equity Strategist, Goldman Sachs
- Darren W. Cohen**, Co-head of Growth Equity, Goldman Sachs Asset Management

WHAT MAKES A TROUGH THE TROUGH?

Vickie Chang, GS Markets Research

RETAIL INVESTORS: NO LONGER BUYING THE DIP

John Marshall, GS Derivatives Research

EQUITIES: AN INFLATION PEAK RELIEF?

Sharon Bell, GS European Equity Strategy Research

EQUITIES: POSITIONING FOR CHANGE

Peter Oppenheimer, GS Equity Strategy Research

US INTERNET STOCKS: SUFFICIENTLY DE-RATED?

Eric Sheridan, GS Equity Research

TAKING STOCK AFTER THE CORRECTION

Christian Mueller-Glissmann, GS Multi-Asset Strategy Research

...AND MORE

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Macro news and views

We provide a brief snapshot on the most important economies for the global markets

US

Latest GS proprietary datapoints/major changes in views

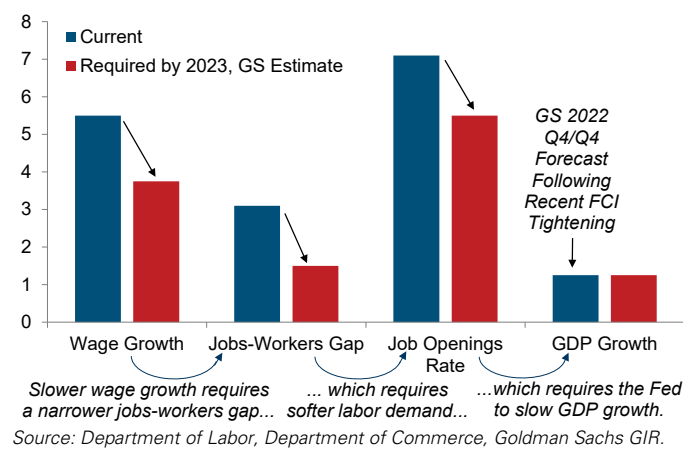
- We now expect 75bp Fed rate hikes in June and July (vs. 50bp at each previously) and a 50bp hike in Sept (vs. 25bp previously) following the most recent upside CPI surprise and further rise in Michigan consumer survey's measures of long-term inflation expectations; as a result, we raised our terminal rate forecast to 3.25-3.5%.
- We lowered our 2022/2023 Q4/Q4 GDP forecasts to 1.25%/1.5% on the back of recent FCI tightening; as a result, we raised our YE22/23 unemployment forecasts to 3.5%/3.7%.

Datapoints/trends we're focused on

- Recession risk; we still see a narrow path to a soft landing.

Below-potential growth, but not a recession

Slowdown needed to rebalance labor market and calm wage growth, %



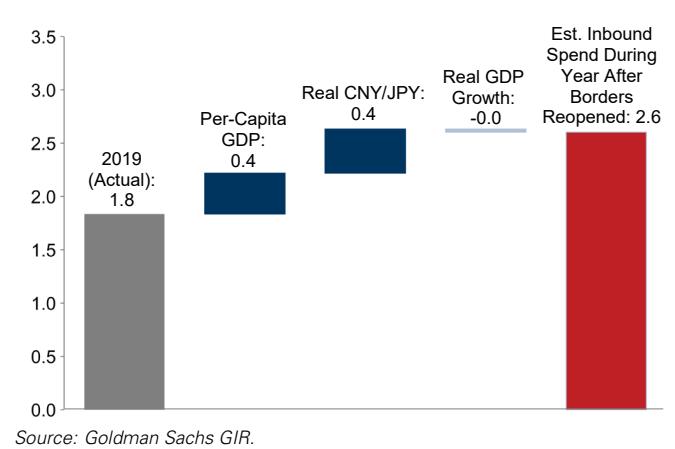
Japan

Latest GS proprietary datapoints/major changes in views

- No major changes in views.
- **Datapoints/trends we're focused on**
- Economic activity, which we expect to turn positive in 2Q22 on the back of a lifting of Covid precautionary measures.
- BoJ, which we expect to be among the last central banks in the Asia-Pacific region to begin to tighten monetary policy.
- Chinese annual inbound spending, which we estimate would total ¥2.6tn (~0.5% of GDP) if Chinese tourists were fully permitted into Japan and recent yen weakness continued.
- Industrial production, which we think will remain sluggish for now due to China's zero-Covid policy and the war in Ukraine.

Good prospects for Chinese inbound spending

Est. ann. inbound spend once Japan fully reopens to China tourists by change, ¥tn



Europe

Latest GS proprietary datapoints/major changes in views

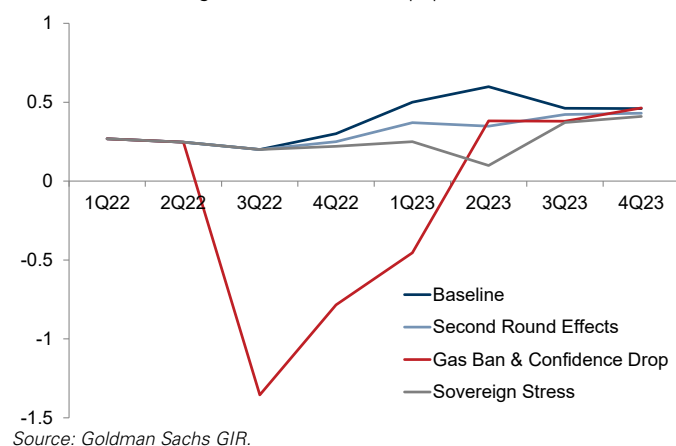
- We raised our YE23/24 EA core inflation forecasts to 2.2%/2.1% on the back of the re-intensification of bottlenecks, higher wage growth, and recent Euro weakness.
- Following a 25bp liftoff at the July meeting, we now expect the ECB to deliver 50bp hikes in September and October, and look for a terminal rate of 1.75% in June 2023.
- We revised our BoE call to include more tightening (now expect it to hike 25bp in back-to-back meetings through Feb 2023) to reflect more persistent wage and inflation pressures.

Datapoints/trends we're focused on

- Russia gas disruptions, which would sharply weigh on growth.

Sharp gas risks to Euro area growth

Euro area real GDP growth scenarios, % qoq



Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

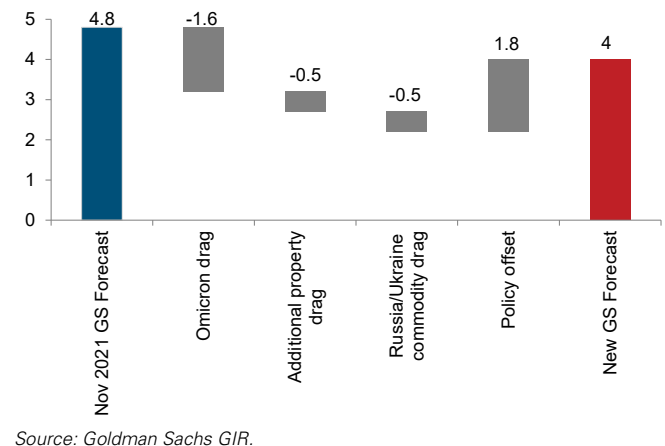
- We lowered our 2022 China GDP forecast to 4% following exceedingly weak April data on the back of Covid lockdowns.
- We recently lowered our CY22/23 India ann. GDP forecasts to 7.7%/5.7% to account for recent FCI tightening and our expectation that higher inflation will weigh on incomes.

Datapoints/trends we're focused on

- China's post-lockdown growth recovery, which we expect to be less V-shaped than in spring 2020 due to unsynchronized lockdowns and reopenings across major cities.
- EM monetary policy; we expect it to be tighter for longer in the Andeans and further tighten across much of CEEMEA.

Slower expected growth in China

Drivers of 2022 China GDP growth (relative to 2021), % yoy



Equity bear market: a paradigm shift?

Against a challenging backdrop of sky-high inflation, rising rates, and growing recession concerns, the S&P 500 has had its worst start to the year since 1962. The dismal equity performance has been even more stark for the tech-heavy Nasdaq and unprofitable Growth companies, which are down by 31% and 56% YTD, respectively, raising the question of whether the long era of tech and Growth equity leadership has come to an end. Whether markets are indeed in the midst of a paradigm shift, where equities are heading from here, and what that means for investors, is Top of Mind.

To answer these questions, we first turn to three equity market heavyweights: Cathie Wood, Founder, CEO, and CIO of ARK Invest, Cliff Asness, Founder and CIO of AQR Capital Management, and David Kostin, GS Chief US Equity Strategist. Given their distinct approaches to equity market investing, it's no surprise that their views on whether equity markets are undergoing a fundamental shift and how investors should be positioned from here differ. Wood, whose closely followed ARKK ETF of innovative, high-growth companies skyrocketed throughout much of the pandemic only to fall sharply as of late, believes that tech and Growth equity leadership isn't over, and argues that the fall from favor for many unprofitable Growth firms will soon reverse given that inflationary headwinds are already easing and these companies are set to uproot the traditional world order.

Asness, in contrast, sees a fairly extreme shift in the offing, arguing that the long era of low and falling inflation/rates and subsequent Growth dominance since the Global Financial Crisis has likely given way to a period of sustained Value outperformance. In particular, he believes that valuations for both profitable and unprofitable Growth had expanded way too much during the last bull market, and notes that while the recent Value rally has started to close the Growth-Value valuation gap, it remains near all-time highs, leaving more room for Value outperformance to run.

Kostin comes down somewhere between Wood and Asness. Rather than a paradigm shift per se, he argues that the recent equity market drawdown has primarily been a rates story, as the market has moved from expecting just one 25bp Fed hike in 2022 late last year to ~14 25bp hikes today. While that has led to an especially large and indiscriminate de-rating of longer duration Growth companies—both profitable and unprofitable—he thinks that highly profitable, fast-growing companies will eventually re-rate higher, given their superior earnings growth and outsized ability to repurchase shares, but disagrees with Wood that unprofitable tech will do so as well, as raising capital amid the challenging macro backdrop will likely prove difficult.

We then turn to Darren Cohen, co-head of Growth Equity in Goldman Sachs Asset Management, for his perspective on the reverberations of the recent Growth rout in private markets. While he argues that the paradigm of “growth at any cost” that characterized the past decade is likely coming to an end, he doesn't think that Growth equity—whether in the public or private markets—is dead, with the latter in particular remaining one of the few asset classes that can offer downside protection while also delivering 3-5x returns.

More broadly, Peter Oppenheimer, GS Chief Global Equity Strategist, makes the case that equity markets are entering a new “Post Modern” cycle characterized by higher inflation and interest rates, greater regionalization, scarce and expensive energy and labor, more government spending, and an increased focus on margin stability, which is likely to see “fatter and flatter” equity returns than in the last cycle.

So how should investors position from here? Wood believes that investing in innovation still makes a lot of sense, and argues that recent decisions by many investors to pivot away from innovation will prove to be just as wrong as the decision to pivot *towards* innovation during the 2000 tech bubble. Cohen generally agrees with the innovation thesis, although he cautions that investing in innovation only makes sense if it's done at the right price. Oppenheimer also makes the case for investing in companies that can innovate, disrupt, enable, and adapt, and, within the hard-hit US internet sector in particular, GS senior US internet analyst Eric Sheridan recommends investing in companies that provide solid top-line growth and are more likely to be able to weather a potential economic downturn.

But Asness is sticking with the Value trade. And Kostin, for his part, believes that portfolios should mirror the risks in the economy today. So, with GS US economists seeing around a 1/3 probability of a US recession and 2/3 chance of a soft landing in the next couple of years, he recommends a roughly 1/3 allocation to equities with a “margin of safety” even if earnings fall and a 2/3 allocation to faster-growing, highly profitable companies and high-dividend stocks.

The one common thread in these disparate recommendations: good buying opportunities can be found in equity markets today. But investors may be reluctant to re-engage without greater clarity on whether equities have troughed. Indeed, John Marshall, GS Head of Derivatives Research, finds that unlike in recent years when retail investors have tended to buy the dip, they aren't doing so this time around. So a key question facing investors is, when will equities bottom?

Given the current substantial focus on inflation, Sharon Bell, GS senior European portfolio strategist, looks at history to determine that passing the peak in headline inflation is probably a necessary—but not sufficient—condition for equities to find their bottom. And Vickie Chang, GS market strategist, also uses historical experience to conclude that the Fed-driven nature of the recent drawdown means it's most likely to come to a sustainable end when the Fed shifts towards easier monetary policy.

So, given the risk that equities have further to fall, GS senior multi-asset strategist Christian Mueller-Glissmann recommends investors reduce portfolio duration by focusing on equities with lower valuations and higher dividend payout ratios, as well as increase their exposure to real assets like commodities, real estate, and infrastructure.

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Interview with Cathie Wood

Cathie Wood is Founder, CEO, and CIO of ARK Invest. Previously, she was CIO of Global Thematic Strategies at AllianceBernstein. Below, she argues that investing in innovation still makes sense, as inflationary headwinds are easing, and as innovative firms are set to disrupt and change the world.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: You have long been a proponent of investing in disruptive technologies, but many of the stocks exposed to these technologies have been hit hard recently. Why has market sentiment turned so swiftly against these stocks, and does that investment thesis still make sense?

Cathie Wood: Yes, the thesis is still solid, but you are right that the market has turned sharply and swiftly. From the pandemic trough to our peak in February 2021, our flagship strategy was up 360%. But as people got vaccinated and the world started normalizing, fears of inflation and higher interest rates began to surface in a more serious way, and it began underperforming. I have rarely been in an upmarket in which our strategy didn't outperform, and yet, as the broader market pushed to all-time highs in late December 2021, it was down over 50%. It was a true shock. Why did that happen? One big reason was risk aversion in the markets generally, which prompted investors to pivot back to the benchmarks against which portfolio managers and analysts are measured. The stocks we invest in are not in the benchmarks, so, by definition, they were being sold. In response, we concentrated our portfolios in our highest-conviction names, reducing the number of companies in our flagship strategy from roughly 58 names to less than 40. Many people thought that was crazy, that concentration in a risky environment is a risky strategy. But, to us, it was a way to control risk because we leaned into the risk we felt most strongly about and culled risk elsewhere. This strategy has worked well for us over time, but as inflation, rates and growth concerns increased in recent months, our performance continued to suffer.

Allison Nathan: How concerned are you that these same macroeconomic factors will continue to weigh on your performance in the coming months?

Cathie Wood: We are not overly concerned because we're already seeing signs that inflationary pressures are beginning to ease. We have long believed that the current inflation surge is a one-time shock to the system, although it has lasted a lot longer than we initially expected. I've never seen supply chain issues take this long to work out, and we didn't expect Russia to invade Ukraine—both of which have extended the duration of the inflationary shock. But inflationary pressures have begun to unravel, as reflected in declining global shipping rates and record-high inventory levels at the major retailers—that are up by as much as 30-40% yoy—which is forcing them to reduce prices to clear their shelves. And, on the labor side, the sector that suffered from the biggest post-pandemic worker shortages—retail—has seen average hourly earnings growth decline from a peak of 20% yoy in late 2020 to the 3-4% range today, which is below total average hourly earnings for the

economy as a whole. So, while many people won't believe it until we see clearer evidence in the data, especially as oil prices remain elevated, I do think we are on the other side of the inflation problem. I also take comfort in what the level of long-term rates is telling us about inflation. The 10y US Treasury yield, which has historically closely tracked nominal GDP growth, is currently sitting at around 3%, indicating that nominal GDP growth over the next decade will average around 3%. If inflation persistently remained in the mid- to high-single digits, that would translate to a decade of negative real growth, which seems highly unlikely. So, I think the rates market is telling us that inflation will eventually come down to levels consistent with positive real growth, and have been surprised that more investors don't seem more reassured by this.

Allison Nathan: Even if we are on the other side of the inflation problem, isn't the recent rout for Growth companies telling us that prices and valuations for certain stocks, particularly those of unprofitable companies, rose way too far, not unlike during the dot-com bubble?

Cathie Wood: While the peak-to-trough drop for our flagship strategy has been as big as the Nasdaq's drop during the 2000 tech bust, [two important differences](#) stand out between then and now. First, during the dot-com bubble, many companies were chasing a dream and simply shouldn't have existed. Too much capital was chasing too few opportunities too soon. The technologies weren't ready for prime time—artificial intelligence (AI) and deep learning, for example, didn't have their big breakthrough until 2012. And even if the technologies were somewhat ready, the costs were prohibitive. The cost to sequence one whole human genome at the time was \$2.7 billion. Today, that cost has fallen to \$500 and is continuing to decline. And AI is here. Cloud is here. Gene editing is here. So the dream back then is now a reality.

Second, many people have denigrated our strategies as “profitless tech”, “concept capital”, or “tech wreck”—terms you didn't hear during the tech bubble. That's a beautiful thing in some ways because it means that a lot of negative news is already priced in. Yet, despite that pessimism, 2022-2024 consensus estimates of revenue growth for our portfolios are in the 25-27% range. If this were a replay of the tech bubble, our portfolios would be showing negative expected revenue growth. The consensus estimate for the gross margins of our companies, which we believe provides a sense of the underlying profitability of our companies, also has them moving up slightly, whereas margins were moving down at this point in the tech bust. Despite these differences, investors are still running for the hills—towards their benchmarks—a decision we think will prove to be as wrong as racing towards the dream was during the dot-com bubble.

Allison Nathan: But does the fact that many of these companies are unprofitable in an environment where capital is becoming more scarce and expensive worry you?

Cathie Wood: The biggest source of unprofitability in our portfolio comes from our genomics investments. But I'm not overly concerned about these companies running out of capital, for two reasons. First, big pharma companies will need to fill their genomics pipelines, either by buying or licensing the IP from our companies or ones similar to them, or partnering with them and making milestone payments. Second, many of these companies raised cash during the boom in 2020, understanding that they would be in cash-burn situations for a long time, so they are currently cash rich. A few are not. But some of these companies where funding concerns have grown possess extremely valuable proprietary data or assets that we think will eventually make them the most important companies in the world in their fields. So we feel about these companies the way that we felt about Tesla in early 2019, when many people feared it was going to run out of cash and go bankrupt. If the markets are open, these companies will not run out of cash.

Allison Nathan: With so many companies out there selling good stories rather than clear profits, how do you discern between the winners and losers?

Cathie Wood: The screen for our portfolios is our research rather than benchmarks, which we ignore because benchmarks are more about what has happened historically than what will happen in the future. And we organize analyst responsibilities by technology, not by sector or industry, focusing on five key platforms: genomic sequencing, adaptive robotics, energy storage, AI, and blockchain technology. We have specialists in 14 technologies who conduct first principles-based research that helps determine the most promising technologies, which companies are leading the charge on them, who's driving costs down the fastest, and who's gathering the most data. We then perform bottom-up analysis and put companies through our scoring system, which pushes certain names to the top based on their ability to drive and sustain innovation.

Allison Nathan: Even if a company has a very compelling technology, shouldn't price be a consideration in portfolio selection, or is innovation at any price worthwhile?

Cathie Wood: Despite ARK's reputation, price is absolutely a consideration in our process. At our peak in 2021, we took substantial profits and diversified into cash-like innovation companies because we knew we would get an opportunity to buy some of these high flyers at lower prices. That said, our valuation framework is focused on a five-year investment horizon, which is admittedly a luxury in this market. The enterprise value (EV) to EBITDA on this year's earnings for our portfolios is close to 70x, versus around 17x for the S&P 500. But if you take our forecasts for cost declines and unit growth explosions five years out, our portfolios are selling at roughly today's market multiple of 17x EV to EBITDA. So, we are basically assuming that our valuations will face a 20% compound annual rate of headwinds over the next five years. Do we really believe that will be the case? No, because many of these companies will still be in the very early stages of our S-curve cycles of innovation adoption. But we focus on market multiples to make sure that our portfolio companies have growth dynamics, in terms of revenues, margins, and ultimately EBITDA, that will pass the test of time.

Allison Nathan: All that said, amid the current macro headwinds, Value strategies have been outperforming, and some people argue this outperformance is set to continue for several more years. Why don't you agree?

Cathie Wood: The pivot to Value began in late 2020 and went into overdrive over the last year as energy prices soared. But, while some people think oil prices will remain elevated, we'd take the other side of that trade. We believe that the demand destruction taking place right now is massive, and that oil demand peaked in 2019, especially since the electrification of transportation is gaining more share than anyone imagined.

More broadly, we believe that the disruptive innovations associated with the five platforms I mentioned will cut across every sector, every industry, and almost every company. That means that the traditional world order will be disintermediated, disturbed, disrupted, or destroyed. And Value, which thrives in an inflationary world, will be under pressure. At its core, innovation is highly deflationary. Take electric vehicles (EV) as an example. For every cumulative doubling in the number of EVs produced and sold, the cost of EV batteries should drop by 28%. And as costs and prices decline, sales could skyrocket. We estimate that EV sales will rise from 4.8 million in 2021 to 40 million in 2026, approaching nearly half of all cars sold. That will be a dagger in the heart of the oil industry because transportation, broadly defined, accounts for 60% of oil consumption. And for these reasons we believe that Value is actually in harm's way based on the five platforms that are evolving very quickly right now. The growth from these platforms will shock people.

So I don't believe that Value will continue to outperform, especially in the recessionary environment that I think we're already in across major regions, because the Value sector needs strong cycles to survive. I therefore think investors should take profits from Value and move them into Growth, although investors have to be careful with Growth too, because some of the disruptors of the last decade are now themselves being disrupted. We don't own the FAANGs, for example, in most of our portfolios, but instead focus on the most innovative names that are often underweighted in or completely absent from the major benchmarks.

Allison Nathan: What risks to your strategy most worry you?

Cathie Wood: The biggest risk is that our companies that have taken a beating will be taken over at current very low valuations, in which case we'd incur permanent losses. So we will fight tooth and nail against larger companies if they try and pluck these companies up for their superior assets at bargain-basement prices. And our second biggest risk is that clients become unnerved by all the negative talk out there and redeem. So far this year, we have seen net positive flows in our flagship strategy as clients appear to be averaging down and as we have been increasingly transparent with our research to try to educate investors about the opportunities they could potentially give up if they sell now. I hope that continues to work, because it would be unfortunate for investors to turn what are very likely temporary losses into permanent losses just as I think the stars are aligning for us.

Interview with Cliff Asness

Cliff Asness is a Founder, Managing Principal, and Chief Investment Officer of AQR Capital Management. Previously, he was Director of Quantitative Research for Goldman Sachs Asset Management. Below, he argues that Value stocks will likely continue to outperform Growth after an admittedly dismal decade for Value following the Global Financial Crisis.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: Are we in the midst of a paradigm shift in equity markets amid the recent sharp selloff in Growth and outperformance of Value?

Cliff Asness: If the paradigm since the Global Financial Crisis (GFC) has been one of low and falling interest rates and inflation, Growth stock

outperformance, and Value doing poorly to some degree, then by definition we're seeing a pretty extreme shift. Driving this shift are two factors. First, equity valuations coming into the current period were pretty crazy. This was particularly the case when looking at [our preferred measure](#) of the valuation spread between Value and Growth stocks, which surpassed even tech bubble-highs a little over a year ago, and have only narrowed marginally since then.

Second, the sharp interest rate moves this year were the catalyst that kicked the rotation from Growth to Value in equity markets that was already underway into high gear. I've never been a strong believer that the sharp drop in interest rates fully justified the high market valuations and divergence between Growth and Value in recent years. But the rates reversal has clearly played an important part in the recent Value rally because as long as the world believes that Value is an interest rate trade, investors are going to be somewhat hostage to that view, at least over the near term. Looking ahead, I'm confident that Value can continue to outperform over a medium-term, say, three-year, horizon precisely because the valuation spread between Value and Growth remains incredibly stretched, which would represent a stark break from the post-GFC cycle where Value delivered somewhere between subpar and dismal returns.

Allison Nathan: But is the recent period of Value outperformance mostly an interest rate story that could swiftly reverse if and when interest rates fall again?

Cliff Asness: No. Our research finds no evidence that higher interest rates are necessary for Value to outperform. Of course, I recognize the logic that lower rates benefit companies with cash flows further out into the future. But it's also the case that one of the reasons Value strategies tend to outperform in the long run is because investors overestimate how long Growth companies will grow. While Value has typically performed better when interest rates were rising over the past five to ten years, that hasn't been true over longer horizons, and the tech bubble took place in the shadow of very high interest rates. It's also worth noting that the recent Value rally, at least as we define it, actually started over a year ago, before the sharp rise in inflation and interest rates. So, whether I'm right on Value outperforming for the next three or more years will come down to the accuracy of my initial judgment that the current valuation

gap between Growth and Value is ridiculous. A catalyst like interest rates can influence *when* we make money, but not *whether* we make money, if there is indeed a big mispricing and we stick with the trade until that valuation gap closes and the mispricing resolves.

Allison Nathan: So you think the large valuation expansion for Growth firms and the outperformance of Growth versus Value in the last bull market simply went too far?

Cliff Asness: Yes, it went way too far both for profitable and unprofitable growth. At least with profitable firms, valuation ratios can actually make sense. But with unprofitable firms, any concept of valuation is far more challenging, and investing in them is really pure speculation. It's always possible that some company is the next Amazon, but out of a hundred such bets, almost all of them will end up being wrong. And let's take a step back and remember why Value outperforms on average over time; it's not because the world can't identify good companies. It's because the world, on average, pays too much for them. That's not to say that innovation is always overpriced, but I do think it is overpriced on average.

As for Value strategies, while the period since the GFC admittedly hasn't been good for them until recently, it's worth breaking this period into two parts. From roughly 2010 to 2017, Value delivered subpar returns, but that was in large part because Growth companies outperformed on fundamentals. So I would call that a rational loss for Value because it lost on the fundamentals. For our part, we ended up performing well through those years because our industry-neutral Value design outperformed a naive Value design and because we're a multi-factor quant investor that only sounds like a Value investor every two decades or so when there's a real mispricing. The rest of our strategies more than made up for the underperformance of Value over that period. In contrast, the period from 2018 to 2020 was pure multiple expansion that saw valuations balloon from reasonable to record-high levels in the span of three years. It's an understatement to say that anyone who cares about pricing a security on fundamentals didn't enjoy this period.

Fortunately, the last thing I was right about before Value started performing again early last year was back in 2017 when I had pushed back against the idea that it was time to pour into Value. Even though Value had been killed for seven straight years and we believed it was a good long-term strategy, the Value spreads we love so much still didn't look abnormal because the fundamentals themselves didn't look great. So Value stocks had cheapened, but that cheapening was more or less justified by the fundamentals. I wasn't smart enough to short Value heading into 2018, but I hope my pushback against Value strategies back then gives me some credibility now when

I say that current prices are crazy and Value should continue to outperform.

Allison Nathan: But what gives you confidence that the recent outperformance of Value will endure, especially given the very uncertain macro environment ahead?

Cliff Asness: Anyone who's 100% confident about where markets are going is, to use the technical term, nuts. Confidence is always measured in terms of probabilities. On the macro uncertainty I would just say that forecasting whether the Fed is going to go a little too far or not far enough, or if there's going to be a recession, is simply not our strong suit. Instead, we believe in a few simple things, namely that stocks with cheap prices, fundamental momentum, high-quality profits, and low risk tend to outperform over time.

And particularly on the Value factor—or the relative cheapness of certain stocks—even after the recent outperformance of Value, we're still sitting at valuation spreads not too far from those during the tech bubble, which at the time seemed like the craziest thing we'd ever see in our lifetimes. Our global Value spread is currently sitting at around the [95th percentile](#) versus history, and in terms of magnitude, is roughly 90% of its tech bubble high. Momentum is also at our backs, and quality and low-beta strategies are agreeing with Value more than usual in our multi-factor world. The last time we saw a similar such setup, which was around the tech bubble, Value outperformance persisted for quite a while. Admittedly, there aren't many sample periods to look at, which leaves us operating more in the world of scenario analysis than statistics. But I still think the odds are on our side, and while there may be some painful retracements along the way, we think we're right and are going to stick with that bet.

Allison Nathan: Is this really just an anti-tech, and especially unprofitable tech, play?

Cliff Asness: No. While much of the conversation about the recent equity market drawdown has centered around tech versus non-tech, everything we do in Value is industry-agnostic. Tech could actually stabilize while leaving our industry-diversified Value trade intact, though the two strategies are probably somewhat negatively correlated because of animal spirits, meaning that when investors are in the mood to buy expensive industries is correlated to when they like expensive stocks even in other industries. So if tech is going to the moon on any given day, my guess is we won't be having a good day owing to correlation, not causality. That said, the spread between tech and the S&P 500 is at about the 80th percentile relative to history, which is certainly high, but far from the extreme levels of recent years that would get me excited, and nowhere near as compelling as global Value spreads. So, I'm much more comfortable sticking with this Value bet as opposed to shorting [tech versus everything](#) else because the latter looks less egregiously priced versus history, is a far more concentrated trade, and represents too much of an anti-innovation at any price play.

Allison Nathan: So how are you positioned given the current balance of opportunities and risks?

Cliff Asness: We have a somewhat larger-than-normal Value tilt in our multi-factor portfolios. We also think trend-following, which on average makes money during downturns, has come into its own after a rough couple of years. More broadly, we take very little market directional risk outside of our pure trend-following products, and in our Value and Momentum strategies we only take a little where we're allowed, which I've referred to as "[sinning a little](#)". I don't recommend individual investors try to make a lot of money from market timing. But where we do take tactical tilts, which is mostly in our more general strategies that consider Value, Trend, and Quality, we're somewhat underweight equities and bonds relative to our normal level. And we're less underweight bonds and more underweight equities than we were six months ago. A big part of that is the recent strong rise in bond yields, which has left bonds looking somewhat less expensive today than six months ago, unless you expect inflation to remain in the high single-digits, in which case everything looks expensive. And, relatedly, while equities are down quite a bit, the decline hasn't been sharp enough to increase their relative attractiveness to bonds. Lastly, we have a long-standing preference for risk parity over 60/40 portfolios, and have long preferred a diversified portfolio that makes money from stocks, bonds, and commodities, and that's especially important today in an environment of high inflation where the equity-bond correlation may well turn sustainably positive.

Allison Nathan: What are your biggest concerns during this volatile period for equity markets?

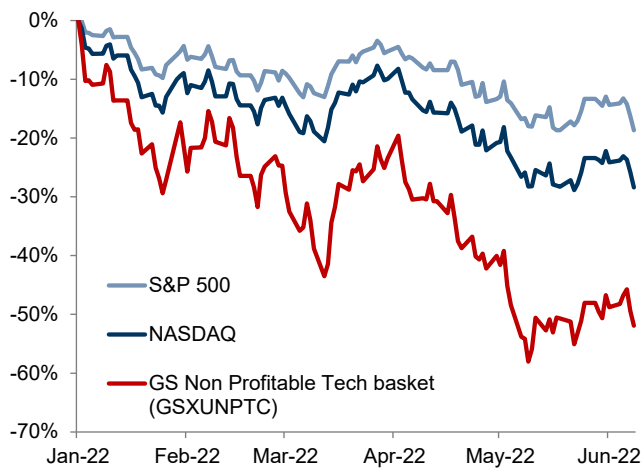
Cliff Asness: My overriding worry is that, in making a strong case for Value, we've somehow missed something. We've spent the better half of the last four years looking at Value and trying to prove to ourselves that we're wrong. Maybe for some reason higher interest rates or growth last longer than we expect, or factors such as companies' intangibles have led to mismeasurement. But I'm highly confident that we haven't missed something. Again, I'm not 100% confident. And I'd be a liar if I said I never think twice when someone presents a challenge to our argument, or makes the case that Growth looks cheap. But every time we've tested one of these theories, we've come to the conclusion that we're comfortable with our position.

My short-term worry is around the current very high levels of volatility. Market volatility is not at record highs—we are not at 1987 or 2008 levels—but the daily fluctuations in long/short Value and even more generally multi-factor returns are pretty close to all-time highs. And I would strongly prefer not to have to give back two-thirds of our gains so far this year only to make them back in the future. I do think we'd make them back, because I think our view that Value is still substantially mispriced will turn out to be right. But I wouldn't be telling the truth if I said that I don't fear the market's mood over any given few months could trump the strong fundamental picture that I've laid out in favor of sustained Value outperformance.

The anatomy of the equity drawdown

Unprofitable tech is down more than 50% YTD...

YTD price return, %



Note: GSXUNPTC is a GMD basket; data as of June 10, 2022.
Source: Bloomberg, Goldman Sachs, Goldman Sachs GIR.

...as real yields have risen sharply back into positive territory

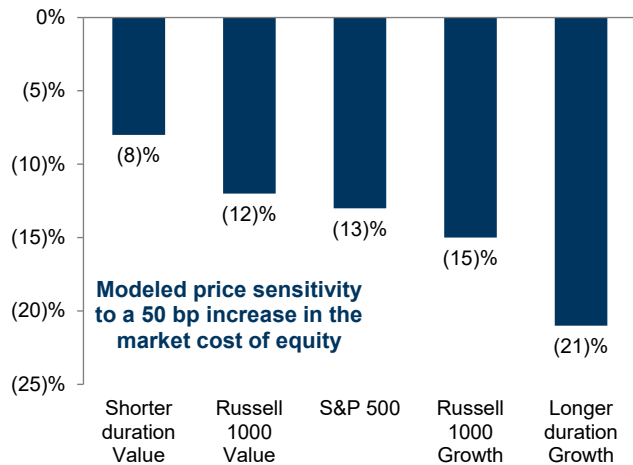
Yield, %



Data as of June 10, 2022.
Source: Bloomberg, Goldman Sachs GIR.

Rising rates have weighed on longer duration equities...

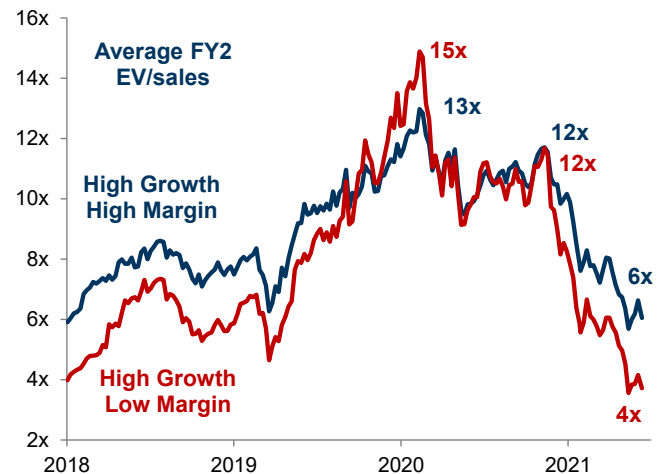
%



Note: Based on GS Dividend Discount Model.
Source: Goldman Sachs GIR.

...and both profitable and unprofitable Growth have de-rated

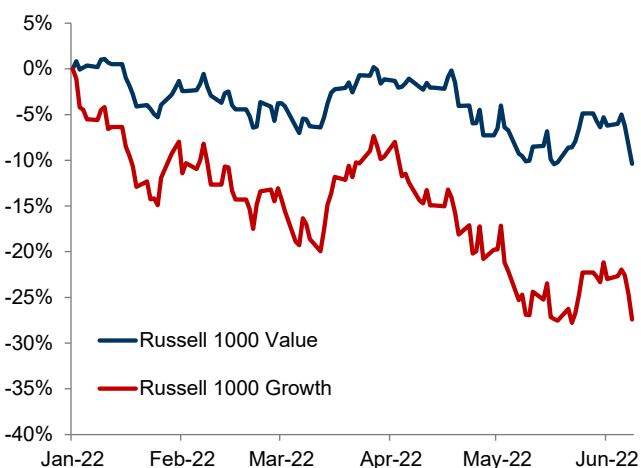
Av. FY2 EV/sales based on stocks in Russell 3000, ratio



Data as of June 10, 2022.
Source: FactSet, Goldman Sachs GIR.

Value has outperformed Growth amid the selloff...

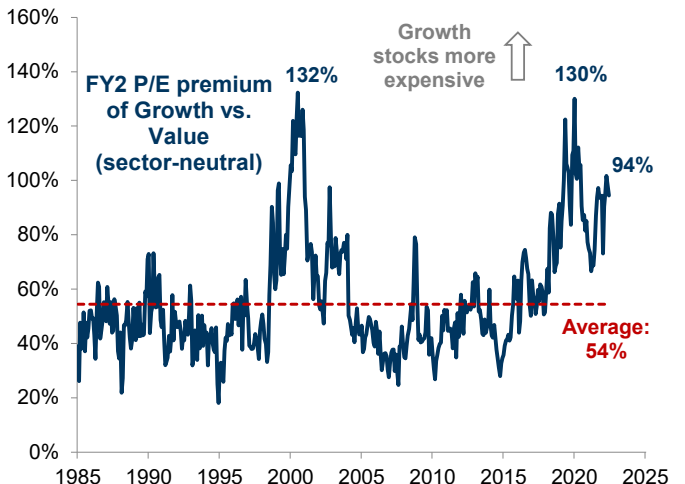
YTD price return, %



Data as of June 10, 2022.
Source: Bloomberg, Goldman Sachs GIR.

...but still trades at a sizable discount relative to history

FY P/E premium of Growth vs. Value, %



Data as of June 10, 2022.
Source: FactSet, Goldman Sachs GIR.

What makes a trough *the* trough?

Vickie Chang finds that the recent sharp drawdown in US equities is most likely to end when the Fed shifts towards easier policy

Since closing at an all-time high on January 3, 2022, the S&P 500 has had a turbulent go of it, raising the question of what it might take for equity fortunes to turn. To answer this, we looked at peak-to-trough S&P 500 corrections of more than 15% since 1950, finding that both a shift towards easier monetary policy and a bottoming in activity seem to occur relatively close to the market trough. But which of these two conditions is necessary to bring a sustained trough to equities after large drawdowns depends on the nature of the correction. In corrections driven by monetary tightening, the Fed has mattered more, while in deleveraging-driven corrections, the activity trough has been the more important signal.

History as a guide

Every market correction is different. Corrections during the 1950-1990 period were more often brought on by monetary policy tightening and oil shocks, while the largest corrections since 1990 have been brought on by retrenchment in the private sector after buildups of leverage. Global growth concerns and fiscal issues around sovereign debt have also played a role. For each of these corrections, we looked at whether there was a turning point in economic activity (as measured by the ISM) and whether there was a shift towards Fed easing in the three months before and after equities bottomed. At least one of these two conditions was met in all the episodes we consider, though often not both.

S&P 500 drawdowns of more than 15% since 1950

Peak	Trough	Draw down	Recession ?	Source	ISM trough +/-3m?	Fed easing +/-3m?
08/02/56	10/22/57	-21.6%	Yes	Monetary	Yes	Yes
12/12/61	06/26/62	-28.0%	No	Unclear	Yes	No
02/09/66	10/07/66	-22.2%	No	Monetary	No	Yes
11/29/68	05/26/70	-36.1%	Yes	Monetary	No	Yes
01/11/73	10/03/74	-48.2%	Yes	Monetary/Oil	Yes	Yes
09/21/76	03/06/78	-19.4%	No	Unclear	Yes	No
02/13/80	03/27/80	-17.1%	Yes	Monetary/Oil	Yes	Yes
11/28/80	08/12/82	-27.1%	Yes	Monetary	Yes	No
08/25/87	12/04/87	-33.5%	No	Financial Panic	Yes	Yes
07/16/90	10/11/90	-19.9%	Yes	Monetary/Oil	Yes	Yes
07/17/98	08/31/98	-19.3%	No	Financial Panic	No	Yes
03/24/00	10/09/02	-49.1%	Yes	Deleveraging	Yes	No
10/09/07	03/09/09	-56.8%	Yes	Deleveraging	Yes	No
04/23/10	07/02/10	-16.0%	No	Growth/Fiscal	Yes	No
04/29/11	10/03/11	-19.4%	No	Fiscal	Yes	Yes
09/20/18	12/24/18	-19.8%	No	Monetary	No	Yes
02/19/20	03/23/20	-33.9%	Yes	Pandemic	Yes	Yes

Source: Goldman Sachs GIR.

Fed-driven corrections: shift towards easing needed

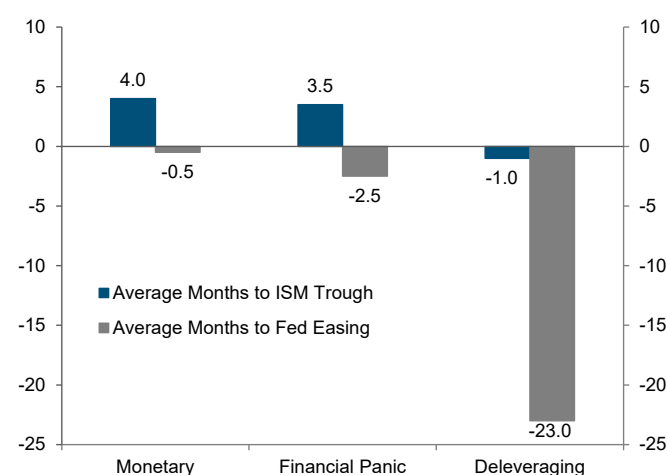
Episodes of monetary tightening that have generally led to growth slowdowns or recessions have been the most common cause of these corrections. We find that, on average, monetary-policy-driven equity corrections have bottomed when the Fed has shifted towards easing, regardless of whether activity has troughed. In fact, the activity trough has, on average, come several months after the market trough in these episodes. When the source of the correction is monetary tightening, a shift towards monetary easing has provided fairly immediate

relief to equities as the market anticipates that activity will eventually pick up. Financial panics, during which liquidity risk dominates—as in 1987 or 1998—have also generally been calmed by a shift in the Fed's policy stance.

Deleveraging-driven corrections: activity troughs needed

In deleveraging-driven corrections, the growth side seems to matter more. In these episodes, the activity trough has more clearly defined the market trough, irrespective of whether the Fed eased policy. While easing often occurred around these troughs, the easing cycle had generally been well underway. The intuition here is that the market did not think that easing was necessarily sufficient given the source of the pressures, instead needing to see signs that activity was bottoming out.

Market recoveries have been driven by either shifts towards Fed easing or activity troughs, depending on the nature of the correction



Source: Haver Analytics, Goldman Sachs GIR.

The current drawdown: Fed signal needed

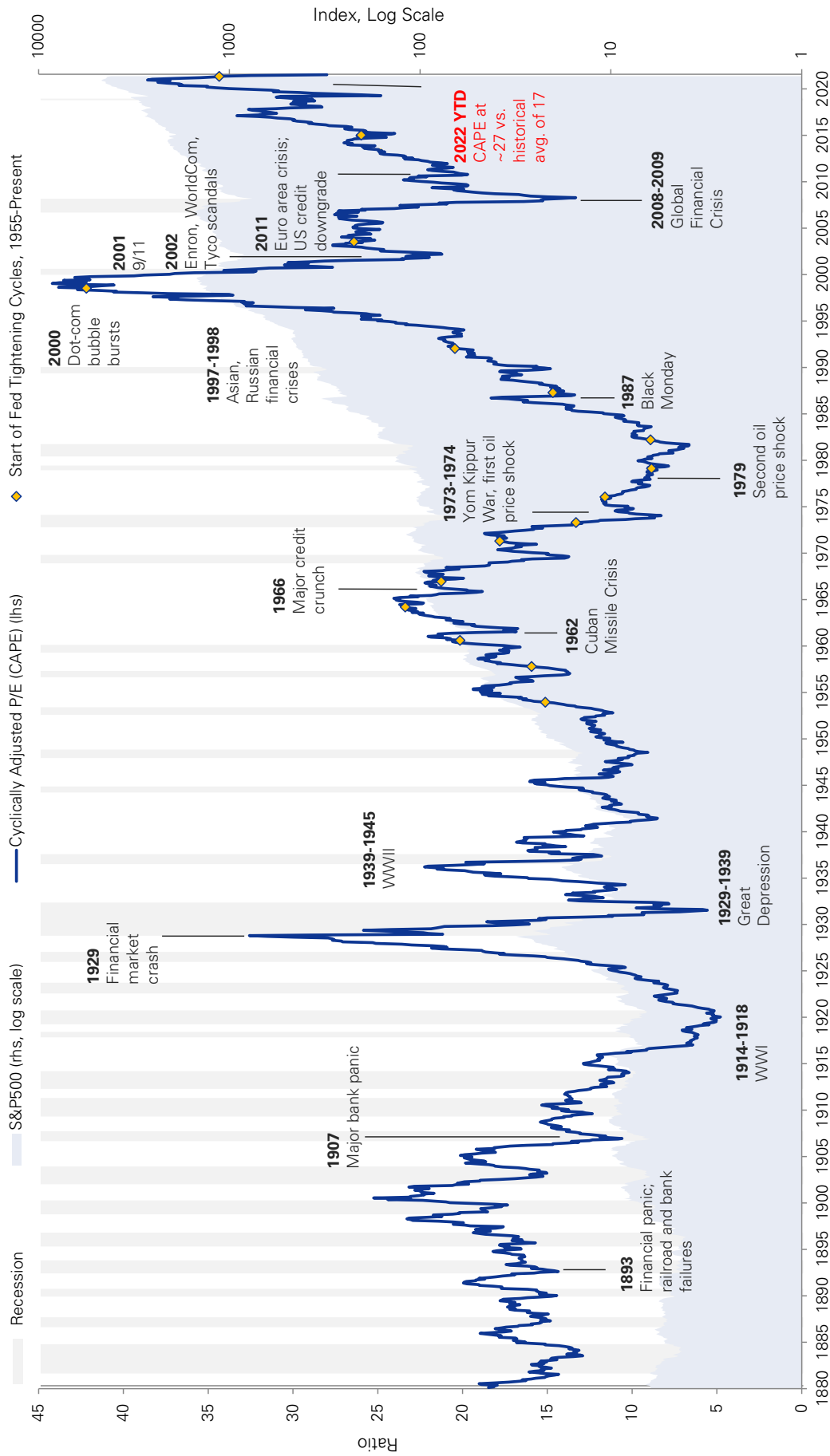
The recent market correction has been a Fed-driven one, as equities have steadily priced in more tightening this year while simultaneously worrying that such front-loaded tightening will ultimately lead to a policy reversal. Our US economists also do not see major financial imbalances of the sort that led to the retrenchment episodes of the 2000s. So, for equities to recover in a sustained way, history suggests that this kind of monetary-tightening-induced contraction is most likely to end when the Fed shifts policy direction. While a shift towards Fed easing is unlikely without an outright move into recession, as in late 2018, a clear signal that tightening risks are receding may be sufficient. Although we think that the financial conditions tightening that we have seen this year is in the ballpark of what the Fed needs to achieve its policy goals, the market is unlikely to get a clear signal from the Fed until more obvious signs of moderating growth and easing inflationary pressures come into sight. In particular, it may be that the market needs to see signs of the inflation deceleration that our US economists expect in 2H22 in order to see sustained relief (see pgs. 18-19).

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Goldman Sachs & Co. LLC

The long history of US P/Es

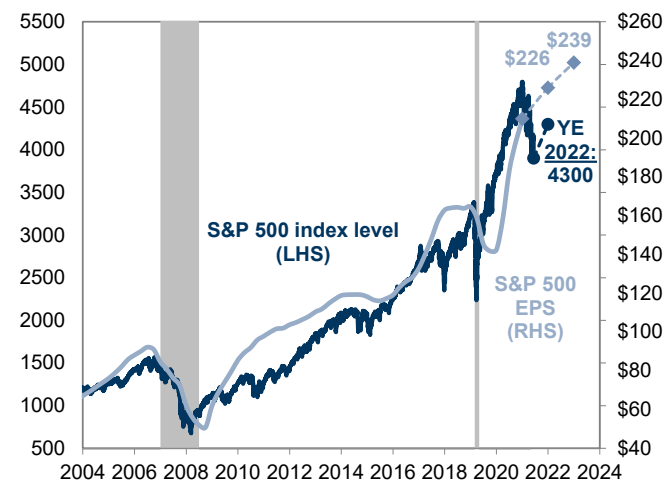


The CAPE uses a 10-year average of real S&P 500 reported earnings per share.

Source: Robert Shiller, BEA, NBER indicators retrieved from FRED, Federal Reserve Board, Goldman Sachs GIR.

GS US equity outlook and risk in pics

We expect earnings will lead equities higher by YE22...
S&P 500 level (lhs); S&P 500 EPS (\$, rhs),



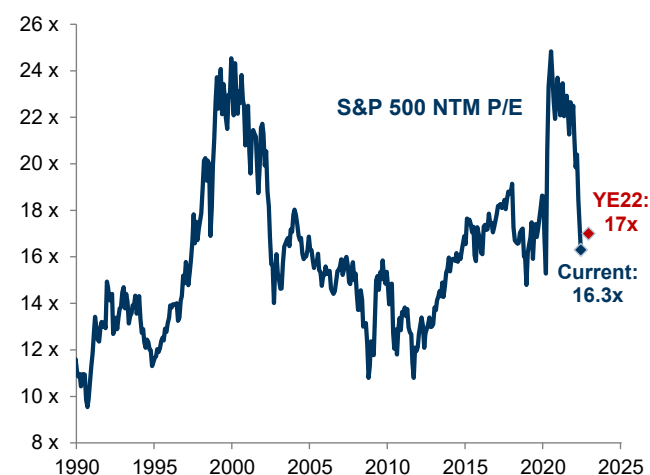
Source: FactSet, Goldman Sachs GIR.

...and recently upgraded our 2022 EPS forecast to +8%
GS top-down vs. consensus bottom-up S&P 500 forecasts

	GS top-down		Cons. bottom-up	
	2022E	2023E	2022E	2023E
S&P 500 ex-Financials, Utilities, Real Estate				
Sales Per Share	\$1457	\$1520	\$1485	\$1553
Year/Year growth	11 %	4 %	13 %	5 %
Profit Margin	12.3%	12.4%	12.4%	12.8%
Year/Year growth	11 bp	3 bp	22 bp	42 bp
Financials, Utilities, Real Estate				
\$46	\$51	\$46	\$52	
S&P 500 adjusted EPS	\$226	\$239	\$230	\$251
Year/Year growth	8 %	6 %	10 %	9 %

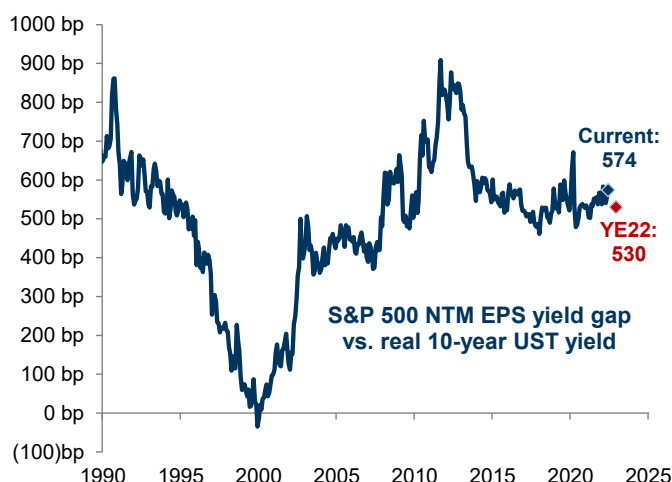
Source: FactSet, Goldman Sachs GIR.

We see the S&P 500 P/E staying roughly flat at 17x by YE...
S&P 500 NTM P/E, ratio



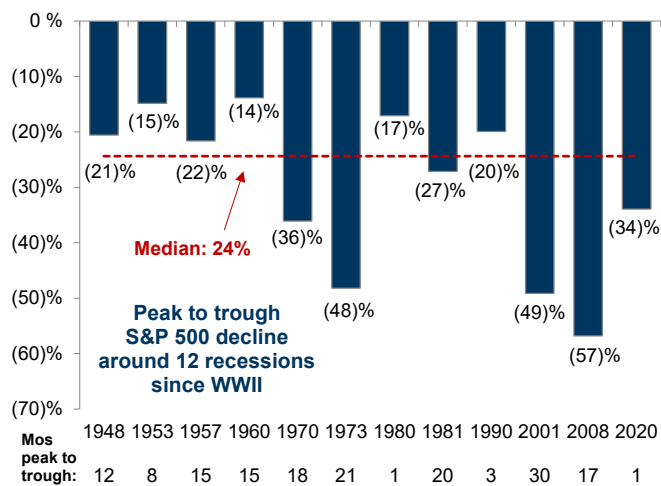
Source: FactSet, Goldman Sachs GIR.

...and expect a yield gap of 530bp
S&P 500 NTM EPS yield gap vs. 10y real UST yield, bp



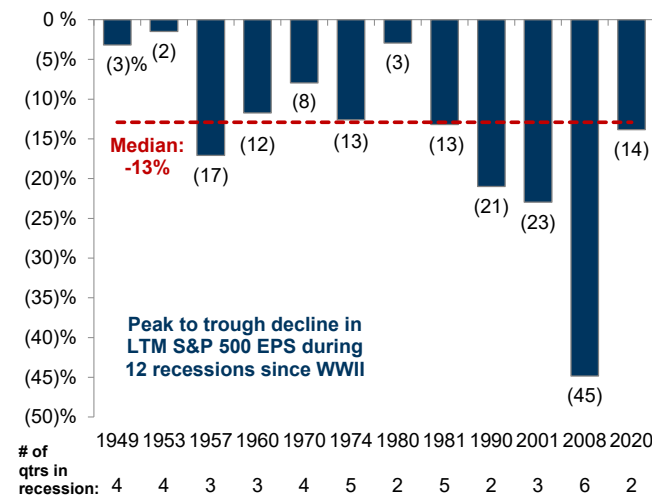
Source: FactSet, Goldman Sachs GIR.

The S&P 500 has contracted 24% in the median recession
Peak to trough S&P 500 decline in recessions since WWII, %



Source: Goldman Sachs GIR.

And S&P 500 earnings have dropped by a median of 13%
Peak to trough LTM EPS decline in recessions since WWII, %



Source: Goldman Sachs GIR.

Special thanks to GS US equity strategists Lily Calcagnini and Cormac Connors for charts.

Interview with David Kostin

David Kostin is Chief US Equity Strategist at Goldman Sachs. Below, he argues that the current equity drawdown largely owes to the sharp rise in interest rates, but that the equity market, and highly profitable Growth equities in particular, should recover later this year provided earnings are resilient, though investors should steer clear of unprofitable tech.



Allison Nathan: Amid the recent sharp equity market drawdown, are we seeing a fundamental paradigm shift in the equity market and especially in Growth stocks, which outperformed over the last decade?

David Kostin: No, I don't see a paradigm shift in the fundamental drivers of the equity market, but rather

a wholesale shift in the interest rate environment, which has important implications for equities. As of September 2021, the market was anticipating just one 25bp Fed rate hike in 2022, but today it's expecting ~14 25bps hikes—or ~350bp—of which 75bps has already occurred in two tightenings so far this year. Over the past three months, real rates have risen from -1% to +0.7%. So, the pace and magnitude of the rates repricing has been extraordinary, and it has led to a sharp de-rating of valuations from their pandemic highs, such that equity valuations are basically back to where they were pre-pandemic.

This de-rating makes sense because when rates were essentially zero throughout most of the pandemic, the cost of capital was extremely low and unprofitable companies weren't punished so long as they kept growing. In that environment, company managements prioritized growth over profits and adopted the late 1990s mentality of "get big fast", believing that they could eventually adjust their costs and become profitable down the road. This contributed to a massive increase in the valuations of the fastest-growing US companies—both profitable and unprofitable—which saw their multiples more than double from roughly 4-6x enterprise value to sales prior to the pandemic to 13-15x last year. But those valuations have since fallen back to 3-5x.

So this is mostly a rates story given their negative impact on valuations and investors' reduced appetite for holding longer duration stocks with more distant paths to profitability. And the Fed's commitment to raise rates as high as needed to sharply tighten financial conditions and get inflation under control has prompted enormous investor de-risking that has exacerbated the equity moves; positioning and money flows when looking at things like equities vs. bonds, passive vs. active management, and foreign demand are roughly 2.5 standard deviations below average.

Allison Nathan: Given this sizable decline in valuations, do these fast-growing companies look undervalued today?

David Kostin: To answer that, we need to split this group of fast-growing stocks into two buckets—companies that are profitable and those that aren't. While the unprofitable segment traded at roughly 12x enterprise value to sales at the end of 2021, they've since de-rated by roughly 75% and now trade around 3x. But they're not necessarily undervalued because they're still unprofitable in an environment in which rates are

rising. That's a significant headwind for companies with negative cash flows because capital is their lifeblood, and they need it to keep growing. A rising cost of capital raises the risk that they'll be forced into dilutive equity offerings that hurt existing shareholders. On the other hand, the valuations of the highly profitable bucket of Growth companies has been cut in half from around 12x to 6x enterprise value to sales. While these stocks are buffered by profits, the path to their potential re-valuation isn't clear at this point because higher equity valuations would run counter to the Fed's goal of tightening financial conditions and slowing the economy. But these stocks are still probably closer to fair value than some of the money-losing stocks, and it's possible that signs that either inflation is decelerating more sustainably or the Fed tightening cycle is starting to slow could see them move higher.

Allison Nathan: So should longer-term investors be buying profitable Growth equities at this point?

David Kostin: Some of the highly profitable, fast-growing companies will likely be re-rated higher eventually given their superior earnings growth and outsized ability to repurchase shares. But the path for them to re-rate will depend on whether they continue to deliver strong earnings. The success of the five largest stocks (META, AMZN, AAPL, MSFT, GOOGL) over the past decade really comes down to the fact that they grew their way into being such dominant players. These stocks quadrupled their weight in the S&P 500 from around 5% a decade ago to over 20% today by delivering 18% compound annual revenue growth—more than 3x the 5% for the S&P 500 index as a whole. And the market rewarded them for this extraordinary growth.

Dominant large cap stocks today trade at around 25x earnings relative to roughly 17x for the S&P 500. In the run-up to the dot-com bubble, the five largest stocks traded at 67x earnings compared to 25x for the overall market. So, while there's undoubtedly a premium today, we're nowhere near the bubble territory experienced in the past, and the valuation expansion for these stocks in recent years arguably reflects their strong track record of superior revenue growth and profitability, which is expected to continue in the coming years. Their high level of profitability also increases their ability to repurchase shares, which is even more accretive in an environment in which their stocks have de-rated by around 30%. New share buyback programs of \$160 billion were announced in conjunction with first quarter earnings, and that adds to the case for the eventual outperformance of highly profitable, fast-growing companies.

Allison Nathan: What about unprofitable Growth companies? Even if their cost of capital is rising, aren't there still good reasons to invest in companies with compelling growth stories?

David Kostin: No, not unless they can demonstrate a reasonable path to profitability. If a company is losing money,

then to keep growing it either has to dilute its shareholders by availing itself of additional equity capital or issue debt in the high-yield market where the cost of capital has risen substantially as financial conditions have tightened. When rates were low, these companies had plenty of capital and could keep raising additional equity, but their growth was incumbent on successive equity offerings at higher and higher prices. Investors were content to provide more and more money because valuations were rising. But you can only lose money for so long before investors stop suspending their disbelief about these companies' paths to profitability. And given capital is no longer essentially free, it'll be very hard to see a re-rating of unprofitable tech, especially because in the process of entering the public market these companies already got some valuation boost.

Allison Nathan: So should these unprofitable, high-growth companies stick to the private markets at this point?

David Kostin: It's important to remember that historically companies remained private until they became profitable. That changed during the pandemic as companies that had yet to achieve profitability increasingly started to go public, but now we're seeing a reversal of this trend as unprofitable companies are focused on trying to achieve positive net margins as opposed to just growing their top-line revenues. That's one of the reasons why the IPO market is basically in hibernation right now. And it will likely remain dormant for some time as companies increasingly wait until they're profitable to go public.

Allison Nathan: Beyond Growth equities, are we likely nearing a bottom in the equity market more broadly?

David Kostin: We expect the S&P 500 to essentially trade around 4000 over the next three months as the Fed remains focused on tightening financial conditions to slow the economy and rein in inflation. The near-term challenge for equities is that any meaningful move higher would arguably require the Fed to tighten further, which would in turn be negative for equities. But beyond the near term, prices will likely follow the path of earnings. That's because the other lever of equity performance—valuation—likely won't provide much juice to the market. While the P/E multiple on the S&P 500 has fallen from around 22x at the start of 2021 to around 17x today, that's still roughly in the 80th percentile versus history. On a relative basis, valuations are closer to the 50th percentile when accounting for the shift in the interest rate environment, which is reasonable, but still doesn't provide a strong case for meaningful multiple expansion ahead. So, earnings will likely be the main driver of equity performance, and we recently raised our 2022 earnings growth forecast to 8% following better-than-expected sales and margins in first quarter. And we expect this earnings growth to help lift the S&P 500 to 4300 by the end of this year.

Allison Nathan: Why do you remain optimistic on the outlook for earnings amid weakening consumer confidence and signs that the economy is starting to slow?

David Kostin: There are certainly questions about whether the strong Q1 earnings results are sustainable, but our US economists' expectations for growth, inflation, interest rates, and other macro variables suggest room for continued earnings

growth this year. Margins will be an important driver of the earnings outlook, and their resilience in recent quarters has been striking. Most companies achieved record-high margins last year despite the headwinds from the pandemic, supply chain disruptions, labor cost issues, and commodity price spikes, and this strong margin performance has continued through the beginning of this year. While we expect margins excluding Energy to contract modestly this year, overall S&P 500 margins will rise slightly from last year. The key risk to earnings is clearly the prospect of a recession, given S&P 500 earnings have contracted by 13% in the median recession since WWII, but that's not our base case at this point. And barring a recession, we expect 2022 earnings to be 8% greater than last year.

Allison Nathan: So how should investors be positioning themselves right now amid the recent market volatility and relatively fraught macro backdrop?

David Kostin: Investors' portfolios should mirror the potential distribution of outcomes for the economy. Our US Economics team puts the probability of recession over the next two years at around one in three, though they believe it would more likely be a 2023 event. So roughly a third of investors' portfolios should focus on companies with a "margin of safety", meaning they would still be attractively valued even if their earnings fell by 20%, as well as those with earnings stability, which investors are already paying a premium for. And the balance of the portfolio—roughly 2/3 of it—should be positioned to reflect the likelihood that the Fed will be able to successfully deliver a soft landing. Faster-growing, highly profitable companies that are also likely to repurchase a lot of stock at today's lower valuations should be coupled with high-dividend stocks, which are arguably the most dislocated part of the market today. Across the S&P 500, we currently forecast dividend growth of 10%, 9%, and 7% over the next three years, respectively, but the market is priced as though dividends will be cut in 2023 and 2024. Indeed, based on current pricing, there's a roughly 25% gap in terms of our forecast for dividends in 2024 and the futures market.

Allison Nathan: Given the likely more challenging macro environment in coming years, can US equities, and large cap Growth equities in particular, remain as dominant as they were in the last cycle?

David Kostin: Equities will benefit as long as the economy grows. And even in a higher inflation regime, they will offer a hedge because earnings and sales are reported in nominal terms. That said, the dynamic of TINA—or "There Is No Alternative" to equities—that was operative throughout the last cycle is starting to shift. While recent dismal equity returns have still outperformed bonds, especially on a Sharpe ratio basis, over the next decade we expect US equities to deliver a roughly 5% compound annual nominal total return, including dividends—so roughly 3% ex-dividends, which means that the returns on cash and some fixed income assets are converging toward equities. So, rather than TINA, we could see a dynamic of TARA—"There Are Reasonable Alternatives" to equities—given the combination of positive real interest rates, growing recession fears, and expected lower equity returns relative to the past ahead.

Interview with Darren W. Cohen

Darren W. Cohen is co-head of Growth Equity within Goldman Sachs Asset Management. Below, he argues that Growth equity isn't dead despite its recent sharp rout, but that investors will need to be more disciplined and thoughtful about how they invest in Growth companies going forward.

The interviewee is an employee of the Goldman Sachs Asset Management Division (AMD), not Goldman Sachs Research, and the views stated herein reflect those of the interviewee, not Goldman Sachs Research.



Allison Nathan: What do you make of the recent rout in public Growth equities?

Darren Cohen: The buildup to this sizable correction in public Growth equities needs to be appreciated to understand why it has been so severe and steep. If we take public software companies as an example, historically

they traded at roughly 5-10x forward revenues. Over the last decade, innovations in cloud computing and Software as a Service (SaaS)-based business models expanded those multiples to 10-15x forward revenues, which made sense given the high-growth, capital-efficient, and predictable nature of these businesses. And multiples rose even further—to 15-30x forward revenues—during the pandemic as the acceleration in global digital transformation made enterprise software and technology more broadly a safe haven for investors.

But as inflation continued to rise and the Fed made it increasingly clear in recent months that it would act aggressively to stem this rise, those arguably stretched multiples have taken a large hit, compounded by a risk-off market dynamic fueled by new Covid waves, the war in Ukraine, and related supply chain disruptions. So the sharp move lower in Growth equities owed in part to a fundamental recalibration in light of the higher rate environment. But the extent to which higher interest rates are to blame for the selloff is perhaps overdone. This correction has also been simply the result of the unwinding of crowded trades, as the profusion of momentum strategies concentrated in the same companies forced more liquidations and stress for public Growth companies when investors started to pare back exposure.

Allison Nathan: Is it as painful to be a Growth investor in the private markets as it is in the public markets today?

Darren Cohen: That depends on your investing strategy. For our part, we take minority stakes in private, hyper-growth companies across four sectors globally—with 40% of our capital in enterprise software, 20-30% in financial technology, 20% in healthcare, and 10-20% in consumer internet. The vast majority of our investments are in mid-stage growth companies, with around \$50 million in run-rate revenue and equity valuations of around \$500 million. Our entry revenue growth rates have exceeded >80% over the past few years, and we focus on companies that typically have a proven product market fit, compelling unit economics, and clear path to profitability, if they're not already breaking even. So they're out of the venture curve and are inherently less risky than earlier-stage companies, but they're not at the late growth, pre-IPO stage in which companies are primarily turning to investors for capital and limited dilution instead of a partner who can help

them scale their business. That's our sweet spot in terms of risk/reward. And for mid-stage growth investors like us that are disciplined when it comes to valuation, last year was actually quite challenging because we were often outbid in funding rounds for new portfolio companies. But now that some of the surplus capital has moved away from the market, the investment environment has improved somewhat.

That said, the late-stage private markets are experiencing tremendous pain, particularly if the companies were recently valued at extremely high valuations in excess of 20x forward revenues and close to going to public. Some late-stage growth companies that previously traded at multiples of 20-40x forward revenues have already started to reprice at much lower levels as valuations revert to the mean. But this recalibration in private markets could take anywhere from several months to a year or more to work its way through the system, especially as many companies will do whatever they can to hold onto their high valuations because they're associated with stronger fundamentals and the ability to attract and keep top talent. This fear of losing talent will likely drive companies to employ various options to avoid facing a down round of fund raising, such as issuing convertible notes that aren't priced or offering terms that benefit new investors at the expense of existing investors, like superior liquidity rights, ratchets, and Payment-In-Kind (PIK) Dividends. I would expect a potentially prolonged recalibration process ahead.

Allison Nathan: So is Growth equity dead at this point?

Darren Cohen: No. I've spent my whole career watching and working closely with transformational technology companies, and company formation has never been as healthy, strong, or economically efficient as it is today. The current investment landscape presents real opportunities, both in the public and private markets. In the public markets, while it's impossible to call the bottom, with multiples for hyper-growth companies back at around 10x forward revenues, valuations are likely very close to some sort of fundamental underpinning, especially as these are generally solid businesses with transformational underlying technologies that aren't going away. So, from a fundamental perspective, the risk/reward in public markets is now starting to look quite compelling. However, like always, you have to be able to differentiate fundamentally sound businesses from weak business models.

And, in private markets, very few asset classes afford investors downside protection through liquidity preferences in ultimately healthy businesses while also enabling them to earn 3-5x returns, but Growth equity is one of them. As always, investors have to be disciplined and thoughtful around where they participate, but Growth equity presents a very compelling investment opportunity amid the much more attractive valuation environment from a risk/reward perspective.

Allison Nathan: Even if Growth equity isn't dead, is the dispersion of performance set to change across strategies following a long period in which almost all strategies were consistent winners?

Darren Cohen: Yes, which is why investors need to do their homework. Over the past decade, a number of private market players expanded into Growth equity. Venture capital funds, private equity, corporate equity teams, and crossover investors—hedge funds, mutual funds, sovereign wealth funds etc.—joined classic Growth equity firms in the space. But they all had different risk/reward profiles. The venture teams were used to taking much more risk and investing much earlier, which was well suited for investments in early-stage companies. The corporate equity teams were more profit-oriented and risk averse, which left them better aligned with later-stage growth companies. And the crossover investors mainly invested to take advantage of the arbitrage between private and public companies and then own them into the public markets. So Growth equity, which wasn't really even a fully-formed asset class a decade ago, became quite divergent in terms of strategies and risk profiles, even though to the outside world it still looked pretty homogeneous as the top Growth funds across all strategies generally delivered average annual returns in the 20-30% range.

But the dispersion of performance will likely change massively over the next 1-2 years because many of the strategies that generated those high returns are unlikely to continue to do so. In particular, passive strategies that are investing in late-stage companies—the best of which traded at 20-40x forward revenues and were compounding at 40-60%—will likely generate lower returns due to multiple compression. So, for the first time in a long time, investors will need to differentiate between how each strategy makes returns, and the “alpha” each one generates will be more relevant than ever before.

Allison Nathan: As investors likely become more discerning in their Growth strategies, is there still room for unprofitable companies in the markets?

Darren Cohen: Yes, but the mentality of “growth at any cost” has dramatically shifted. Companies with negative economics that are burning significant free cash flow—say, in the hundreds of millions a year—are likely going to have a tough time getting funded in this environment. But unprofitable companies with very healthy unit economics that effectively balance funding their growth while also demonstrating a path to profitability, will likely continue to get funded. For hyper-growth companies with positive unit economics, high customer retention, gross margins of 70-80%, and LTV/CAC ratios (lifetime value of a customer compared to the cost of acquiring them) in excess of 3x, it's probably okay to be burning a modest amount of money, and we're still generally comfortable funding such companies.

Allison Nathan: But does investing in innovation as opposed to more established businesses make less sense in this more difficult environment?

Darren Cohen: Investing in innovation still makes a lot of sense, as long as it's at the right price. Assuming that higher rates/inflation and slowing growth continue, we're likely in for a

period of heightened market volatility and unevenness ahead, but many innovative technologies remain durable investing themes. In the enterprise software space, cloud computing, cybersecurity, workflow automation, machine learning, and data analytics are all durable trends with multi-billion-dollar end-markets that are growing at double digits, and will likely continue doing so even in a more difficult macro environment. Huge end-markets like insurance, real estate, and payments are ripe for disruption by innovations in financial technology, and some extremely promising diagnostic technologies and therapeutics in the healthcare space have made it past the approval stage, which takes much of the science risk off the table. The challenge is just figuring out which companies are best positioned against each theme and then investing at the right risk/reward.

Allison Nathan: Given all that, are public or private markets a more compelling buy right now?

Darren Cohen: Good opportunities exist in both. As I mentioned, in the public markets, many technology companies have now been sold to a place where it probably makes sense to invest in them because these companies have hit valuations that, even if they haven't bottomed, are very close to fundamental levels. And many of these companies still have very healthy growth rates, largely underpenetrated markets, and a clear path to profitability. So Growth opportunities in the public markets look compelling right now, with the exception of some former tech darlings that were completely mispriced to begin with and likely won't reflate.

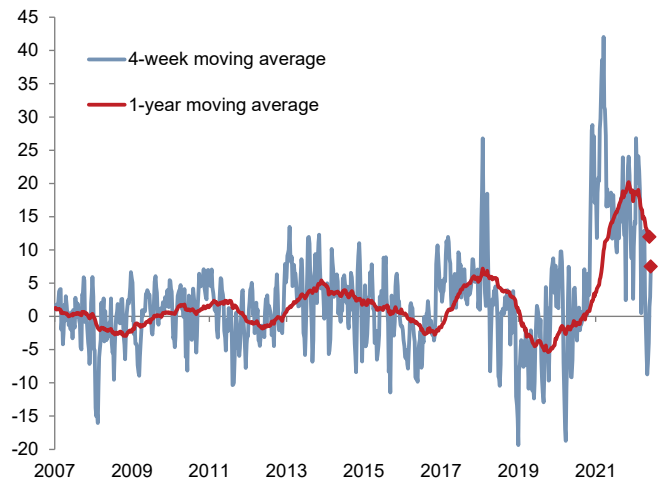
On the private side, some great opportunities exist in the early- and mid-stage growth space, where investors can buy in at much more reasonable multiples of 10-15x, rather than 20-25x, forward revenues. That said, other high-potential opportunities will require investors to be patient. Many of the best private Growth companies are sitting on the sidelines right now having raised a ton of money last year, but over the next 1-2 years they're going to have to come back to market, and that'll create a unique opportunity to invest in high-quality companies at much better entry points.

Opportunities will also arise as the market goes through a period of healthy consolidation. The private markets are incredibly saturated as the number of companies being created has risen from a few hundred to a few thousand over the past decade. Those companies are now coming to maturity, but there's no way that the public markets can absorb all of them, particularly now that the public markets are essentially shut down in terms of IPO activity. So the strong will become stronger and take advantage of the environment for M&A. Interesting opportunities will also be created as a huge portion of the market goes through a repricing over the next year. Companies will either grow through their valuations, as many of them hope, or multiples will reflate—which is unlikely—or they're going to have to take down rounds and give away structure, which will make the risk/reward profile more compelling for investors. That probably makes the late-stage growth space more attractive in the public markets than in the private markets right now, but across both markets there are good opportunities for disciplined and thoughtful investors.

Equity positioning amid the rout

Net flows into global equity funds have moderated...

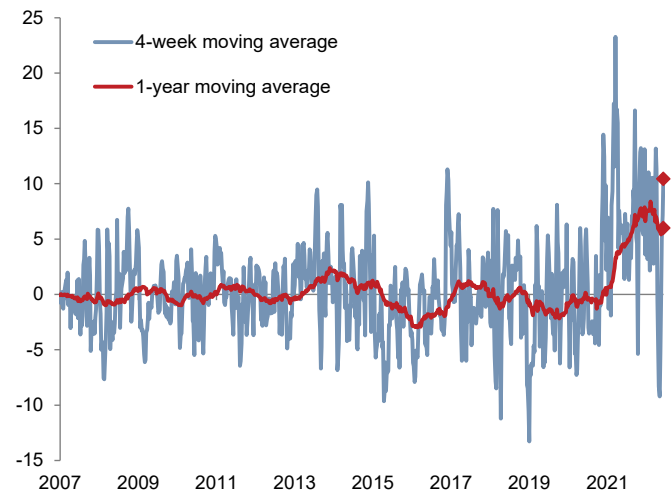
Global flows to global equities, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Goldman Sachs GIR.

...as have flows into US equities

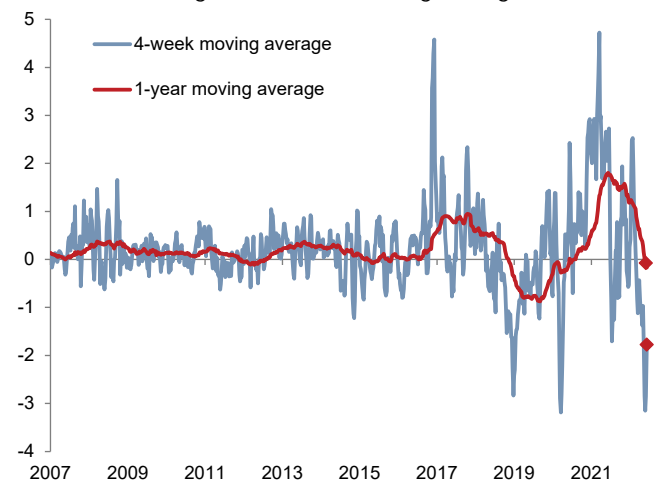
Global flows to US equities, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Goldman Sachs GIR.

High beta funds saw outflows amid the market rout...

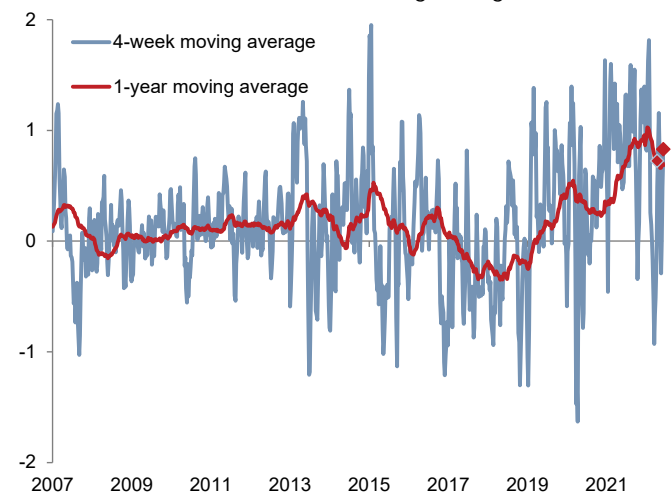
Global flows to high beta funds, moving average, \$bn



Note: High beta funds include commodity, financial, & industrial sector funds.
Source: EPFR, Goldman Sachs GIR (data as of June 8, 2022).

...as low beta funds experienced net inflows

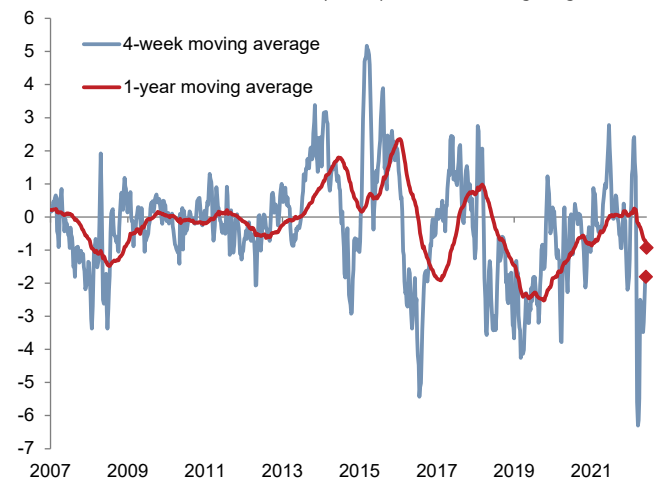
Global flows to low beta funds, moving average, \$bn



Note: Low beta funds include consumer goods, real estate, & utility sector funds.
Source: EPFR, Goldman Sachs GIR (data as of June 8, 2022).

European funds have seen large outflows amid the war

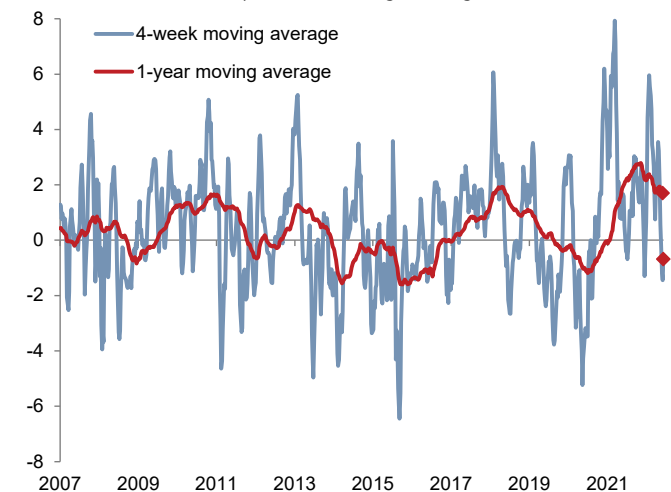
Global flows to Western Europe equities, moving avg, \$bn



Data as of June 8, 2022.
Source: EPFR, Goldman Sachs GIR.
Special thanks to GS market strategist Isabella Rosenberg for charts.

EM net flows have turned negative

Global flows to EM equities, moving average, \$bn



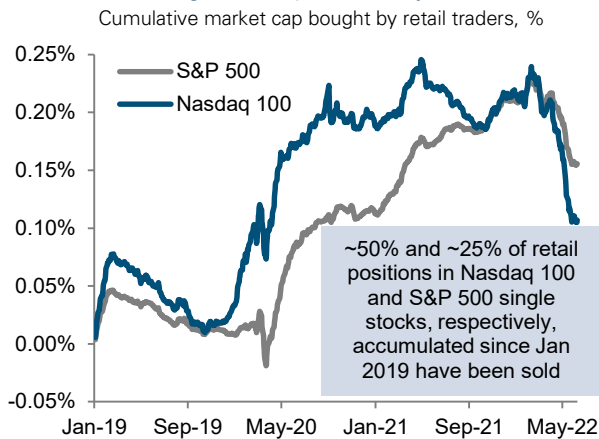
Data as of June 8, 2022.
Source: EPFR, Goldman Sachs GIR.

Retail investors: no longer buying the dip

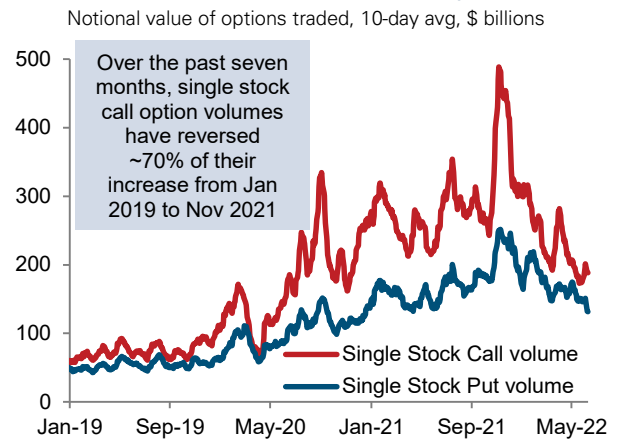
John Marshall, Head of Derivatives Research in GS GIR, takes a proprietary “big data” approach of aggregating daily retail trading activity by stock, sector, factor, and index to understand trends in retail trading amid the recent market drawdown. His key takeaways are below. The punchline: while historically retail investors have bought the dip, this time they haven’t.

Retail traders have been net sellers of single stocks, and have reduced their use of options

The reduction of single stock positions by retail has been sharp...

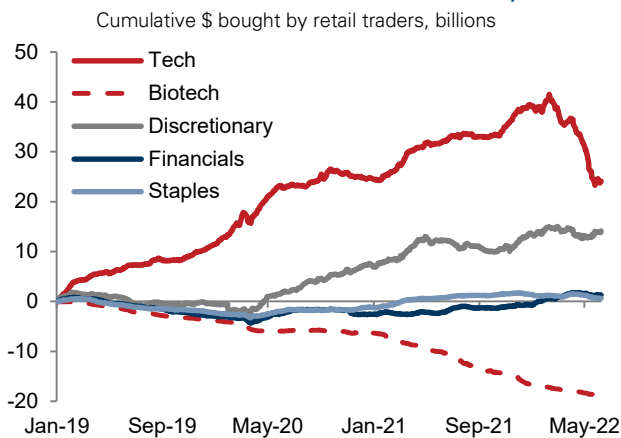


...as has been the use of call options

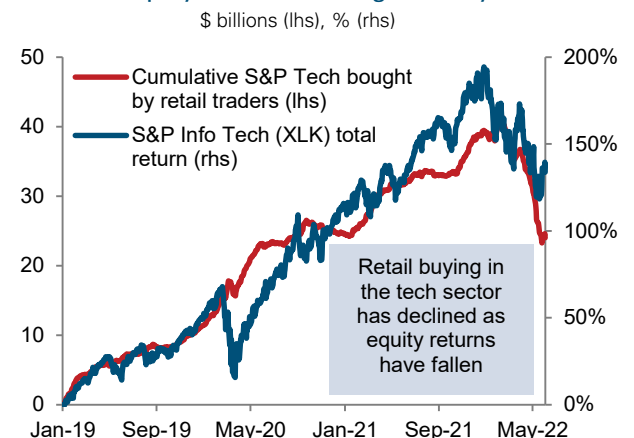


Retail investors have sold tech stocks as returns have fallen sharply

Tech and Biotech stocks have been heavily sold...

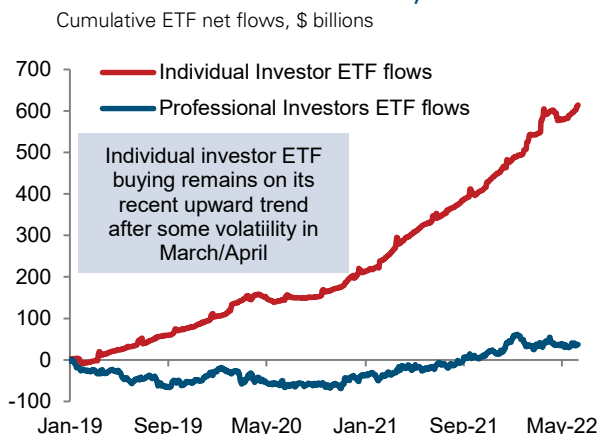


...as tech equity returns have significantly fallen

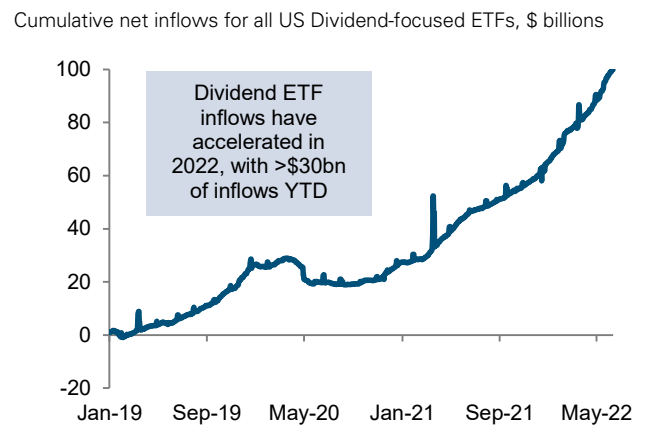


But retail investors continue to buy equity ETFs, sustaining a solid base of retail buying

Individual investors continue to buy ETFs...



...and there has been an acceleration in Dividend ETF inflows



Data as of June 9, 2022.

Source for all exhibits: Bloomberg, Goldman Sachs Group Inc., Goldman Sachs GIR.

Equities: an inflation peak relief?

Sharon Bell argues that the likely coming peak in headline inflation across major economies is probably more a necessary than sufficient condition for equities to find their trough

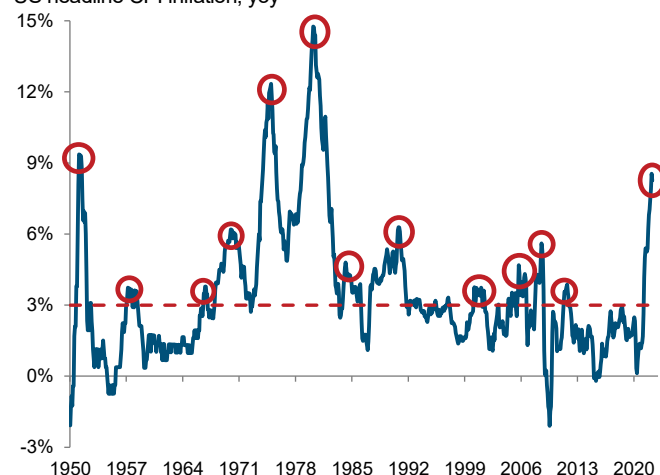
Equities have fallen sharply as inflation has risen and growth expectations have declined. But our economists think that US headline inflation will remain around current levels for the next few months before declining in late fall and expect European headline inflation to peak in the next few months. Even in the UK, where the inflation spike has been especially sharp, we think headline inflation will peak in October once the energy price cap rises. It is also notable that market-implied inflation has started to moderate too. While inflation in all of these economies is likely to remain high and above target for some time, could passing the peak provide a catalyst for a sustainable turn in equity prices? History suggests that a peak in headline inflation is probably more a necessary than sufficient condition for equities to find their trough.

The history

Headline inflation has peaked above 3% in the US 13 times since 1950. We've found that the S&P 500 has usually fallen in the run-up to these peaks, just as it has in recent months, and, on average, recovered after the peaks. That said, the strongest post-inflation-peak rallies benefitted from at least one of three factors: a sharp inflection in economic growth, undemanding valuations, and falling rates.

- Economic growth.** Perhaps surprisingly, the peak in inflation is often followed by a continued weak economic outlook, with the ISM continuing to fall, as was the case in the 1950s/60s and in the mid-1980s. But peaks in inflation that proved to be good times to buy the market—in December 1974, March 1980, and October 1990—all centered at or around economic troughs. In particular, from a low of 31, the ISM Manufacturing Index rose 24pts in the 12 months following the December 1974 peak in inflation, and the market, in turned, also recovered sharply. The early 1990s also saw a strong rise in the ISM post the peak in inflation, and the S&P 500 again rallied sharply. In contrast, during two of the three times when it would have been a clear mistake to buy equities at the peak in inflation—December 1969, January 2001, and July 2008—it was because the economy was in or about to enter a recession (1969 and 2008).
- Starting valuations.** The other time that the peak in inflation saw a continued fall in the market—in January 2001—the starting point for valuations was high at 22x forward P/E. In contrast, the September 2011 peak in inflation was a good time to buy as valuations were low at 11x forward P/E.
- Rates.** Peaks in inflation that have come amid a backdrop of falling rates have also usually been a good time to buy equities. October 1990 is a perfect example of all three factors supporting the market. The S&P 500 rose 30% in the subsequent 12 months post the peak as the ISM rose almost 10pts, the 2y UST yield fell almost 200bp, and the starting point for valuations was a low 10x forward P/E.

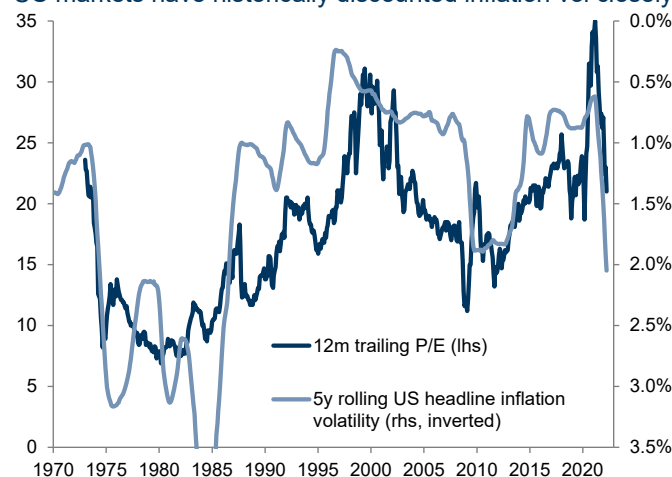
US headline inflation has peaked >3% 13 times since 1950
US headline CPI inflation, yoy



Source: Haver Analytics, Goldman Sachs GIR.

A peak in inflation is also not sufficient for equities to rally because the level and volatility of inflation matter too. Past periods of higher and more volatile inflation have generally been associated with lower equity valuations, partly because the uncertainty both in terms of monetary policy and margin setting make high inflation volatility difficult for equities to digest. So, even if inflation does fall from its peak, if it remains higher and more volatile than it was during the last cycle, it's likely that equity valuations—especially in the US—won't rise to similar highs. Indeed, during the high and volatile inflation of the 1970s, average valuations for US and UK equities were a relatively low 12x and 11.7x, respectively (trailing earnings).

US markets have historically discounted inflation vol closely



Source: Haver Analytics, Datastream, Goldman Sachs GIR.

What about European equities?

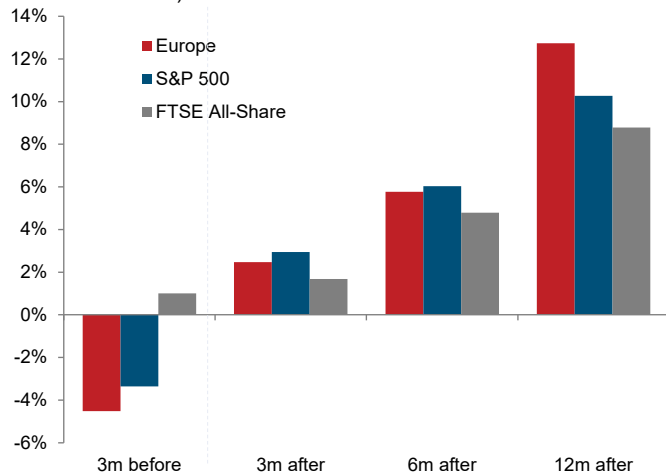
The relationship of European equities with inflation is especially complex. On the one hand, the economy is more vulnerable to rising energy costs (the main driver of inflation in recent months) given Europe's dependence on external energy sources. On the other hand, European markets have fewer high-growth companies (which are vulnerable to rising rates) and are more heavily exposed to commodity stocks.

That said, we find that the profile of European equity returns is similar to those of the US around peaks in inflation. European

markets are generally weak in the months preceding the peak in inflation, but on average rise after inflation has peaked. European equities actually typically outperform US equities in the 12 months after US inflation peaks¹, which may be a function of the higher beta of European equities. UK equities similarly rise post the peak in UK inflation, although they tend not to outperform US equities, likely due to their lower beta, and are relatively resilient in the run-up to inflation peaking, possibly due to the fact that UK equity indices include a large number of commodity stocks.

The profile of European stocks is very similar to the US around peaks in inflation

Average price performance around peak US inflation (UK inflation peaks for FTSE All-Share)



Source: Datastream, Haver Analytics, STOXX, Goldman Sachs GIR.

If inflation peaks what areas of the market gain the most?

The relationship between different types of equities and inflation has not been stable over time, which means that the ultimate beneficiaries of past-the-peak inflation have varied. Over the last decade, higher inflation was associated with the outperformance of Cyclical and Value, but this has not been the case more recently (outside of commodities). That’s because high inflation has been increasingly supply—rather than demand—driven, acts as a speed limit on growth, and prevents central banks from loosening policy even in the event that growth is slowing. A peak in inflation should therefore benefit Cyclical equities, as well as Bank and Consumer Discretionary stocks whose correlations with inflation have recently turned sharply negative.

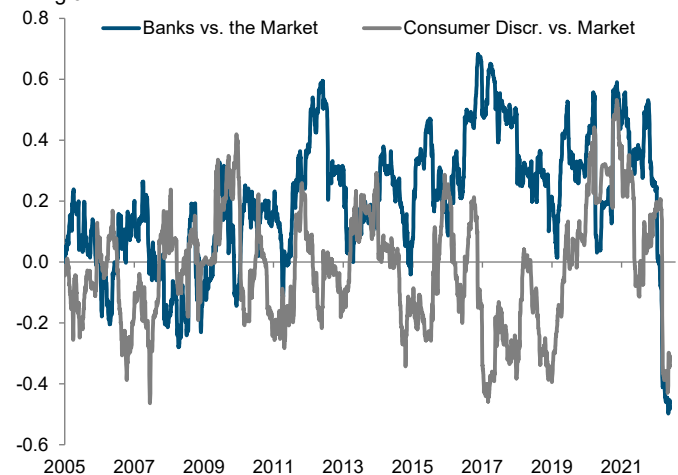
Positioning for still-high and volatile inflation

The uncertainty around the potential paths of inflation from here and the likelihood of it remaining high even if it peaks across major economies over the next several months will probably prevent equities from rallying sharply over the near term, and is a reason why we are neutral equities in our 3m asset allocation. Moreover, the current tightness in energy and labor markets makes not just high, but also more volatile, inflation more likely, as we’ve seen in gas prices in recent months. To that end, we recommend investors on both sides of the Atlantic focus on companies that can withstand more

volatile and higher average levels of inflation amid a modestly weaker growth backdrop. In the US, we recommend Stable Growth stocks, which have outperformed the S&P 500 since late last year and should continue to do well in such a challenging environment. In Europe, we recommend companies with high and stable margins, as these should be well-placed to maintain margins if input costs remain higher for longer and we believe that higher margin companies will benefit in the new “Post Modern” cycle (see pgs. 20-21).

European banks and consumer discretionary stocks are now sharply negatively correlated with inflation

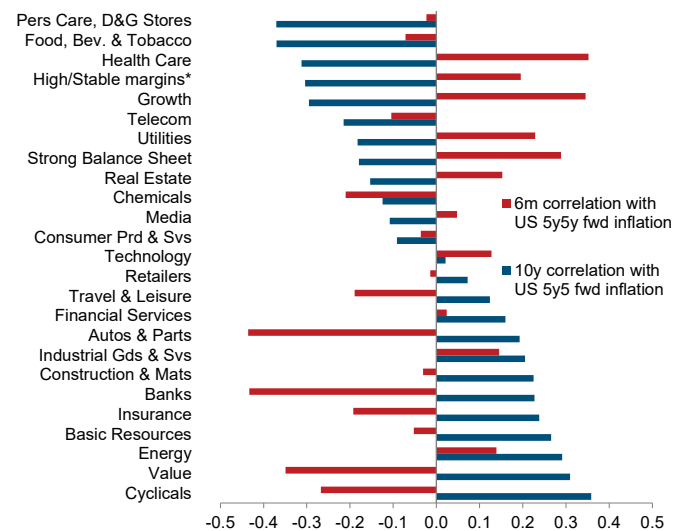
Correlation with Euro area 5y5y fwd inflation, based on weekly changes, rolling 6-month correlation



Source: Datastream, Goldman Sachs GIR.

Relationships between inflation and sector performance have shifted sharply in recent months

Correlation with relative price performance of Europe sectors and factors to the market, w/w returns



*High/Stable margin basket (GSSTMARG)

Source: Datastream, STOXX, Worldscope, Bloomberg, Goldman Sachs GIR.

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Goldman Sachs International

¹ We use US inflation rather than European inflation as aggregate Europe inflation data is not available back to the 1970s and European markets tend to react more to US inflation/growth numbers.

Equities: positioning for change

Peter Oppenheimer argues that while equities will likely deliver double-digit returns over the near term, medium-term equity returns will likely be fatter and flatter than in the last cycle

The recent drawdown in equities, which has taken many markets into bear market territory and longer-duration stocks and the Nasdaq well into such territory, has raised questions about the outlook for equities from here, both over a near and longer-term horizon. Over the near term, while the recent volatility is likely to continue, we expect low double-digit returns in many markets amid more reasonable valuations, a likely peak in inflation, and slowing but supported economic growth. But over the medium-term, returns are likely to be “fatter and flatter” than they were in the last cycle as equities enter a new “Post Modern” cycle.

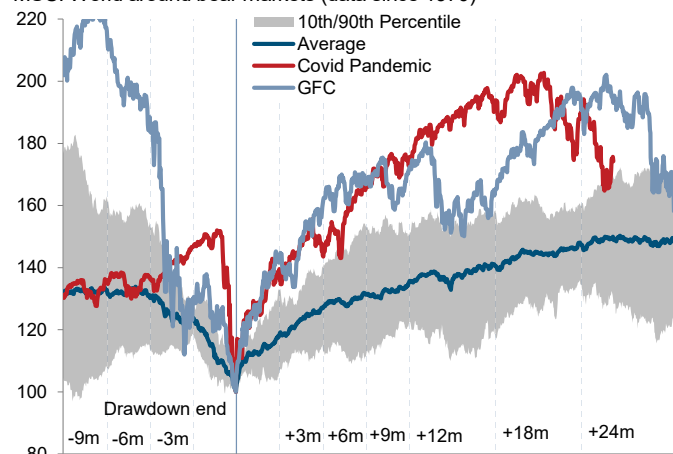
A very unusual setup

Relative to the average pattern of equity returns around bear markets since the 1970s, the last two bear markets—the first around the Global Financial Crisis (GFC) and the second around the pandemic—were outliers. The market dynamic around the GFC was unusual due to the scale of the collapse in equity prices (roughly 60%), which, combined with the high levels of private sector debt at the time, led to a sharp deleveraging and a collapse in demand. The response was a significant easing of monetary policy and the start of quantitative easing (QE), which contributed to an unusually strong market rebound.

The market dynamic in the wake of the Covid pandemic was also atypical. The sudden collapse in economic growth triggered an unusually rapid, although not particularly deep, bear market in equities. This was followed by the strongest and lowest-volatility rebound in several decades amid another rapid and powerful easing of monetary policy, this time supplemented by a potent boost in fiscal spending, which drove valuations—particularly those of long-duration equities—to new highs.

The GFC and pandemic bear markets were unusual

MSCI World around bear markets (data since 1970)



Source: Datastream, Goldman Sachs GIR.

Amid this backdrop, investors began to worry that what was initially assumed to be “transitory” high inflation was far from it, as supply chain bottlenecks lingered. This triggered an

initially mild correction in equities, followed by a sharper drawdown as investors feared further supply shortages—particularly in food and energy as a result of the war in Ukraine—would coincide with a significant slowdown in growth. The resulting correction has taken many markets into bear market territory and global equity valuations significantly lower.

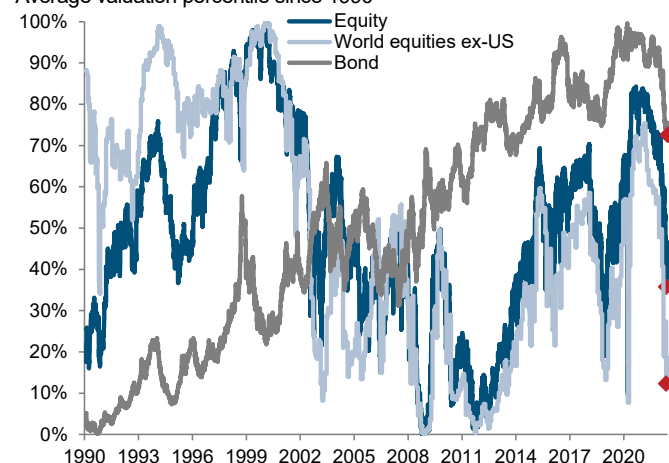
Near term: volatility, but double-digit returns ahead

So where do markets go from here? Equities are likely to remain volatile over the near term, and we recently downgraded equities to neutral in our 3m asset allocation as more evidence that inflation has peaked and a moderation in growth risks will likely be needed for markets to rally again. Typically, equities decline in the run-up to inflation peaks and rally in the months following the peak, although this didn’t happen in several instances since 1950 (see pgs. 18-19). At the same time, equity market fortunes tend to turn when the rate of economic deterioration slows, and there’s no evidence yet that this is taking place.

That said, we expect low double-digit returns over a six- to twelve-month horizon in many markets, as a number of supports should limit the extent of an economic downturn, and as valuations have already moderated. Private sector balance sheets are strong, particularly in the corporate and bank sectors, which reduces the risk of aggressive de-leveraging. Unemployment remains historically low. And fiscal policy is easing in Europe, while some countries like the UK are introducing fiscal supports to target households most vulnerable to a squeeze in real incomes. At the same time, the extreme valuations that dominated many markets until recently have moderated. A year ago, bonds and equities were very expensive simultaneously. Most equity markets are now trading well below average multiples, despite much lower-than-average bond yields, as price adjustments have pushed P/E ratios down amid resilient corporate earnings growth. Global equity valuations have fallen from the 80th to around the 40th percentile of their 30-year range, while equity valuations outside of the US have declined to around the 20th percentile.

Global equity valuations have fallen sharply

Average valuation percentile since 1990



Source: Datastream, Worldscope, Goldman Sachs GIR (data as of June 9, 2022).

Medium term: the new “Post Modern” cycle

Over a medium-term horizon, we expect returns will be “fatter and flatter” (lower returns and wider trading range) than in the

last cycle as equities enter a new “Post Modern” cycle characterized by five key themes that differentiate it from the “Modern” cycle of 1982-2020, which saw longer and less volatile cycles than the “traditional” cycles of the earlier 20th century.

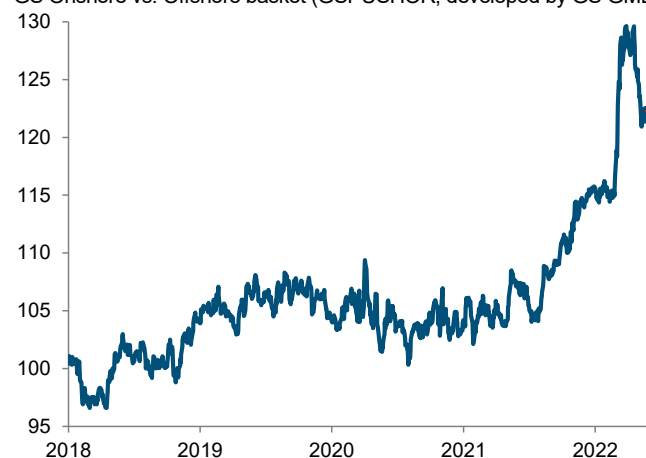
First, while the Modern cycle was characterized by disinflation and zero interest rates, inflation now seems to be a higher tail risk than deflation for the first time this century, implying higher nominal and real interest rates. This shift is likely to result in a “fatter and flatter” market environment, with more focus on alpha than beta, in comparison to the secular bull market that preceded it. Inflationary risks also argue for increasing allocations to “real” assets like commodities, real estate, and infrastructure (see pgs. 26-27).

Second, the era of uncontested [globalization](#) ushered in by deregulation, the end of capital controls, privatization, and falling levels of union membership, and then expanded by the pivotal Uruguay round of GATT in 1986, the collapse of the Berlin Wall in 1989, the signing of NAFTA in 1994, and India and China’s joining of the WTO in 1995 and 2001, respectively, is ending. Growing geopolitical risks, the fragility of global supply chains that the pandemic revealed, increased focus on ESG and de-carbonization, and technological innovations in manufacturing are all likely to result in a move towards greater regionalization and onshoring. This is likely to benefit Innovators (companies with new technologies) and Enablers (companies that facilitate and power social and economic change), and argues for placing more value on businesses with stable and sustainable margins as more localized production is likely to increase costs for some companies.

Third, while energy and labor were plentiful and cheap in the Modern cycle, they will likely be more scarce and expensive in the Post Modern cycle as a result of globalization and pandemic-era changes to labor markets and the shale revolution’s effect on energy investment. Investors should therefore focus on Innovators and Disruptors (companies that utilize technology to disrupt industries) that will save money for companies, particularly in areas related to greater efficiency in

energy (carbon storage, modular nuclear plants, and battery storage) and labor substitution (machine learning, robotics, AI).

The market expects reshoring companies to outperform GS Onshore vs. Offshore basket (GSPUSHOR, developed by GS GMD)



Source: Goldman Sachs, Goldman Sachs GIR (data as of June 9, 2022)..

Fourth, the era of smaller government, triggered by the supply side reforms of the 1980s, is giving way to one of larger government amid rises in spending on social support, defense, and the energy transition. This should benefit companies with exposure to infrastructure and capital spending, as well as companies in the Renewable Energy space.

And, finally, while the last cycle placed a big premium on top-line growth, the Post Modern cycle will likely be marked by an increased focus on margin stability as a higher cost of capital, greater input costs, and higher nominal GDP increase the attractiveness of companies that can sustain margins and compound returns through earning power and dividends. Investors should therefore focus on companies that can secure margins and generate good compound returns, and again those that can innovate, disrupt, enable, and adapt.

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Goldman Sachs International

US internet stocks: sufficiently de-rated?

Eric Sheridan answers key questions about what's likely ahead for the US internet sector amid a more challenging macro backdrop

On the heels of a stronger-than-expected 1Q22 earnings season, valuations of companies in the US internet sector have de-rated materially amid a significant selloff in the equity market as investors struggle to digest a more challenging macro environment. Here, we address frequently asked questions about what's likely ahead for the sector amid this more challenging backdrop.

Q: How well would the US internet sector weather a potential recession?

A: While the sector is not immune to a recession, we see reasons to be positive.

Q1 earnings season mostly demonstrated strong end-demand trends based on consumer spending and enterprise computing, and our early industry checks for Q2 continue to point to solid digital advertising demand and broad based re-opening demand in end-markets like Online Travel and Ridesharing. However, smaller e-commerce companies highlighted weakening demand in March-May in their Q1 results, and the broader internet sector is not immune to a recession as most end-market growth is tied to global consumer spending and the industry is at a state of deeper maturity from a penetration curve standpoint. But we view the fact that more established management teams that have weathered prior downturns are recognizing the need to align revenue growth and investments more closely as the overall demand environment remains volatile as a positive.

Q: How much more do the subsectors that took a hit during the pandemic have to recover?

A: Online Travel is likely close to normalizing, but Ridesharing dynamics have more room to normalize.

Online Travel looks likely to have a record summer this year as US travel is already back to pre-pandemic levels while pockets of Europe and Asia remain in recovery mode. That said, management conversations are increasingly shifting towards a return to normalized growth on the other side of record Summer 2022 travel demand (especially if consumer discretionary budgets weaken), normalized margins, and how investors might approach the Online Travel sector from a valuation perspective amid normalized operations (compared to recovery-driven growth). Ridesharing dynamics also continue to show improvement, driven by travel/local entertainment, with elements of corporate/work usage still in recovery mode.

Q: Have companies that benefitted from pandemic shifts in consumer behavior begun to see normalized growth?

A: To varying degrees.

Streaming media, stay-at-home e-commerce, and connected fitness companies have yet to return to a normal growth cadence, although such companies currently have low visibility into what end-market demand normalization actually looks like. With the exception of AMZN (to some degree), overall e-

commerce growth has been moderating back to historical trends.

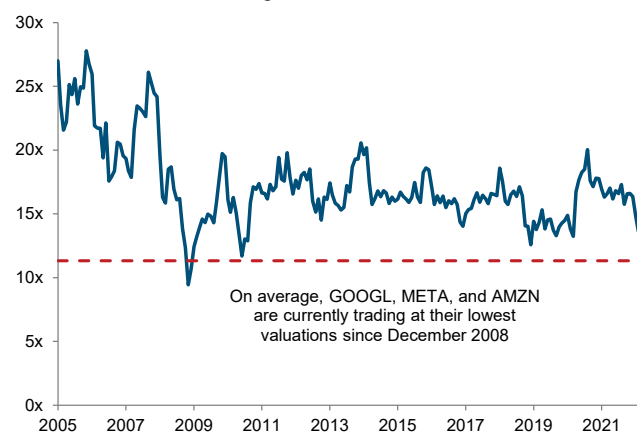
Q: Has a new investing/valuation paradigm emerged amid the recent selloff?

A: Yes.

Most investors have shifted their positioning away from smaller, less scaled emerging growth companies with low-to-no GAAP operating profits as risk appetite has declined in the face of macroeconomic uncertainties and rising interest rates (which are always highly negatively correlated to internet valuations). Instead, investors are increasingly focused on scale, product/platform diversification, stable/rising operating profits, the levels of stock-based compensation awarded, and the potential for capital returns (buybacks and/or dividends).

Tech valuations have sharply declined

GOOGL/AMZN/META average EV/NTM GAAP EBITDA



Source: FactSet, Goldman Sachs GIR (pricing data as of June 9, 2022).

Q: To what extent are shifts in the regulatory landscape expected to affect the sector?

A: While broad regulation that significantly impacts the sector is unlikely, merger and industry policy changes are in focus.

We continue to see a low likelihood of broad regulation that would impact business model trends, although we continue to monitor key European initiatives such as the Digital Markets Act and Digital Services Act. In the US, the upcoming midterm elections make it less likely that any large-scale legislation passes over the coming year, but merger review processes at the DOJ and FTC remain focused on how large-scale internet companies are allocating capital to M&A, the most tangible outcome of which will likely be that such companies will become less reliant on M&A/inorganic growth in the coming years as a driver of platform diversification and innovation. Beyond pure government regulation, industry policy changes, including changes to Apple's Identifier for Advertisers (IDFA), fingerprinting, private relay and/or Google Privacy Sandbox remain heavily debated by investors even as the most exposed companies (META, SNAP, APP, IS, Gaming) continue to highlight how they have responded over the last three quarters and how the headwind from these changes has likely peaked.

Q: What are the most recession-proof themes in tech?

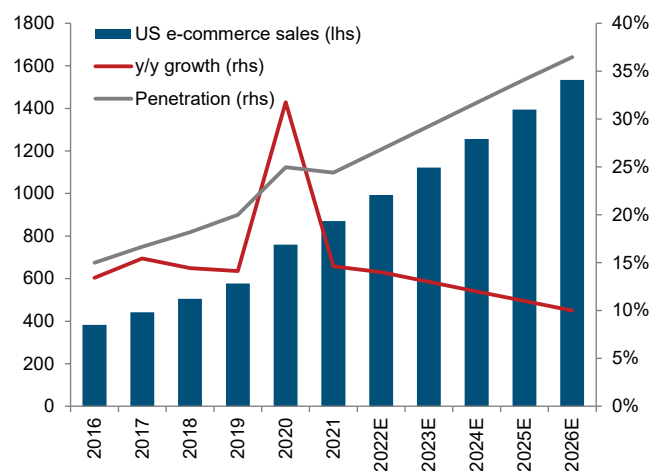
A: The shift to e-commerce, increasing adoption of streaming media, and the continued rise of cloud computing should remain durable themes in a recession.

A number of secular themes should remain relatively strong in the event of a recession, including the shift from offline retail to e-commerce, the increasing adoption of streaming media formats, and the continued rise of cloud computing. With respect to e-commerce, while the category has seen some degree of normalization in recent months from pandemic highs, e-commerce penetration as a share of total retail sales should continue to rise and drive growth in end-demand, particularly in non-discretionary categories like food and beverage.

Accelerated by the pandemic, streaming media as a category has seen rapid adoption and global proliferation over the past few years and, despite increasing competition and some normalization post-pandemic, should mostly remain resilient in a more difficult macro environment as a relatively inexpensive form of in-home entertainment. Finally, we believe enterprise spend on public cloud will remain resilient, continue to gain share of overall IT spend as companies continue to look toward cloud computing to drive operating efficiencies and providers benefit from the shift over the past few years toward larger commitments with longer-dated contracts, which have shown up in the form of healthy backlogs.

E-commerce growth has somewhat normalized, but penetration should continue to rise

\$ billions (lhs), % (rhs)



Source: US Census Bureau, Goldman Sachs GIR.

Eric Sheridan, Senior US Internet Analyst

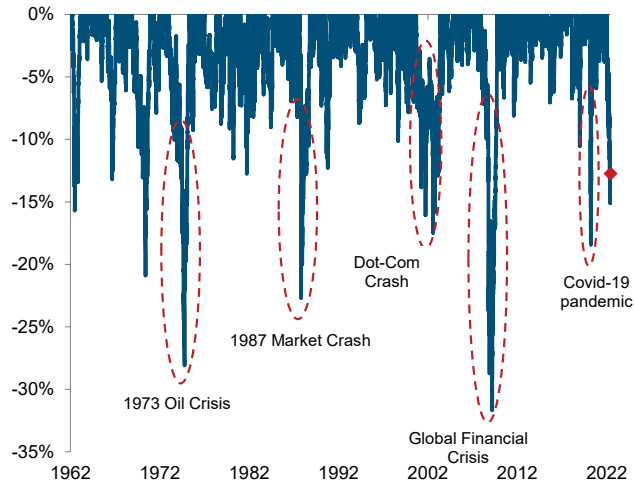
Email: eric.sheridan@gs.com
Tel: 917-343-8683

Goldman Sachs & Co. LLC

Cross-asset performance...

Balanced portfolios have experienced large drawdowns...

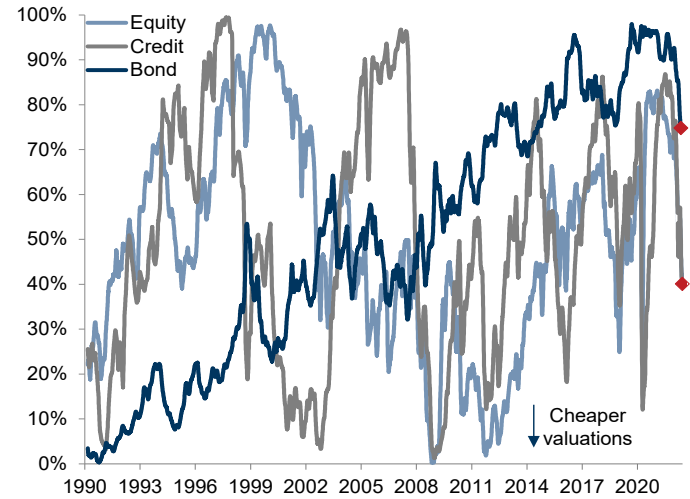
1-year drawdowns for a 60/40 portfolio



Daily returns, monthly rebalancing; data as of June 9, 2022.
Source: Haver Analytics, Datastream, Goldman Sachs GIR.

...and valuations have fallen, especially for risky assets

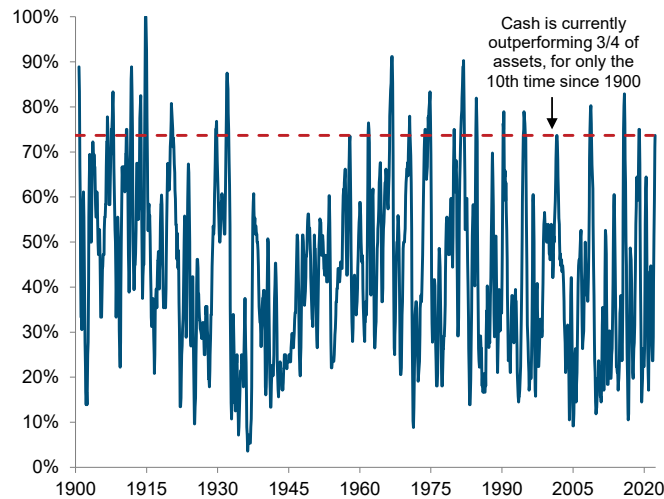
Average valuation percentile since 1990, 4-week moving avg



Equity: NTM P/E of S&P 500, MSCI Europe, MSCI EM, Credit: spread of US HY, IG, EUR HY, IG, EMBI, Bond: 10y yield of US, Germany, Japan; data as of 6/9/22.
Source: Datastream, I/B/E/S, Goldman Sachs GIR.

Cash outperformed most assets in past several months...

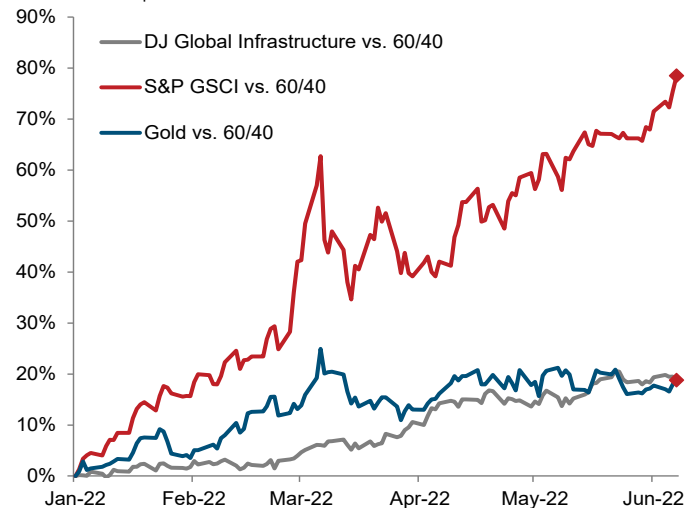
% of assets with 6m returns lower than T-Bills, 2m MA



Assets: S&P 500, SXXP, DAX, FTSE, TOPIX, MSCI EM, US 2y/10y/30y, Germany 10y, Japan 10y, UK 10y, gold, oil, copper, S&P GSCI, DJ Corp, USD IG, USD HY.
Source: Haver Analytics, Datastream, Goldman Sachs GIR (data as of 6/9/22).

...and real assets have outperformed balanced portfolios

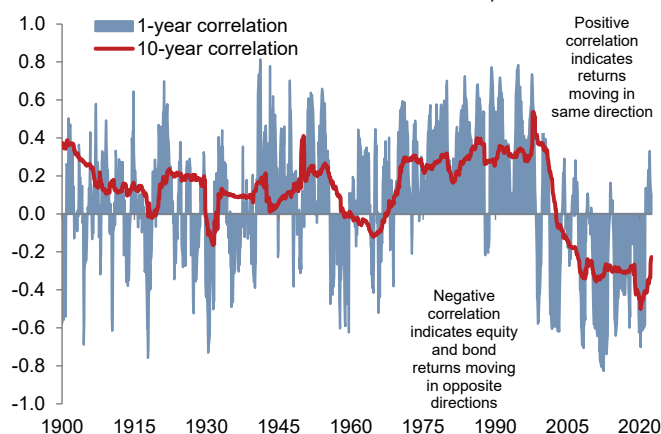
Total return performance



Data as of June 9, 2022.
Source: Bloomberg, Goldman Sachs GIR.

Equity/bond correlations have turned more positive, meaning bonds are providing less of a hedge to equities

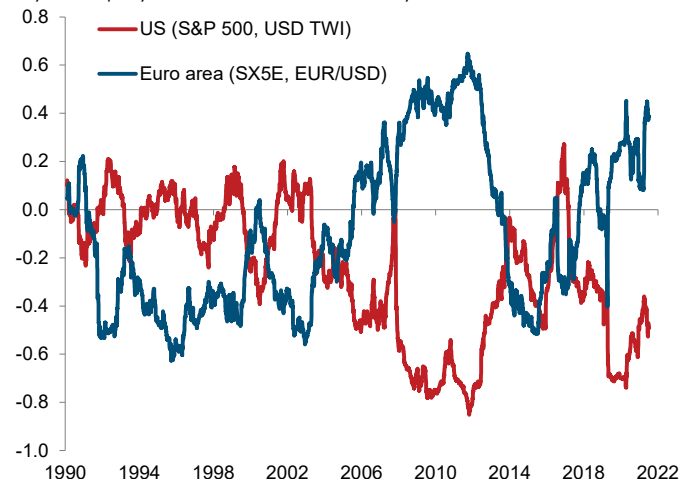
Correlation between S&P 500 returns and 10y UST returns



Source: Datastream, Goldman Sachs GIR (data as of June 9, 2022).
Special thanks to GS portfolio strategist Andrea Ferrario for charts.

Equity/FX correlations have also turned more positive

1-year equity/FX correlation of weekly returns

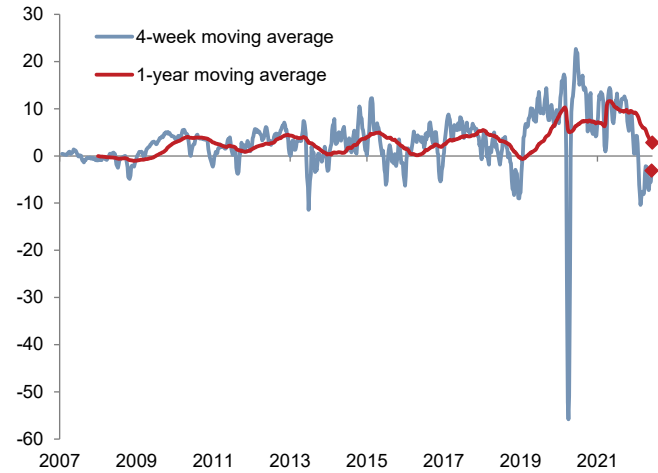


Source: Datastream, Stoxx, Goldman Sachs GIR (data as of June 9, 2022).

...and positioning amid the equity rout

Fixed income flows into DMs have turned negative...

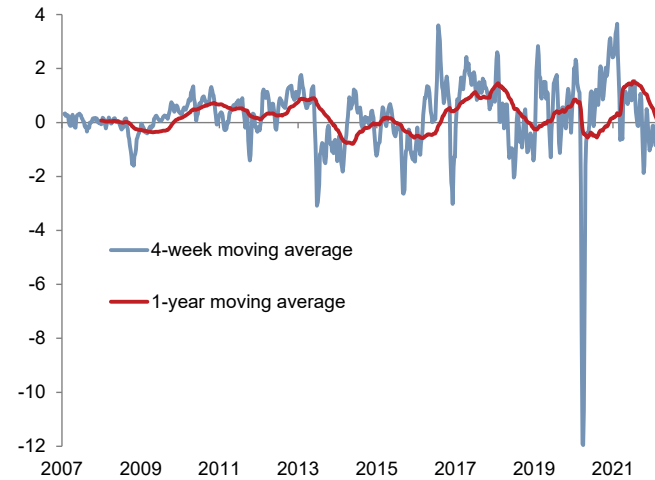
Global fixed income flows to DMs, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Haver Analytics, Goldman Sachs GIR.

...as have fixed income flows into EMs

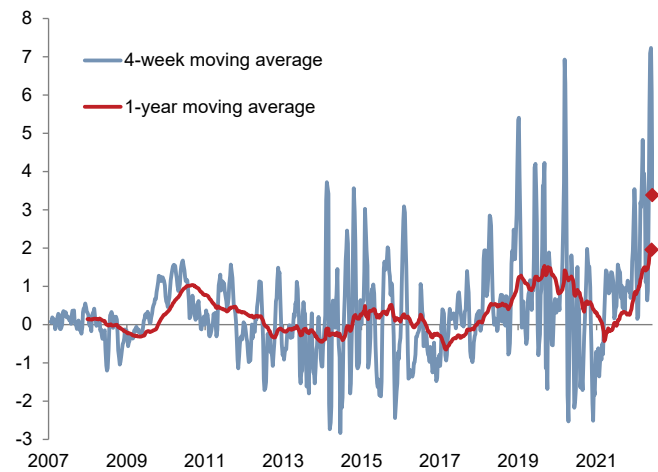
Global fixed income flows to EMs, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Haver Analytics, Goldman Sachs GIR.

Government bond funds have seen substantial inflows...

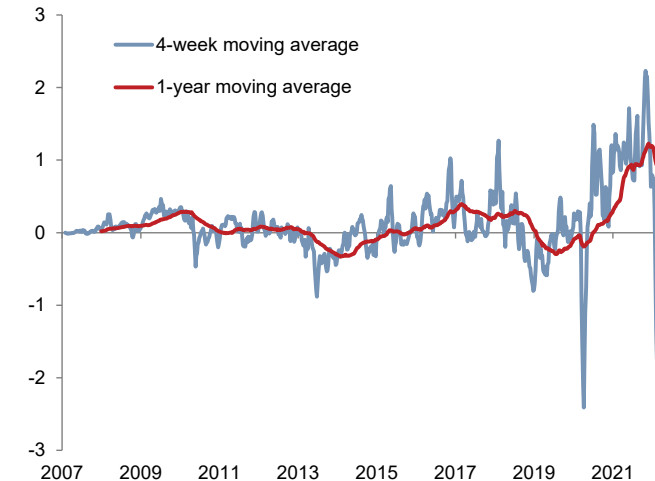
Flows into government bond funds, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Haver Analytics, Goldman Sachs GIR.

...as US inflation-protected bonds have seen sharp outflows

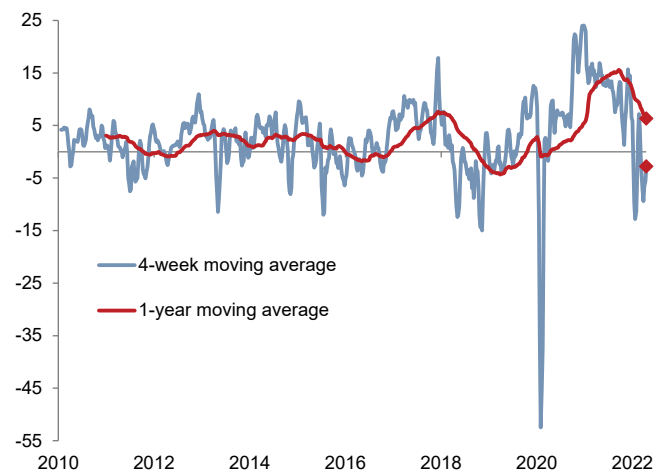
Flows to US inflation-protected bonds, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Haver Analytics, Goldman Sachs GIR.

Cross-border FX flows have turned negative...

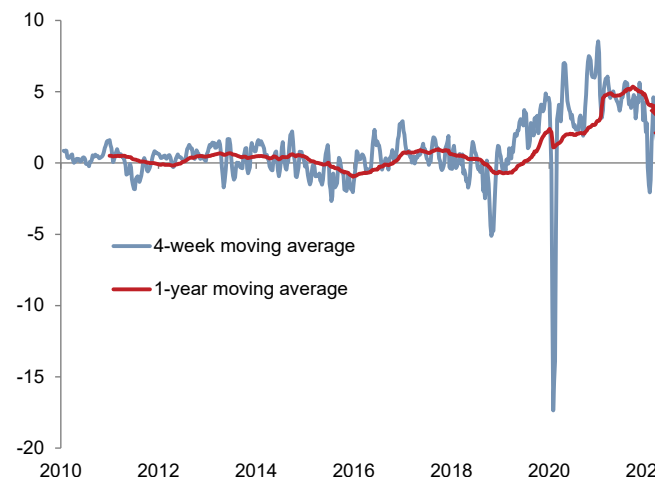
Total global FX flows, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Haver Analytics, Goldman Sachs GIR.
Special thanks to GS market strategist Isabella Rosenberg for charts.

...as US Dollar flows have remained modestly positive

FX flows to US, moving average, \$bn



Data as of June 8, 2022.
Source: EPFR, Haver Analytics, Goldman Sachs GIR.

Taking stock after the correction

Christian Mueller-Glissmann argues that buying the dip in equities is more difficult given the macro headwinds for valuations, and recommends investors increase exposure to real assets and reduce portfolio duration

Amid high and rising inflation, central bank tightening, and slowing growth, asset allocators face a particularly daunting task in constructing portfolios to withstand the messy mix of possible macro outcomes ahead. The sharp rise in bond yields alongside the correction in equities has left investors with few places to hide as inflation and hawkish policy have become the key drivers of rates rather than growth, and have led to one of the largest drawdowns in a simple 60/40 portfolio (60% S&P 500, 40% US 10-year bonds) since WWII.

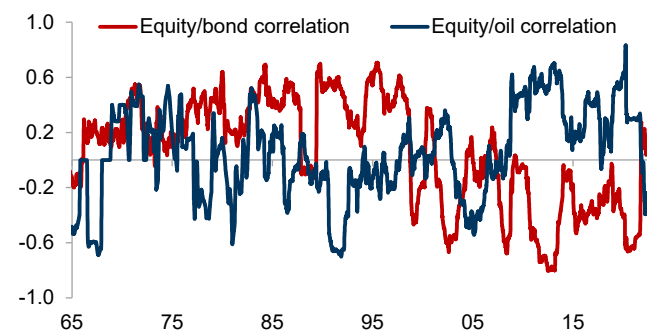
While the asymmetry for risk assets has improved with lower valuations and more bearish positioning, recent valuation declines haven't been enough for investors to once again turn bullish on equities, especially as the equity risk premium (ERP) is relatively low. In our view, the combination of above-trend inflation and slowing growth means that both equities and bonds will likely remain vulnerable until the growth/inflation mix improves. We therefore recommend investors increase allocations to real assets and reduce duration risk to hedge against the risk of continued headwinds from macro conditions.

Little help from valuations

After the recent sharp market selloff, absolute valuations across risky assets have fallen below their averages since the 1990s, which typically points to better upside over the medium term. But equity valuations could face continued near-term headwinds from the combination of rising bond yields with sticky inflation and higher equity risk premia due to lingering growth concerns. In contrast to the last cycle where bonds buffered equities during negative growth shocks, inflation volatility rather than growth volatility has been the main driver of recent rates volatility, and higher bond yields have started to weigh on equities as a result. The paradigm shift in the macro environment has been reflected most notably in an important shift in cross-asset correlations, with the equity-bond correlation turning positive and oil-equity correlation negative for the first time since the Global Financial Crisis (GFC).

Equity-bond correlations have turned positive and equity-oil correlations negative for the first time since the GFC

1-year correlation (monthly returns)

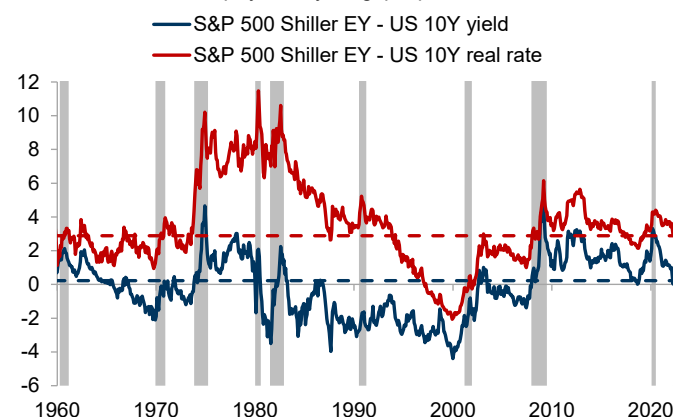


Source: Haver Analytics, Goldman Sachs GIR.

Higher bond yields have increased the hurdle rate for equities to outperform bonds, as they've started to present a more reasonable alternative to equities after their recent selloff. Indeed, despite the correction in equity markets, the yield gap between equities and bonds, which can be a proxy for the ERP, has actually narrowed to one of the lowest levels of the post-GFC era (only the gap to real yields remains high). Higher inflation can create a stronger incentive to own equities, which are ultimately a claim on nominal growth and could provide some inflation protection. But equities now appear more expensive vs. bonds and need to deliver strong or *real* earnings growth to outperform bonds and compensate for the extra risk.

Equity valuations have re-rated vs. bonds

Nominal and real US equity/bond yield gap, bp



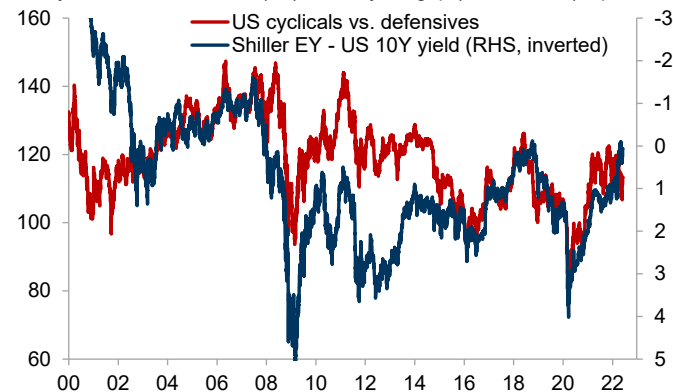
Note: Grey shading denote US NBER recession. Source: Robert Shiller, Haver Analytics, Goldman Sachs GIR.

Macro volatility increases equity risk

Weaker growth and rising recession risk raises the risk that equity valuations de-rate further, both outright and vs. bonds. In particular, while rising bond yields have already led to a sharp drop in equity valuations, rising growth concerns could push up the ERP as investors require greater compensation for holding risk assets, which would raise companies' cost of equity. Indeed, following the recent increase in growth pessimism, there has been upside risk for the ERP based on benchmarking the equity/bond yield gap to the performance of US cyclicals vs. defensives. As a result, more growth optimism and confidence on a soft landing might be needed to stabilize valuations.

The ERP has decoupled from growth pricing within equities

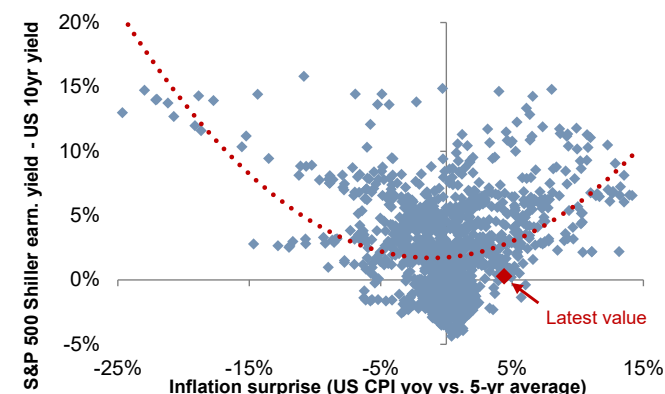
US cyclicals vs. defensives (lhs), index; yield gap (rhs, inverted), bp



Source: Robert Shiller, Bloomberg, Goldman Sachs GIR.

Investors might also demand a higher ERP as equity risk is less easy to diversify in a portfolio with elevated and more volatile inflation. A peak in inflation could provide some relief as investors can fade extreme inflation tails, but the interaction with growth matters as well as the drivers and speed of declines. Sharp declines in inflation due to a negative growth shock could push up real yields unless central banks turn more dovish. But the central bank put might be further out of the money due to lingering inflation risk.

Higher inflation volatility and larger inflation surprises point to upside risk for equity risk premia



Source: Robert Shiller, Goldman Sachs GIR.

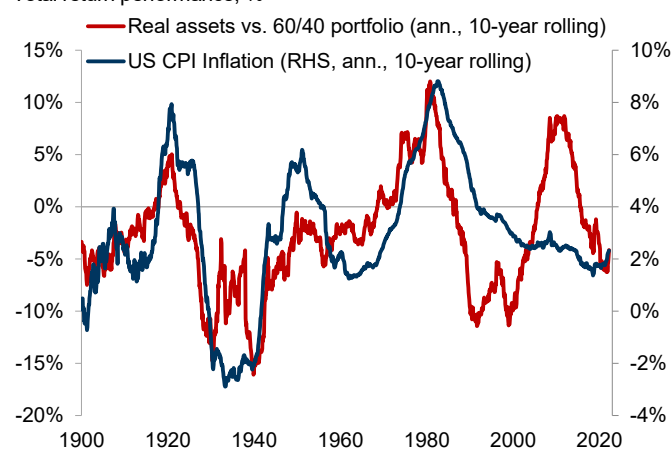
Keep it real and reduce duration

Given the limited diversification benefits between equities and bonds, until inflation settles at lower levels, we recommend investors increase exposure to real assets and reduce duration risk in multi asset-portfolios. Investment in real assets such as commodities, real estate, and infrastructure, as well as collectibles and wine, can offer both the opportunity for uncorrelated returns and competitive real return potential.

Indeed, real assets have been the principal bright spot across the main asset classes YTD and a key diversifier for 60/40 portfolios, and commodities, value, and infrastructure have all materially outperformed their beta to equities. Although some parts of the equity market might also be considered a real asset and offer an inflation hedge if they provide a claim on nominal growth and companies have pricing power or stable input costs, the source of inflation matters. If inflation triggers central bank tightening and increases recession risk—as is the case today—it can weigh on equities, especially those that are leveraged or long-duration.

Real assets have outperformed a 60/40 portfolio in periods of high and rising inflation

Total return performance, %



Note: Real assets is an average of S&P GSCI/broad commodities index (TR) since 1900, Gold since 1939, FTSE NAREIT since 1970, S&P Global Infrastructure since 2000. Kenneth French sector portfolios before.

Source: Datastream, Bloomberg, Kenneth French, Goldman Sachs GIR.

Reducing duration risk across and within assets can also help mitigate the valuation drag from high inflation. While duration is somewhat harder to quantify for equities and bonds, and incorporates not just their sensitivity to bond yields but also the cost of equity, it can generally be reduced by focusing on equities with lower valuations and higher dividend payout ratios. Thus, allocations to higher-yielding, Value stocks, for example, can reduce equity duration risk and the drag from valuation de-rating. While during the last cycle a lot of those turned out to be "value traps", many of them had macro tailwinds recently, e.g. capital-heavy sectors such as energy. And investors may again prefer near-term cash flows relative to uncertain capital gains so long as there's significant uncertainty on "fair" equity valuations.

Near-term challenges, medium-term value

In the near term, we expect lower risk-adjusted equity returns as long as growth and inflation concerns persist, and think cash and commodities are the best portfolio hedges to the current set of macro risks. We are neutral equities on a 3m horizon as the risk/reward is likely to remain relatively poor until there is a convincing peak in inflation, corresponding decline in monetary policy uncertainty, and more positive growth momentum. But we still expect low double-digit returns for equities over a six- to twelve-month horizon, which is competitive vs. other asset classes, given our belief that the growth/inflation mix will improve eventually and the risk of a deep recession remains limited (see pgs. 20-21).

Christian Mueller-Glissmann, Sr. Multi-Asset Strategist

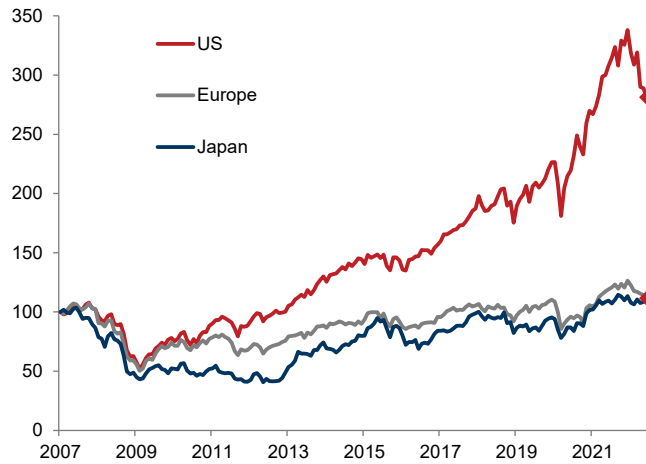
Email: christian.mueller-glissmann@gs.com
Tel: 44-20-7774-1714

Goldman Sachs International

Global equity performance

Equity prices have fallen in most places globally...

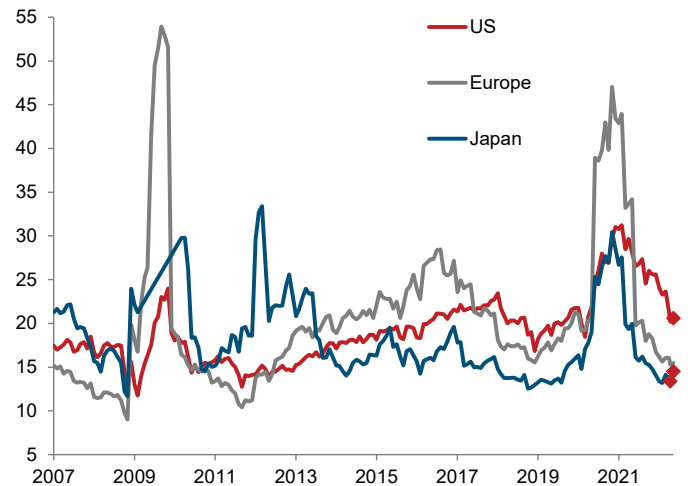
Equity prices by MSCI regional index, 1/31/2007 = 100



Data as of June 9, 2022.
Source: MSCI (USA Index, AC Europe Index, Japan Index), Goldman Sachs GIR.

...as have valuations

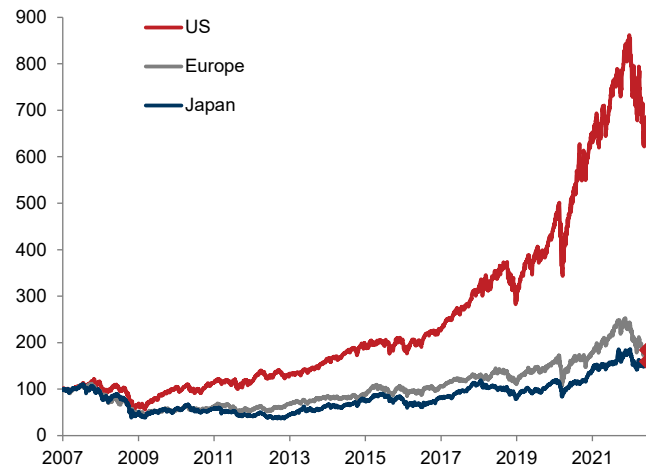
P/E ratios of MSCI regional indices



Data as of June 9, 2022.
Source: Bloomberg, MSCI, Goldman Sachs GIR.

Tech stocks have fallen across many regions...

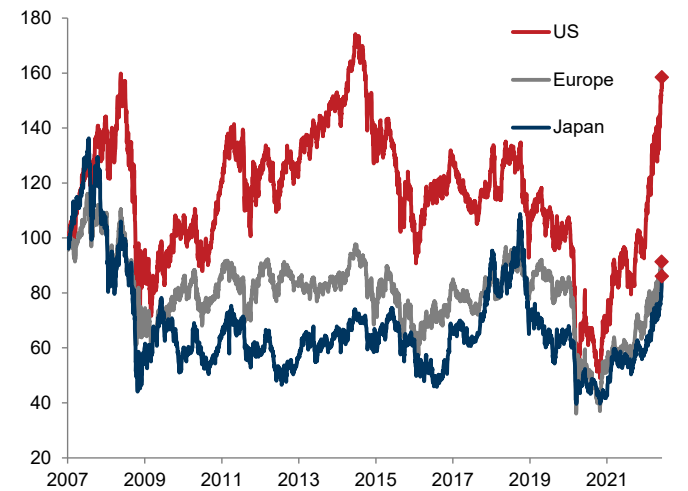
MSCI Information Technology Index prices, 1/4/2007 = 100



Data as of June 9, 2022.
Source: Bloomberg, MSCI, Goldman Sachs GIR.

...while Energy stocks have risen globally

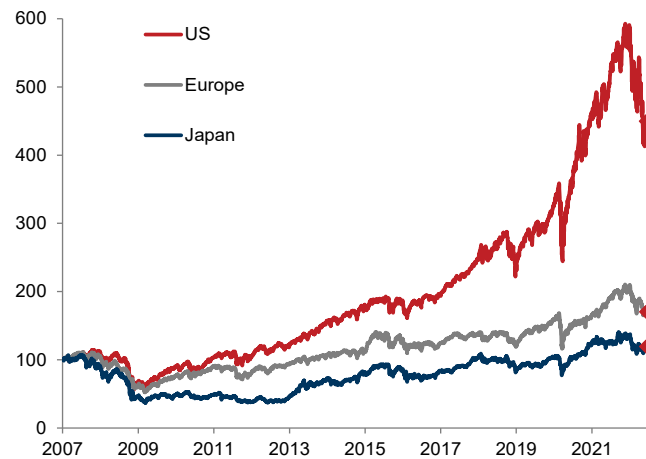
MSCI Energy Index prices, 1/4/2007 = 100



Data as of June 9, 2022.
Source: Bloomberg, MSCI, Goldman Sachs GIR.

Growth equities are falling out of favor...

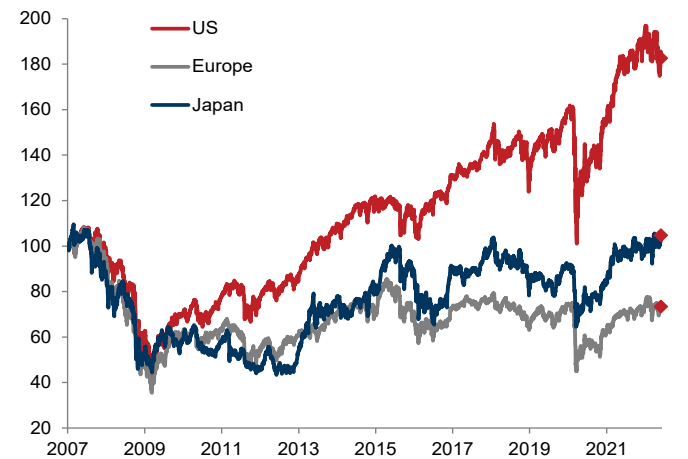
MSCI Growth Index prices by region, 1/1/2007 = 100



Data as of June 9, 2022.
Source: Bloomberg, MSCI, Goldman Sachs GIR.

...as Value stocks have gained in most regions

MSCI Value Index prices by region, 1/1/2007 = 100



Data as of June 9, 2022.
Source: Bloomberg, MSCI, Goldman Sachs GIR.

Summary of our key forecasts

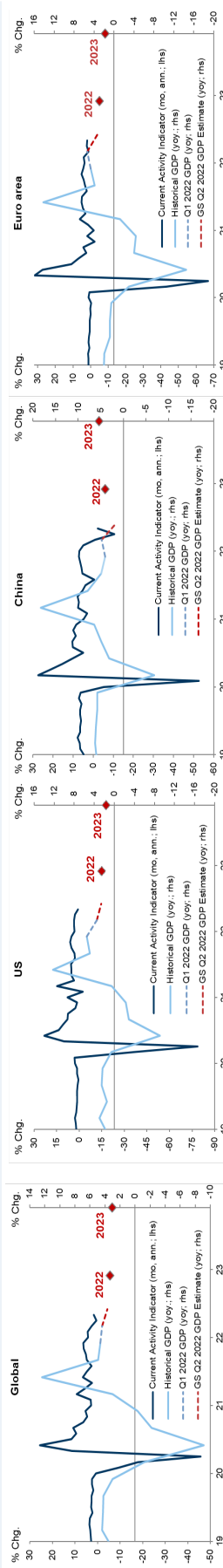
GS GIR: Macro at a glance

Watching

- **Globally**, we expect below-trend Q4/Q4 real GDP growth of 2.1% in 2022 as the sizable growth drags from the Russia-Ukraine conflict, tighter financial conditions, and sluggish real income growth more than offset medical improvements and a consumption boost from pent-up savings. We expect the conflict to exacerbate the supply-demand imbalance at the heart of the global inflation surge in the near term, but think the combination of a moderation in demand growth, improvements in goods and labor supply throughout 2H22, and tighter monetary policy will be sufficient to bring inflation back toward DM central banks' targets over the next two years.
- **In the US**, we expect Q4/Q4 growth to slow to 1.3% in 2022, driven in large part by a substantial fiscal drag and a negative impulse from tighter financial conditions. We expect core PCE inflation to fall to 4.0% by end-2022, although further supply chain disruptions, stronger wage growth, or firmer shelter inflation could keep inflation somewhat higher for longer. We see the unemployment rate falling to 3.4% in the next few months before rising back up to 3.5% by end-2022 and 3.7% by end-2023.
- **We expect the Fed** to deliver 75bp rate hikes in June and July, a 50bp hike in September, and 25bp hikes in November and December. We expect a terminal Fed funds rate of 3.25-3.5%. On the fiscal policy front, we think Congress will make only modest fiscal policy changes this year; we still see a chance that Congress could pass a scaled-down reconciliation bill focused on energy, but we think the odds lean against passage this year.
- **In the Euro area**, we expect Q4/Q4 growth of 1.3% and see the war in Ukraine weighing significantly on growth via a large drag on consumer spending from high energy prices, weaker trade, and tighter financial conditions. We expect core inflation to peak at 3.9% in June before falling back to 3.4% by December, but the potential for large-scale disruptions in Russian gas flows presents sizable downside risk to our growth forecast and upside risk to our inflation forecast.
- **We expect the ECB** to lift off with a 25bp hike in July followed by 50bp hikes in September and October before a return to a more gradual 25bp pace in December. We expect a terminal rate of 1.75%. While a Russian gas ban or a re-emergence of sovereign stress could lead to slower policy normalization, clearer signs of more sizable inflationary effects could require a faster exit.
- **In China**, we expect full-year real GDP growth of 4.0% in 2022. On a sequential basis, we expect -7.5% qoq ann. growth in Q2, which would be the lowest on record other than 1Q20, before a sharp rebound to 17.5% qoq ann. in Q3 ahead of the 20th Party Congress in the fall. We view risks to our growth forecast as two-sided, but see a larger downside tail given that Covid, housing, and external demand could prove more challenging than in our baseline.
- **WATCH THE RUSSIA-UKRAINE CONFLICT AND COVID**. We expect the impact on global growth from the Russia-Ukraine conflict to be sizable, with the largest hit concentrated in the region itself, the Euro area, and other commodity-importing countries, but see greater upside risk to inflation from the surge in global energy and food prices. On the virus front, we expect that ongoing behavioral adjustments will limit the economic impact of the pandemic in most major economies (excluding China) throughout the rest of the year, though the emergence of a worse variant that more than offsets these adjustments remains a major downside risk.

Goldman Sachs Global Investment Research.

Growth



Source: Haver Analytics and Goldman Sachs Global Investment Research.

Note: GS CAI is a measure of current growth. For more information on the methodology of the CAI please see 'Lessons Learned: Re-engineering Our CAIs in Light of the Pandemic Recession', Global Economics Analyst, Sep. 29, 2020.

Forecasts

Economics	GDP growth (%)		Interest rates 10Yr (%)		Markets		Equities																										
	2022	2023	Last	E2022	E2023	FX	Last	3m	12m	S&P 500	E2022	E2023	Returns (%)	12m	YTD	EZ022 P/E																	
Global	2.1	3.3	3.2	3.0	3.0	EUR/\$	1.04	1.05	1.15	Price	4,300	--	--	S&P500	20.0	-21.0	16.6x																
US	1.3	2.5	2.6	1.6	2.0	GBP/\$	1.22	1.19	1.25	EPS	\$226	\$230	\$239	MXAPJ	18.0	-15.0	12.4x																
China	4.5	4.0	4.5	5.3	5.2	\$/JPY	134	125	123	Growth	8%	10%	6%	Topix	14.0	-6.0	13.6x																
Euro area	1.3	2.9	2.6	1.7	2.1	\$/CNY	6.7	6.75	6.4					STOXX 600	15.0	-16.0	12.1x																
Policy rates (%)			Commodities		Credit (bp)						2022		2023		Wedge Tracker 2022 (%)																		
US	3.38	3.85	3.38	3.85	3.38	3.85	Crude Oil, Brent (\$/bbl)	122	140	130	USD	IG	136	140	151	US	8.1	8.1	Unemp. Rate	3.5	3.5	3.7	5.8	--	--	--	Q1	Q2	Q3	Q4			
Euro area	1.00	1.57	1.75	2.26	2.10	2.79	Nat Gas (\$/mmBtu)	8.61	6.80	3.80	HY	438	427	500	Euro area	7.6	7.1	3.6	6.9	--	--	--	--	--	--	--	--	--	--	--	--		
China	2.10	2.70	2.10	2.79	2.10	2.79	Copper (\$/mt)	9,286	10,000	13,000	EUR	IG	199	178	191	China	2.5	--	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Japan	-0.10	0.03	-0.10	0.14	-0.10	0.14	Gold (\$/troy oz)	1,831	2,300	2,500	HY	476	495	555	Japan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Source: Bloomberg, Goldman Sachs Global Investment Research. For important disclosures, see the Disclosure Appendix or go to www.gs.com/research/hedge.html.

Market pricing as of June 13, 2022.

Glossary of GS proprietary indices

Current Activity Indicator (CAI)

GS CAIs measure the growth signal in a broad range of weekly and monthly indicators, offering an alternative to Gross Domestic Product (GDP). GDP is an imperfect guide to current activity: In most countries, it is only available quarterly and is released with a substantial delay, and its initial estimates are often heavily revised. GDP also ignores important measures of real activity, such as employment and the purchasing managers' indexes (PMIs). All of these problems reduce the effectiveness of GDP for investment and policy decisions. Our CAIs aim to address GDP's shortcomings and provide a timelier read on the pace of growth.

For more, see our CAI page and Global Economics Analyst: Trackin' All Over the World – Our New Global CAI, 25 February 2017.

Dynamic Equilibrium Exchange Rates (DEER)

The GSDEER framework establishes an equilibrium (or "fair") value of the real exchange rate based on relative productivity and terms-of-trade differentials.

For more, see our GSDEER page, Global Economics Paper No. 227: Finding Fair Value in EM FX, 26 January 2016, and Global Markets Analyst: A Look at Valuation Across G10 FX, 29 June 2017.

Financial Conditions Index (FCI)

GS FCIs gauge the "looseness" or "tightness" of financial conditions across the world's major economies, incorporating variables that directly affect spending on domestically produced goods and services. FCIs can provide valuable information about the economic growth outlook and the direct and indirect effects of monetary policy on real economic activity.

FCIs for the G10 economies are calculated as a weighted average of a policy rate, a long-term risk-free bond yield, a corporate credit spread, an equity price variable, and a trade-weighted exchange rate; the Euro area FCI also includes a sovereign credit spread. The weights mirror the effects of the financial variables on real GDP growth in our models over a one-year horizon. FCIs for emerging markets are calculated as a weighted average of a short-term interest rate, a long-term swap rate, a CDS spread, an equity price variable, a trade-weighted exchange rate, and—in economies with large foreign-currency-denominated debt stocks—a debt-weighted exchange rate index.

For more, see our FCI page, Global Economics Analyst: Our New G10 Financial Conditions Indices, 20 April 2017, and Global Economics Analyst: Tracking EM Financial Conditions – Our New FCIs, 6 October 2017.

Goldman Sachs Analyst Index (GSAI)

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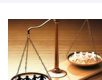
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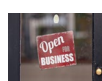
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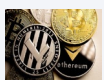
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