Private Bank citi

Citi Global Wealth Investments

April 21, 2022

Global Strategy | Quadrant

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The Late, Late, Late Fed Show

The Fed is set to begin "rapid" quantitative tightening (QT) just two months after quantitative easing (QE). Short-term US debt instruments also price in one of the largest increases in US policy rates in history over the remainder of the year. This is against the backdrop of fading fiscal stimulus.

The Fed has positioned policy to be pro-cyclical rather than countercyclical, likely adding to financial market and economic volatility. Along with the effects of a worsening commodity shock, we've cut our US real GDP forecast for 2022 from +3.5% to +1.9% By easing during a boom year in 2021 - and possibly "over-correcting" - the Fed is raising recession risk for 2023. We put the probability at 30% on the belief that the Fed has time to adjust its course while supply fundamentals recover. The Fed has rarely tightened into a supply shock which has no precedent for a monetary cure.

After a -18% year-to-date return in long-duration US Treasuries, we have added an overweight for the first time since yields bottomed in 2020. Lagging indicators such as employment and inventory restocking provide "inertia" for economic growth to continue this year. However, a demand slowdown is inevitable. We've shifted 2% of medium-risk global portfolios into long-duration Treasuries and may make further upward adjustments (We also continue to hold an overweight in TIPS, at reduced scale).

The overall global Fixed Income weighting remains -3% as we retain large underweights in European and Japanese government bonds. However, long-term European sovereign yields may also stabilize or fall in the year ahead.

Historically, the highest quality long-term government bonds are one of the few assets with a negative correlation to equities during large corrections. When US equities have dropped 20% or more during the past three decades, long-term US Treasury returns have averaged +12%. While a bear market is not our base case, along with a 2% overweight in gold, we have further shifted our asset allocation seeking to hedge downside risks.

Our global equities allocation remains 2% overweight. However, excluding our 4% allocation to natural resources producers and oil services, the weighting is -2%. After briefly rising to $128 per barrel in early March, the crude oil price has fallen 23%. Nonetheless, most global commodities futures prices for the next two years have risen, signaling a rise in profits for natural resources producers at the expense of consumers. This is on the likelihood of prolonged supply disruptions from Russia/Ukraine.

Very large releases of strategic oil reserves have helped stem the oil price spike, but as this is merely an inventory drawdown, oil futures measured over the remainder of the decade changed by only $0.10 per barrel on the news. The drop in oil will limit near-term inflation to less than we projected, with the US CPI likely to peak for the cycle near 8.5% year/year (and the Fed's preferred inflation gauge well below this level). However, most other commodities do not have large and effective strategic reserves. The "downstream" effects of rising input costs will still impact many final products in time.

The only true cure for commodity shortages is rising production. The upward "tilt" in futures curves suggests a potentially long holding period for our thematic investments in natural resources and oil services. This is the case even if commodity futures prices don't rise.

Our thematic investments in natural resources are, however, a special situation within cyclical industries. With growth likely to slow, and government bond yields likely to peak, we would not shun high-quality growth equities. We hold thematic overweights in pharmaceuticals, cybersecurity and fintech/payments shares. We hold the most consistent global dividend growth equities overweight, while underweight small cap shares. This is to emphasize balance sheet quality and profitability. Credit markets are firm, but will likely come under increased stress later in the central bank policy tightening cycle.

GIC | April 20

The Global Investment Committee increased its allocation to long-term US Treasuries today for the first time since yields bottomed in 2020, shifting 2% of medium-risk portfolios from intermediate-duration corporate debt (where we have maintained a large overweight.)

The longest duration US Treasuries have posted a -18% year-to-date total return and a 34% loss in value in the past two years. This matches the most severe drop in value in history, posted during the recovery from the Global Financial Crisis.

The overall Global Fixed Income allocation remains at -3% given large underweights in Europe, Japan. Global equities and Gold are both 2% overweight, with cash -1%. Along with many other steps taken since 2021, our action was taken to position portfolios to absorb greater market volatility and less robust economic growth following a strong recovery.

The Federal Reserve has adjusted its policy approach to be *reactive* to inflation rather than *pre-emptive.* This followed a decade of disinflation in the aftermath of the 2008/2009 Global Financial Crisis. In doing so, the Fed has positioned its monetary policy to be pro-cyclical rather than countercyclical in the period ahead.

In the words of Fed Governor Brainard, the US central bank is set to begin "rapid" quantitative tightening (QT) just two months after quantitative easing (QE) has ended. Short-term US debt instruments now also price in one of the largest increases in US policy rates in history over the remainder of the year. (After raising the Fed funds rate 25 basis points in March, markets expect about 200 basis points of further increases by end 2022). This is against the backdrop of fading fiscal stimulus, with US Federal spending down 22% in the year-to-date.

By easing during a boom year in 2021 and possibly "over-correcting" this year, the Fed is raising recession risk. We estimate the probability of recession in 2023 at about 30% as we believe the Fed still has time to adjust its course while supply fundamentals recover. However, a slowdown in demand is inevitable.

A combination of surging US imports and rebounding domestic production is raising US goods supplies faster than the underlying demand pace. This should mean the US inflation rate will slow markedly from a forty-year high in the year ahead. However, near-term supply risks remain on several fronts, including COVID developments in China. (While fiscal and monetary policy will slow demand, there is no precedent for a monetary cure for goods shortages).

In Global Equities, we maintain a 4% overweight to global natural resources firms and the oil services sector as we see a widespread, lasting loss of commodity exports from Russia and Ukraine. Excluding this allocation, our global equities weighting is -2%.

Very large releases of strategic oil reserves have helped stem an oil price spike above $125 per barrel in the initial days of the conflict. Oil has dropped more than 20% in recent weeks. However, the SPR release is merely an inventory drawdown, not a replacement for production. As such, long-term oil futures prices only shifted only slightly as a result.

ASSET CLASSES | Global USD with Alternatives Level 3

	-2	-1	0	1	2
FIXED INCOME					
Developed Sovereign		→			
Developed Investment Grade Corporates				←	
High Yield		X			
Emerging Market Sovereigns				X	
EQUITIES					
Developed Equities		X			
Large Cap				X	
US				X	
Europe		X			
Asia ex-Japan			X		
Japan		X			
Small and Mid Cap		X			
US SMID Cap		X			
Non-US SMID Cap	X				
Emerging Market Equity				X	
Thematic Equity*					X
CASH		X			
COMMODITIES					X

*Thematic equities include, Cyber security, Fintech, Pharmaceuticals, Global Natural Resources and US Oilfield Services.

Please refer to the Portfolio Allocations for a comprehensive breakdown of the portfolios at each risk level.

-2 = very underweight | -1 = underweight | 0 = neutral |
1 = overweight | 2 = very overweight

Arrows indicate changes from previous GIC meeting

Nonetheless, the drop in crude oil will limit near-term inflation to less than we projected, with the US CPI likely to peak for the cycle near 8.5% year/year in the March and April readings (the later report to be released in mid-May). However, most other commodities do not have large and effective strategic reserves. The "downstream" impacts of rising input costs will still impact many final products in time. Disruptions to agricultural markets and supplies will be just one of many tragic side-effects of the war in Ukraine.

The upward "tilt" in futures curves suggests a potentially long holding period for our thematic investments in natural resources and oil services firms. This is even if commodity futures prices don't rise. Our thematic investments in natural resources are, however, a special situation within cyclical industries. With growth likely to slow, and government bond yields likely to peak, we continue to hold more defensive sectors and large cap quality growth equities at the expense of more cyclical small caps (underweight). We hold thematic overweights in pharmaceuticals, cybersecurity and fintech/payments shares. We hold the most consistent global dividend growth equities overweight. This is to emphasize balance sheet quality and profitability.

High quality long-term government bonds are historically one of the few assets with a negative correlation to equities during large corrections. In 20% or larger US equity drops during the past three decades, long-term US Treasury returns have averaged +12%. While a bear-market is not our base case, along with a 2% overweight in gold, we have further shifted our asset allocation seeking to hedge downside risks.

Credit markets are firm, but will most likely come under increased stress later in the central bank policy tightening cycle. As such, we may make further upward allocations to long-term US Treasuries over time. Our move is aimed at restoring the traditional role of long-term bonds and equities as potential "risk offsets" in asset allocation portfolios. At yields as low as 0.5% for 10-year US Treasuries in 2020, we saw little value in such a strategy. The rise of more than 200 basis points across the US yield curve now makes US fixed income more attractive, including municipal bonds for many US-taxed investors. While we retain large underweights in European and Japanese government bonds, long-term European sovereign yields may also stabilize or fall in the year ahead.

Steven Wieting
Chief Investment Strategist
& Chief Economist

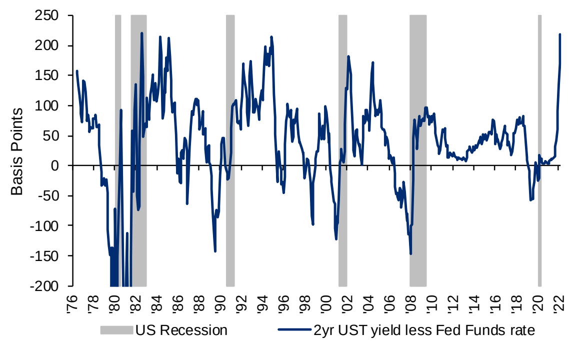
The Late, Late, Late Fed Show

The US Treasury long bond total return has dropped 18% in the year-to-date and 34% over the past two years. Yields are up roughly 200 basis points across all durations of 2 years or longer.

Whatever monetary policy is "right" or "least wrong" for the period of economic turmoil the world is enduring (COVID shock, COVID stimulus, COVID shortages, the Russia/Ukraine conflict), one thing should be undeniable: The Federal Reserve has made one of its most abrupt "about faces" in history. Assuming the words of Fed officials become deeds, the Fed will begin "rapid" Quantitative Tightening (QT) roughly two months after Quantitative Easing (QE). The central bank will go from accommodating a sharp fiscal expansion to reinforcing a fiscal contraction. Its short-term interest rate increases in the year ahead will roughly match the largest for an annual period in history (see figure 1).

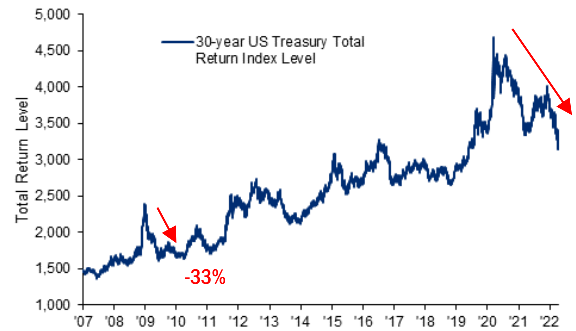
Of course, an inflationary recovery *should* generate higher bond yields. But will this go on forever? The value of 30-year US Treasury securities – the benchmark "long bond" – has fallen nearly 18% in value in the year-to-date. Its cumulative total return has been -34% from the 2020 peak. Compared to the start of the last cycle, inflation is higher, yields are lower, and the spike in rates has been less abrupt. With that said, the drop in long-term bond valuation has still been equal to the largest in history - the snap back in yields after the Global Financial Crisis in 2009 (see figure 2).

Figure 1: US Treasury 2-Year Note Less Fed Funds Rate



Source: Haver Analytics and as of April 20, 2022. Note: Shaded regions are recessions.

Figure 2: US 30-Year Treasury Total Return Index



Source: Bloomberg as of April 20, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

With government bond valuations collapsing, we see the opportunity to add back the portfolio tool that makes diversified asset allocation work: negative correlation.

With these valuation changes, we see the opportunity to add back the factor that drives higher risk adjusted returns in diversified, asset allocation portfolios: negative correlation. Long-term US Treasuries are one of the few traditional assets that usually have a negative correlation to equities during severe corrections. During equity market drawdowns of 20% of more during the past 35 years, long duration US Treasuries have had an average return of +12% (see figures 3-5).

At the miniscule yield of 0.5% for 10-year US Treasuries and 1.0% for 30-year bonds at the low of 2020, we saw asset allocation itself as challenged portfolio concept. We see it differently with 2.5%-3.0% US government bond yields in a period of fiscal and monetary contraction (see figures 9-10).

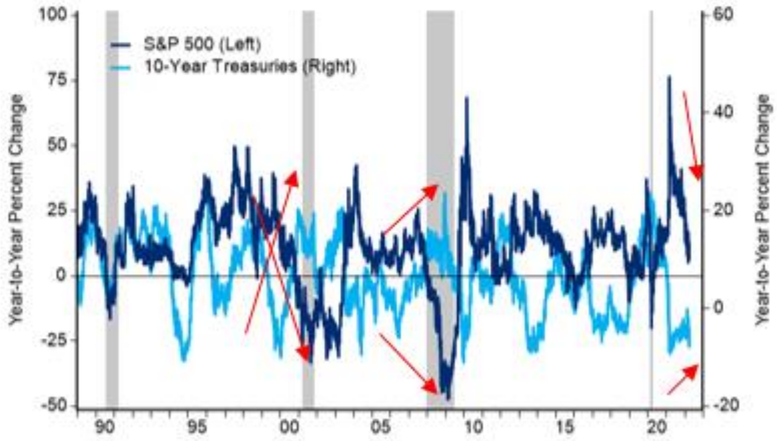
As we began to reduce our overweigh to "risk assets" from a peak of 11% nearly a year ago, - unwinding our comparable underweight to fixed income - we have gradually added a sizeable investment in intermediate US Treasuries and Investment Grade Corporate Bonds. In February, we advised that the significant overweight could be shifted to longer-duration bonds when yields rose further. (please see our February Quadrant). We believe that time is now. (Please see the essay below for a discussion of the opportunity in US municipal bonds for US taxed investors).

Figure 3: Returns of Fixed Income Instruments during Periods of 20% or Larger Declines in S&P 500

Total Return in Fixed Income during 20% US equity correction(%)										
Date of drawdown	# days	US Treasury	UST short	UST intermediate	UST long	US IG corp	US IG corp short	US IG corp intermediate	US IG corp long	US HY corp
Mar-01	251	12.4	9.1	12.6	14.8	12.4	9.9	12.4	13.2	
Jul-08	197	7.6	5.1	8.4	9.4	2.2	3.9	3.2	0.4	(4.4)
Mar-20	17	4.3	1.5	3.1	10.7	(4.0)	(0.7)	(2.4)	(7.0)	(10.8)
Average	*155*	*8*	*5*	*8*	*12*	*4*	*4*	*4*	*2*	*(8)*

Source: Haver as of April 7, 2022. Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Figure 4: Total Return Indices S&P 500 vs 30-Year US Treasury



Source: Haver as of April 15, 2022. Note: Shaded areas refer to US recession periods Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Figure 5: Annualized Absolute Returns of Individual Asset Classes, Diversified Asset Allocation and Risk-Adjusted Returns (Sharpe Ratio).

1950s	1960s	1970s	1980s	1990s	2000s	2010s	Avg 10-Year Return	Risk-Adjusted Return
World ex-US Equities 20.8%	US Small Caps 15.5%	EM Govt USD Bond 14.4%	World ex-US Equities 22.8%	US Equities 18.2%	EM Govt USD Bond 12.9%	US Equities 13.6%	US Small Caps 12.0%	Asset Allocation 0.53
US Equities 19.3%	US Equities 7.8%	US Small Caps 11.5%	US Equities 17.5%	US Small Caps 11.6%	G7 Govt Bond 6.4%	US Small Caps 10.5%	US Equities 11.6%	US Equities 0.49
US Small Caps 16.9%	Asset Allocation 5.4%	World ex-US Equities 10.1%	Asset Allocation 17.4%	Asset Allocation 11.0%	US Investment Grade 6.4%	Asset Allocation 7.7%	World ex-US Equities 10.5%	EM Govt USD Bond 0.43
Asset Allocation 12.1%	World ex-US Equities 5.1%	Asset Allocation 8.0%	US Small Caps 15.8%	G7 Govt Bond 8.0%	Asset Allocation 3.4%	EM Govt USD Bond 6.3%	Asset Allocation 9.3%	US Small Caps 0.38
EM Govt USD Bond 5.3%	Cash 4.1%	Cash 6.5%	US Investment Grade 12.8%	US Investment Grade 8.0%	Cash 2.7%	World ex-US Equities 6.0%	EM Govt USD Bond 8.1%	World ex-US Equities 0.37
Cash 2.0%	EM Govt USD Bond 3.5%	US Investment Grade 6.1%	G7 Govt Bond 12.8%	EM Govt USD Bond 7.7%	US Small Caps 2.2%	US Investment Grade 4.3%	US Investment Grade 5.8%	US Investment Grade 0.18
G7 Govt Bond 0.4%	US Investment Grade 2.4%	G7 Govt Bond 6.1%	Cash 9.1%	World ex-US Equities 7.3%	World ex-US Equities 1.6%	G7 Govt Bond 3.7%	G7 Govt Bond 5.7%	G7 Govt Bond 0.17
US Investment Grade 0.4%	G7 Govt Bond 2.4%	US Equities 5.8%	EM Govt USD Bond 6.4%	Cash 5.0%	US Equities -0.9%	Cash 0.6%	Cash 4.3%	

Source: Office of the Chief Investment Strategist as of April 2022. Note: the Sharpe Ratio is calculated as the average return less the 3-month US Treasury bill yield divided by the standard deviation of the return. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Steven Wieting
Chief Investment Strategist & Chief Economist

With the supply shock worsening, we've reduced our real US economic growth forecast for 2022 to 1.9% from 3.5%

Forecast Update: Lower Inflation or Bust

As discussed in the last *Quadrant* and the past week's *CIO bulletin*, the supply shock from Russia/Ukraine and potentially China's new COVID disruptions has extended the period of scarcity for globally-traded goods. Tragically, the war is likely to generate shortages of food commodities and their key inputs. To limit this, capital must flow to producers who can boost output to make up for the Russia/Ukraine shortfall. As such, in early March, we added thematic investments in Natural Resources producers across the globe by reducing other equities. As figures 6-7 show (as merely two examples), futures prices of key commodities have shifted higher not just in the immediate term, but over the coming couple of years. These prices also show, however, that the "crisis spike prices" of the initial shock aren't likely to be maintained as both demand and supply adjust.

Figure 6: Brent Crude Oil Futures May 2022-May 2024

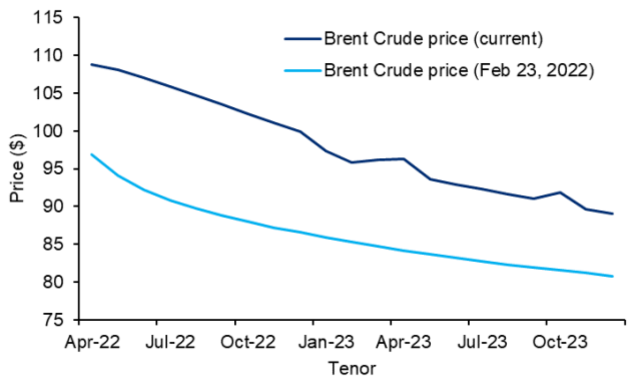
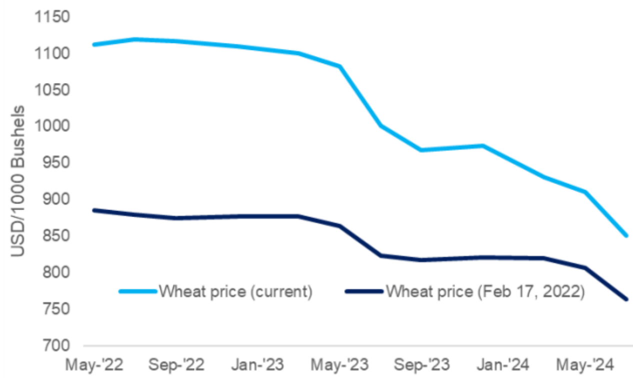


Figure 7: Wheat Futures May 2022-May 2024



Source: Haver Analytics and as of April 15, 2022. Note: All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. Past performance is not indicative of future returns. For illustrative purposes only.

The new supply shortages are not the sole source of continued high inflation. However, they will extend the shock. Compared to our view last year that CPI inflation would end 2022 at a year/year pace near 3%, we now see it near 6.5% before falling to about 3.5% over the course of 2023. This assumes CPI inflation peaks in the near-term at about 8.5%. In other words, we believe the most rapid price rise in consumer prices has already occurred. (Note: for comparison, the Fed's preferred inflation measure – which allows for substitution of goods and services when prices spike – will likely rise 5.0% in 2022 and 2.5%-3% in 2023.)

The absence of fiscal support this year amid high inflation is now forcing consumer demand to drop. Like Fed members, which have cut their median real economic growth view by 1.2 percentage points for 2022, we've cut our US growth forecast by a more severe 1.6 percentage points to 1.9% from 3.5% (see figure 8).

US job gains are strong, but demand *leads* employment.

US real consumer spending on goods hasn't risen above levels reached last April, the month following peak fiscal support (see figures 9-10). While labor markets are continuing to strengthen on the production and trade recovery to refill depleted inventories, demand is the leading indicator for the labor recovery. We now believe that US real GDP will be slightly below 2% in the first half 2022 on demand moderation. After several perhaps "large" rate hikes and Quantitative Tightening, the Fed may look toward a less robust future for labor markets and begin to moderate the policy path forward (please see "Now It's The Fed's Turn to Throw a Tantrum" below).

Real consumer goods spending has declined slightly over the past year.

As discussed in another essay below, the sharp rise in COVID cases in China creates both supply and demand risks. For China, we've cut our outlook to 4% growth for calendar 2022. This is below the 1Q pace, but also well above the likely 2Q pace. This is on the expectation of macro-easing steps and recovery from COVID restrictions in 2H 2022 and beyond. It is not clear that China will report numbers so far below its annual growth target of 5.5%, but we feel the immediate outlook has downside risks policymakers need to address.

While our Eurozone outlook for 2.3% real GDP growth may seem robust for 2022, simply stalling the economy at the 4Q 2021 level would yield 1.9% calendar year growth. This is because of the sharp, albeit lagged gain in Europe's recovery last year. For the EU, a technical recession is possible within the year, in particular if energy shortages worsen. A slowing is reflected in the weaker calendar 2023 growth forecast of 1.8%.

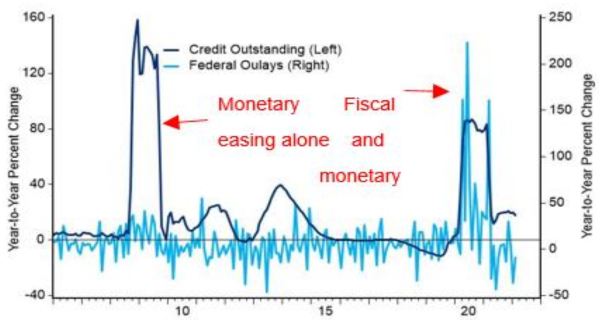
As always, these point forecasts are merely central case estimates associated with a wide range of outcomes. As figures 11-12 show, we see three scenarios for the global outlook accounting for 90% of what we believe is most probable. These real GDP and inflation forecasts are associated with the “Resilient” view, or our base case.

Figure 8: Citi Global Wealth Real GDP Assumptions (%) Change

	2020	2021	2022	2023
China	2.4	8.0	4.0	5.0
US	-3.4	5.5	1.9	2.0
EU	-5.9	4.8	2.3	1.8
UK	-9.7	6.0	3.0	2.0
Global	-3.2	5.6	2.6	2.7

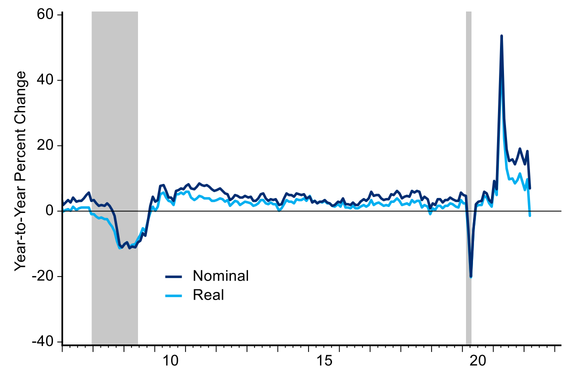
Source: Citi Global Wealth Office of the Chief Investment Strategist as of April 19, 2022, Note: All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. Past performance is not indicative of future returns. For illustrative purposes only.

Figure 9: Fed Credit and Federal Spending



Source: Haver Analytics and as of April 15, 2022. Note: Shaded regions are recessions.

Figure 10: Nominal and Real US Retail Sales



Source: Haver Analytics and as of April 15, 2022. Note: Shaded regions are recessions.

These tables provide three possible scenarios, blending economic, political and central bank information and future actions. While we believe these three to be the most likely outcomes, we note that upside and downside scenarios are also possible, and there is no assurance that any scenario will be achieved. Given the present level of uncertainty, the inputs to our scenarios are subject to change

Figure 11: Three Scenarios for the Economy and Markets

		ROBUST	RESILIENT	RECESSION	
	5%	25%	40%	25%	5%
US economy	Stronger outcomes	US growth exceeds 2.5% in both 2022, 2023	US growth slows toward 2% in 2022-2023, with brief periods below	US recession in 2023 after 2% growth in 2022	Weaker outcomes
Global economy		Europe in very brief contraction within 1H, other regions firm	Europe contracts for half year, weaker US imports slow Asia's recovery	Europe contracts, US import weakness causes global trade retrenchment in 2023	
Inflation		US CPI decelerates from 8% to 2.5% or below in 2023	US CPI peaks above 8.5% near term, stays above 3% on average in 2023 before slowing	US CPI peaks above 8.5%, decelerates to average 3% in 2023, weaker beyond	
Fed		Raises rates 25 bps per meeting, begins QT. Fed slows tightening in response to slower US growth and inflation in 2H 2022	Raises rates at each meeting (50 bps, then 25 per meeting) begins QT, keeps tightening until inflation slows sharply	Raises rates 25 or 50 bps per meeting, begins QT, keeps tightening until recession drives inflation down.	
Global equities		Rally 10% to end 2022 positive, poised for 2023 gains	Single-digit EPS and dividend growth drive broad markets toward near-flat 2022 return. Fed tightening stems sharp rallies along the way.	US equities fall a further 20%, global equities -25% by late 2022	

	ROBUST	RESILIENT	RECESSION
US yields	10-year yield reaches 3% and stays sustainably above 2.5%; Fed funds rate stays at or below 2% during 2023.	10-year yield reaches 2.5%-3% range, but can't sustain above 2.5% with market volatility driving bond inflows (despite Fed QT)	10-year yield peaks near 2.5%, falls to 1.5% by early 2023 on future Fed easing steps. Yield curve inverts sharply
Russia/Ukraine	Both sides make a compromise agreement to end warfare resulting in minor sanctions relief.	No presumptions of end point for Russia/Ukraine hostilities; Russia/Ukraine commodity exports decline sharply but not entirely	Russia hostilities spread, attacks widen. Russia/Ukraine commodity exports decline very sharply.
China	Purchases Russian exports without sanctions, limiting the global supply shock while other producers ramp up production.	Purchases Russian exports without sanctions, but quantities limited. Producers from outside region gradually ramp up supplies over 2 years.	US-Europe/China economic relations devolve further including possible economic sanctions against China.

Source: Haver as of April 15, 2022. Note: All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. Past performance is not indicative of future returns. For illustrative purposes only.

Figure 12: Three Scenarios for the Economy and Markets

	Estimated Fixed Income Outcomes Under Three Scenarios (as of 3/31/22)		
	ROBUST	RESILIENT	RECESSION
10yr US Treasury (2.35% yield)	10yr UST to end 2022 at a 3.1% yield; This would result in an implied annualized total return of roughly -5.5%	10yr UST to end 2022 at a 2.3% yield; This would result in an implied annualized total return of roughly +3%	10yr UST to end 2022 at a 1.5% yield; This would result in an implied annualized total return of roughly +12%
US IG corporates (116bps spread, 8yr duration)	Spreads tighten to 90-110bps on improving credit from growing economy	Roughly flat spreads in 110-130bps range as issuers have easy access to capital/refinancing needs	Roughly 100-150bps of widening would bring IG spreads in-line with the previous three recessions
US HY corporates (325bps spread, 4yr duration)	Spreads tighten to 290-310bps as economy improves and financing cost increase is more gradual	Slightly wider spreads in 310-370bps range, though lower-rated issuers/sectors may find it more difficult to meet capital/refinancing needs	Roughly 400-500bps of widening would bring HY spreads to +700-800bps
EM USD debt (320bps spread, 7yr duration)	Spreads tighten to 250-270bps as dollar appreciation slowed	Roughly flat spreads in 300-340bps range	Roughly 200-300bps of widening would bring EM spreads to +500-600bps

Source: Haver as of April 15, 2022. Note: All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. Past performance is not indicative of future returns. For illustrative purposes only.

Steven Wieting
Chief Investment Strategist
& Chief Economist

The Fed has sustained its maximum policy rate for just 7 months on average in cycles of the past 45 years.

Now It's the Fed's Turn to Throw a Tantrum

- "The main influence of monetary policy on inflation can come after a lag of a year or more. If a central bank tightens policy in response to factors that turn out to be temporary, the main policy effects are likely to arrive after the need has passed." Fed Chairman Powell, August 27, 2021[1]
- "It is of paramount importance to get inflation down…By starting to reduce the balance sheet at a rapid pace as soon as our May meeting …The reduction in the balance sheet will contribute to monetary policy tightening over and above the expected increases in the policy rate reflected in market pricing and the Committee's Summary of Economic Projections. Fed Governor Lael Brainard, April 5, 2022.

[1] Source: Powell's comments were to the Kansas City Fed Monetary Policy Symposium, Jackson Hole Wyoming. Brainard's comments were to the Inclusive Growth Institute, Minneapolis Fed, Minneapolis Minnesota

If the Fed is "late" or "behind the curve," bearish equity investors have been "early."

Sentiment readings for equities are unusually depressed even as the Fed has merely begun to tighten.

Despite ever-more-hawkish Fed comments, investors in US Treasuries have been unwilling to believe the Fed would tighten monetary policy at a historically rapid pace in 2022, and then *sustain* such a course deep into 2023 and 2024. Their view? Either the economy will break, or the Fed will. When parts of the US Treasury yield curve have inverted, all of the usual recession warnings made the rounds. Some woefully downplay the risk. In our view, others overplayed it in the near term (please see our short CIO bulletin on the yield curve).

Even with a shockingly hawkish warning issued from Governor Brainard, investors price bonds with a view toward an eventual *easing* cycle. After all, in seven Fed tightening cycles since 1980, the Fed has sustained its maximum policy rate for only 7 months on average before *cutting* rates. (In the past 45 years, the US Treasury yield curve has been positively slopped in 87% of all months.)

Flat Yield Curve is a True Look Forward

First, consider that the immediate prospects for the economy are not so grim. The US economy added 1.7 million jobs and 2.1 new job seekers in the first quarter. We expect deceleration, but production needs in the US and world economy will keep labor markets buoyant for much of 2022. The output of busy workers is more profitable than idle workers.

While perennially too bullish for the long-term, industry analysts expect a mere 4.9% year/year growth rate for corporate profits in the quarter past. Rolling together their estimates for the S&P 500, the projected EPS level is 4.5% *below* the 4Q 2021 period. How things will evolve in 2023 is still to be seen, but this means near-term profit estimates are unduly conservative during the current earnings reporting season (please see Q1 Earnings: Inflection Point).

Perhaps reflecting the history of geopolitical shocks being regionally contained, US equities have rallied 1.5% since the invasion of Ukraine in late February (see figure 13). Investor sentiment had cratered toward an historic negative extreme reading *just prior* to the conflict, setting the stage for US equities to rebound as much as 11% from this year's low point (see figure 14).

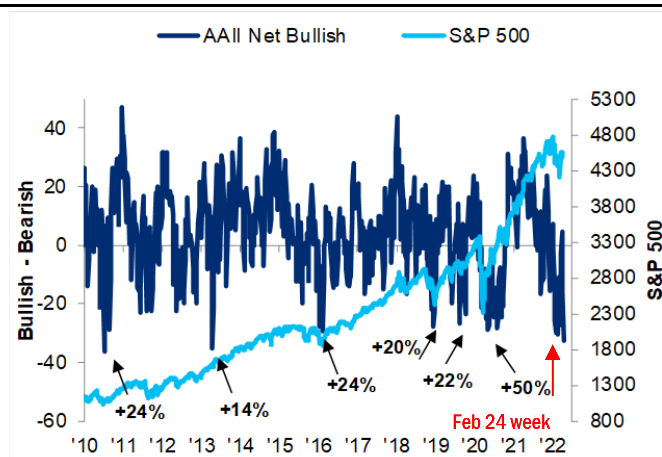
And finally, investors should remember that the yield curve is a true *long-term leading indicator*. When the Fed's policy rate itself (now 0.25%-0.50%) is actually above the 10-year yield, the US economy has on average fallen into recession a year later. With more variability, equities have peaked about 6 months after the 10s/fed fund curve inverts. So, if we judge the Fed policy to be "behind the curve" and late, bearish investors have been early.

Figure 13: S&P 500 performance around 20 geopolitical shocks beginning with Pearl Harbor

S&P 500	Initial Impact %	30 days %	90 days %
Average all events	-3.7	0.3	2.7
Average ex WW2	-3.5	0.4	3.4
Average ex WW2 and Oil Embargo	-2.9	0.7	4.4

Source: Haver Analytics and as of April 15, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Past performance is no guarantee of future results. Real results may vary.

Figure 14: Individual investor net Bull/Bear and S&P 500 subsequent 12-month total return (%) from extreme negative readings



Source: Bloomberg as of April 20, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Given the market action, Fed hawks must feel emboldened. With investors failing to fear the Fed adequately, Fed Vice Chair nominee Lael Brainard told a conference that the Fed can shrink its balance sheet "at a rapid pace" as soon as May. Coming from a key policymaker perceived to be among the most dovish, this set both the bond and stock market back in recent weeks. US yields broke above 2.5% for all issues longer than 2-years in duration, with the longest duration bonds near 3%.

Did the Fed plan 3 rate Cuts in 2019? No, it Didn't!

After shrinking its balance sheet in 2017-2019, the Fed approached the COVID shock with policy rates too low to provide sufficient stimulus.

The Federal Reserve's March minutes said, "reducing the size of the Federal Reserve's balance sheet would play an important role in firming the stance of monetary policy." Suddenly gone was mention of the Fed's "principle" of viewing "changes in the target range for the Federal funds rate as its primary means of adjusting the stance of monetary policy." Instead, the committee could soon phase in an approach of shedding $95 billion per month from US Treasury and mortgage securities holdings, close to the size of all maturing monthly issues.

If this was not enough, "many participants noted that one or more 50 basis point increases in the target" would be appropriate at future meetings. Unlike 2021, when the Fed eased through a period of new fiscal stimulus including income support for 85% of households, this year, Federal spending is down 22% year-to-date.

In essence, WT makes future QE more probable.

Libertarian Former Senator Ron Paul, author of "End the Fed" would surely approve of the Fed's decision to make its bond portfolio disappear. Nonetheless, we have great doubts that the Fed will "fade away." We don't believe the underlying strength of the US economy is more vigorous now than it was in 2017-2019 (please see discussion above). Then, the Fed projected it would raise short-term rates to 3.1% by end 2019 while shrinking its balance sheet indefinitely by $50 billion per month. Instead, the Fed cut rates 75 basis points to 1.5%-1.75% and ended Quantitative Tightening early at an unscheduled FOMC meeting.

The Fed may now have hopes that QT will result in higher long-term interest rates, providing one source of restraint on the US economy. However, the experience of 2018 didn't show this. Instead, the yield curve inverted despite the Fed's effective increase in bond supply as it weighed on other asset classes (see figure 15). Therefore, partly because of QT, the US entered the 2020 COVID shock with interest rate levels too low for conventional policy rates adjustments to provide adequate stimulus. QE was there once again.

Figure 15: S&P 500 performance around 20 geopolitical shocks beginning with Pearl Harbor

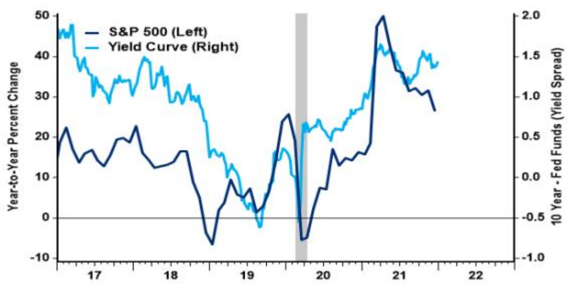
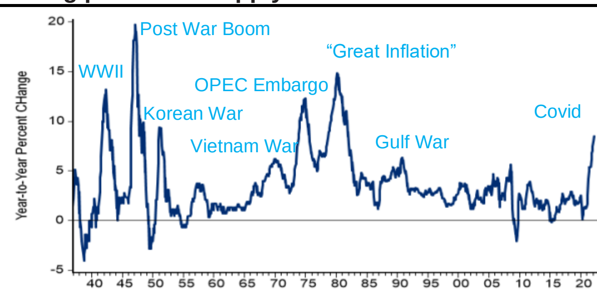


Figure 16: The Fed has never stabilized inflation during periods of supply shocks and war



Source: Haver Analytics as of April 20, 2022. Note: Shaded regions are recessions. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

As we've noted before, periods of supply shocks, particularly wars, have never been periods when central banks could stabilize inflation (see figure 16). We rather tend to appreciate US Treasury Secretary Janet Yellen's candor that "this will be another year of uncomfortably high inflation." Collapsing demand to the lower level of impaired supply doesn't seem to be best way to address this. Instead, rapid gains in imports and more encouraging signs of domestic production should be given time (see figures 17-18). The demand side of the economy is already cooling on contracting fiscal support (again see figures 9-10).

Figure 17: Real goods imports and US inventory/sales ratio

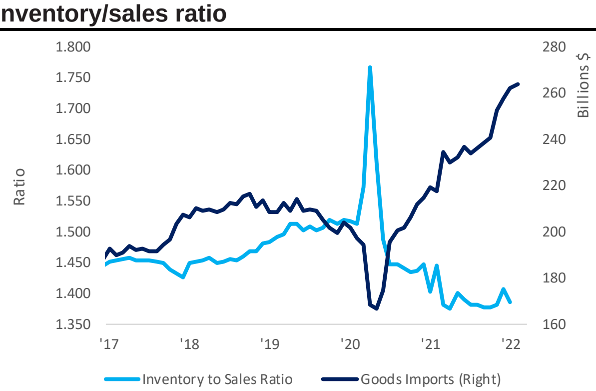


Figure 18: US industrial production and manufacturing employment

Source: Haver Analytics as of April 20, 2022.

Source: Haver Analytics as of April 20, 2022.

There are many signs that the Fed could shift from one mistake (over-stimulus) to another (excessive tightening.) Setting the stages for a severe monetary and fiscal contraction this year won't drive immediate recession, but it could discourage the supply response that is needed to stabilize inflation. Millions of job losses in 2023 and discouraged producers could lead to a lower equilibrium for both supply and demand. If this is the case, higher interest rates won't be the economy's largest problem.

As we wrote in recent weeks, we believe the probability that long-term US Treasury yields are nearing a peak is about 75% (see figures 19-20). This has implications for growth stock valuations as discussed below.

Figure 19: *Positive economic surprises near record high likely to soften after spurring yield rise*

Citi US economic surprise index vs quarterly change in US 10-year yield

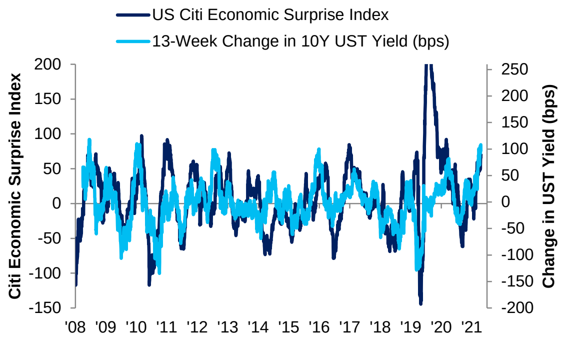
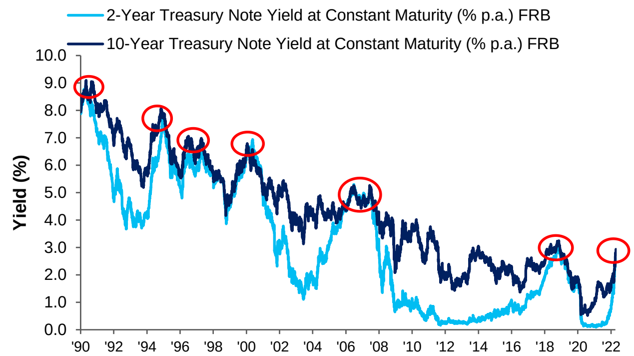


Figure 20: *Moves toward an inverted yield curve most often occur near the peak in long yields*

US 10-year and 2-year Treasury yields



Source: Bloomberg and FactSet and as of April 19, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Downward pressure on equity valuations can abate if long-term discount rates don't climb higher. However, Fed policy tightening - through its impact on risk premia and the economy's performance in 2023 - argues for quality growth over speculative growth. This means favoring well capitalized firms over those in need of external financing to execute their strategies or simply remain in business.

We believe that in a slower growth environment, the value of companies with dependable, visible growth increases. When growth becomes scarcer, it becomes a greater standout of value. We think this will likely happen by spring. As we wrote in our CIO Bulletin Feb. 22: *As the boom ends, and the Fed possibly over-reacts, a peak in long-term yields may also define the trough for higher quality US growth stocks. When rates peak, and we think that may be sooner than many expect, the pressure on growth stocks is likely to abate. While timing is never clear with foresight, this could plausibly be after the Fed's first interest rate increase, particularly if it takes bold action with a 50-basis point increase.*

The Fed will of course get another chance at 50 this coming month.

The Value of Growth in a Slowing Economy

Joe Fiorica
Head – Equity Strategy

Our preferred way to play the equity market in the current environment is via defensive, quality growth. And our portfolio decisions are guided by our economic assumptions:

1. Our base case RESILIENT scenario assumes slowing economic growth but not a recession. We therefore want to find those investments that will provide sustainable, positive returns even in a decelerating growth environment.

2. Our expectation for government bond yields to peak this year is potentially supportive for those **sectors most reliant on a low discount rate to justify their valuations**. It does not, however, support firms that need to borrow to survive.

3. As an exception to our negative view on many cyclical sectors, medium term disruptions to commodity supply warrant bolstered **allocations to energy and natural resources producers.**

"When growth becomes harder to achieve, it becomes more valuable in portfolios."

We believe that in a slowing economic environment, the value of companies with dependable, visible growth increases (see figure 21). This leads us towards a clear bias towards defensives over cyclicals. History also supports a bias toward high quality growth, as mid-cycle slowdowns over the past 3 decades tended to see large cap growth stocks outperform other equity size and style factors on average (see figure 22).

Figure 21: Durable vs discretionary demand

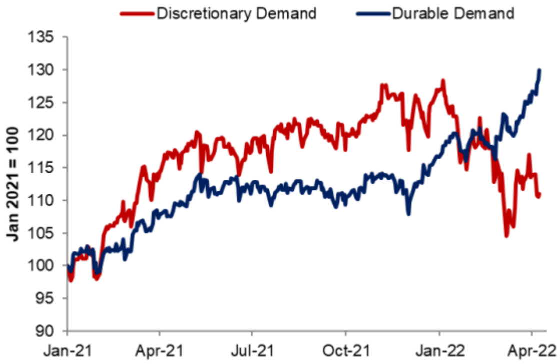


Figure 22: Equity size and style performance when growth decelerates

Average Performance during Mid-Cycle Slowdowns			
	Growth	Core	Value
Large Cap (Russell 1000)	7.6%	4.6%	1.6%
Small Cap (Russell 2000)	-4.4%	-4.8%	-5.3%

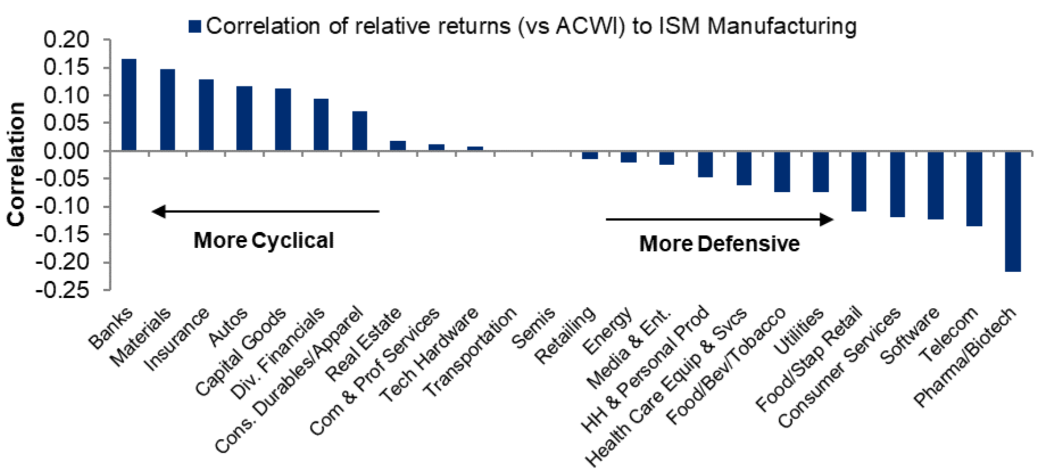
Source: Bloomberg as of April 7, 2022. Past performance is not indicative of future returns. For illustrative purposes only. Left chart: Durable demand is an equal-weighted basket of the following S&P 500 sectors: Food/Bev/Tobacco, Energy, Utilities, Health Care, Telecom; Discretionary Demand is equal-weighted basket of: Household Durables, Specialty Retail, Textiles/Apprl/Luxury Goods, Residential REITs, Hotels/Restaurants/Leisure, Financials, and Airlines. Right chart: Mid-Cycle slowdowns occurred in 1983-84, 1994-95, 1997-98, 2004-05, 2011, 2014-16, and 2018-19. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

As we wrote in our CIO Bulletin Feb. 22: *As the boom ends, and the Fed possibly over-reacts, a peak in long-term yields may also define the trough for higher quality US growth stocks. When rates peak, and we think that may be sooner than many expect, the pressure on growth stocks is likely to abate. While timing is never clear with foresight, this could plausibly be after the Fed's first interest rate increase, particularly if it takes bold action with a 50-basis point increase.*

We think this will likely happen by spring.

Some may ask, why should growth stocks, some of whom still trade at a premium to the market, outperform in a slowing economy? The answer comes down to the relationship between a company's profits with the business cycle. Whereas value sectors like banks and autos tend to skew more cyclical, growth sectors like software and health care often deliver earnings that are uncorrelated with the business cycle (see figure 23). With disposable incomes – after paying for food and energy staples - likely falling, we expect many consumers will prioritize payments for doctors' appointments (health care) and perhaps their favorite streaming services (software) before splurging for a new car or luxury bag.

Figure 23: Global industry group correlation to cyclical activity



Source: Haver as of April 7, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Furthermore, while never cheaper than their value peers, growth equities have already experienced a significant de-rating amid the "rate shock" year-to-date (see figure 24). This means that growth stocks can stage a comeback once rates have peaked (see figure 25).

Figure 24: US growth value and non-US growth valuations

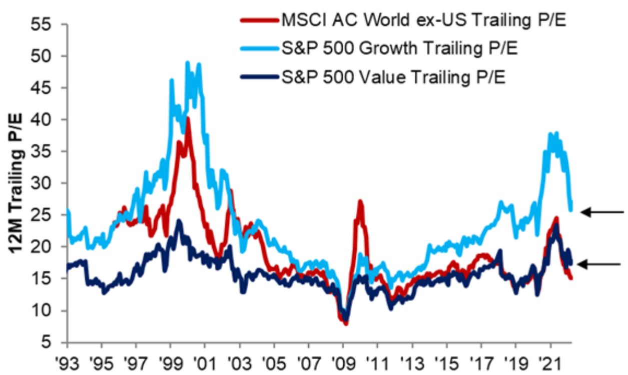
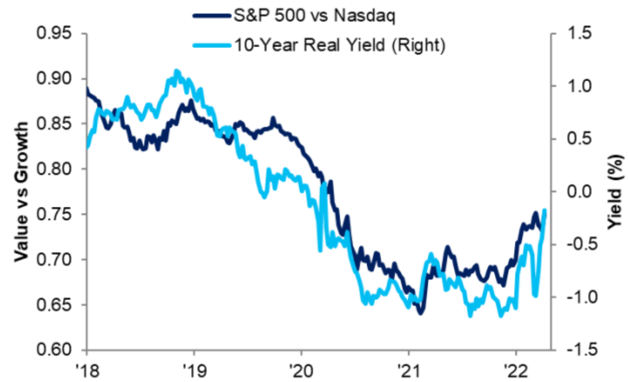


Figure 25: S&P 500 vs Nasdaq and 10-Year Real Yields



Source: Bloomberg and FactSet as of April 7, 2022. Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

But not all growth stocks are created equal. While long-term government bond yields may soon peak, excessive Fed tightening could still drive weaker growth expectations and sinks credit markets. This raises risk premiums used to value future cash flows. Therefore, while a peak in rates may be a pre-condition for a recovery in secular growth names, we still prefer a bias towards quality growth sectors and companies that should be more defensive in a jittery market environment.

Separating Quality from Speculative Growth

In the quarters following the onset of the pandemic in early 2020, money was quite easy to come by, enabling a surge in funding for exciting new concepts and business models. The sharp reduction in policy accommodation in the year ahead is likely to separate actually sustainable growth opportunities from those that could only survive in a period of maximum fiscal and monetary stimulus. We look to several indicators across sectors and within them that help us identify investments that are likely to hold up well as the Fed takes the punchbowl away.

Dividend growth and buybacks

In the pecking order of sustainable, quality growth, it is hard to beat a company with a long track record of returning and growing payouts to shareholders (see figure 26). These firms tend to be more mature with well-established business models that can generate enough free cash flow to sustain dividends and buybacks during both expansions and slowdowns.

Positive cash flow generation

Plenty of compelling growth names are relatively new to market and do not boast a long track record of dividend or buyback growth. However, in an environment of tightening monetary policy, we continue to expect secular growth names who have already achieved positive free cash flows to outperform those who have yet to reach profitability (see figure 27). As financing costs rise, firms that can “self-finance” their growth from current operations will likely hold up better than those facing rising costs to finance new projects.

Figure 26: Firms with significant buybacks or dividend growth vs broad indices

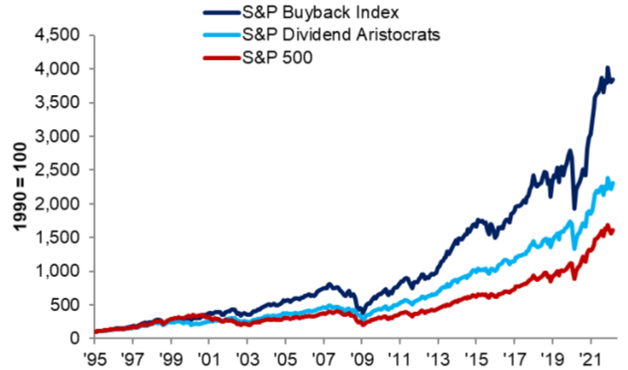
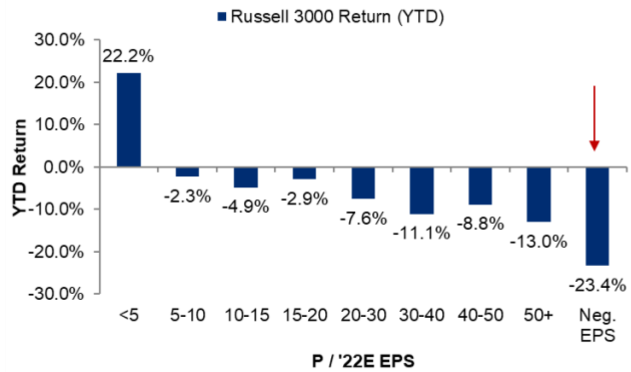


Figure 27: YTD Return by Valuation and Profitability



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The "right" business models for the current environment

Identifying quality growth is not a purely quantitative exercise. It also involves picking parts of the market where growth should be most sustainable in the context of the current macro backdrop.

Within the consumer electronics space, for example, we expect several years of strong demand for high-end chips that will power not only the next generation of cars but also the continued buildout of a highly connected digital economy (see figure 28). In the PC and "home office" tech space, however, we expect at least 2-3 years of sluggish demand as pandemic purchases likely pulled forward typical demand.

In the enterprise software and advertising space, we have spilled plenty of ink on the opportunities within cyber security. Workplace and manufacturing productivity tools are also likely to enjoy sustainable demand as rising wage costs improve the tradeoffs to substitute capital for labor.

Among B2C (business to consumer) leaders, our single stock analysts prefer stickier subscription services to ad-driven models that may struggle if slowing economic growth pinches marketing budgets.

Our strategy within fintech is to "follow the money". Traditional electronic funds transfer services are unlikely to be meaningfully disrupted anytime soon in our view. In the payments space, processors with strong ties to retail gas stations and big box grocery retailers may hold up better than those that rely on discretionary spending volume.

Outside of tech and communications, we see a renewed push for energy independence in Europe as likely to support new investment in clean energy alternatives like wind, solar and hydrogen. The breakout of war in Ukraine has seemingly broken the close relationship between clean energy shares and interest rates, with policy support and subsidies potentially a more powerful bullish catalyst than bearish rising funding costs (see figure 29).

Figure 28: Projected electronics share of total auto value

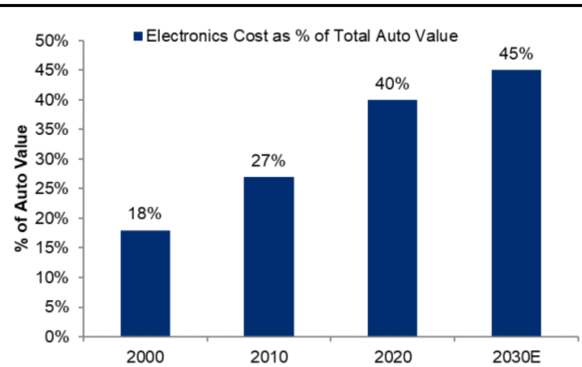
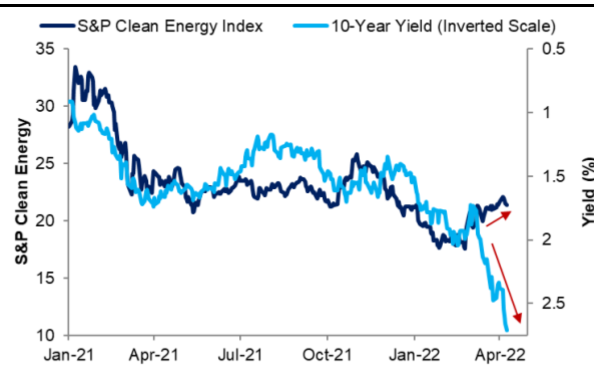


Figure 29: Clean energy shares vs US 10-Year Yield



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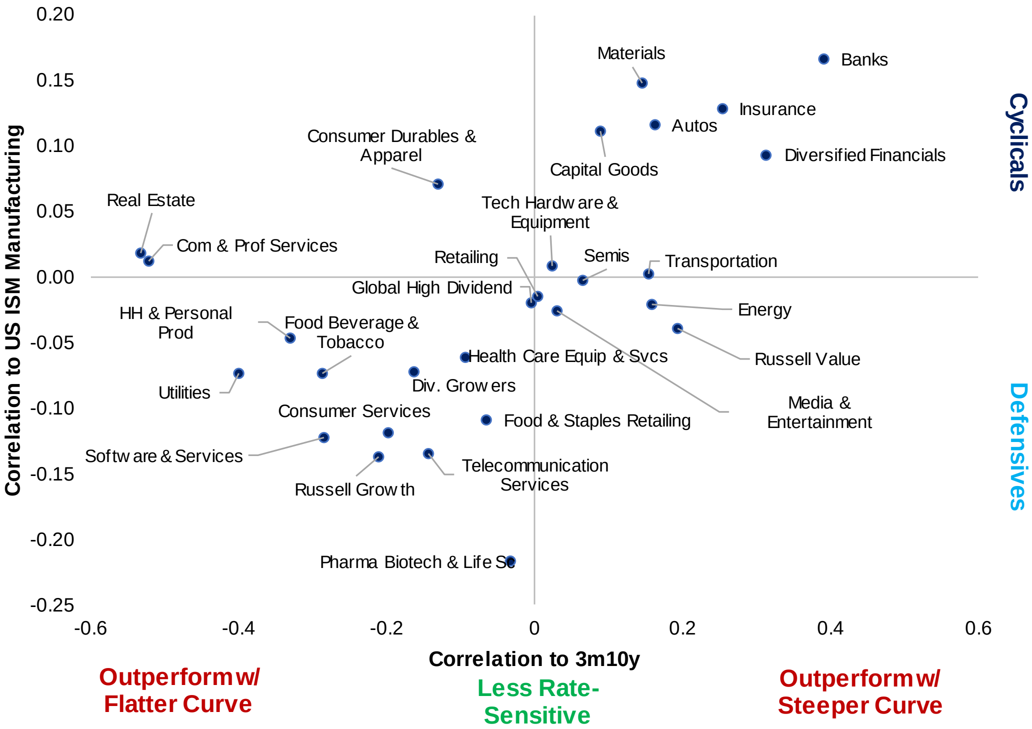
Appendix: Mapping global Industry groups by their cyclicality and sensitivity to the yield curve



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Opportunities in Municipal Bonds

Charles Reinhard
Head – North American Strategy

Bruce Harris
Head – Global Fixed Income

Joseph Kaplan

Lorraine Schmitt

Municipals have not been immune to the volatility caused by a more hawkish Fed this year and have shed -8.4% year to date (see figure 30). So far in 2022, 1-3 yr. maturities and high yield have outperformed as the increase in yields has been led by rates rather than credit.

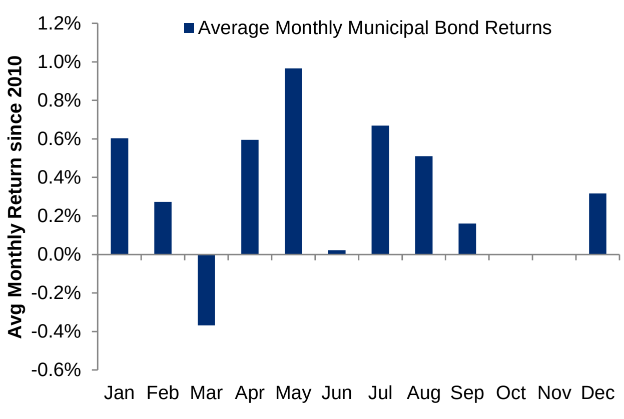
Given the volatility, investors have pulled money from municipal bond funds on top of the normal seasonal selling by some to pay their annual taxes, which traditionally makes April and May favorable times of the year for municipal bond returns (see figures 31-32).

Figure 30: Municipal bonds: returns and risk by sector, maturity, and credit rating

Sector	Yield (%)	Duration	Composite Rating	YTD Return	2021 Return	Return Since 2010	Ann. Volatility Since 2009
BAML Muni Index	3.03	5.16	AA3	-8.4%	1.8%	1.8%	52.3%
GO	2.79	4.64	AA2	-7.8%	1.1%	1.1%	44.6%
Revenue	3.11	5.34	AA3	-8.6%	2.1%	2.1%	55.2%
Airport	3.48	5.48	A1	-9.3%	3.0%	3.0%	61.4%
Education	3.00	5.63	AA2	-9.0%	1.7%	1.7%	52.6%
Hospital	3.21	5.69	A1	-9.0%	3.2%	3.2%	72.7%
Leasing & Rental	2.90	5.00	AA3	-7.6%	1.8%	1.8%	51.0%
Multi-Family	3.39	7.91	AA2	-10.7%	2.2%	2.2%	45.6%
Pollution Control	2.52	4.26	A1	-7.3%	0.5%	0.5%	49.8%
Power	2.93	4.26	A1	-7.2%	1.1%	1.1%	41.5%
Single-Family Housing	3.30	7.41	AA1	-8.6%	1.2%	1.2%	54.3%
Transportation	3.21	5.48	A2	-8.6%	3.2%	3.2%	51.7%
Water	2.86	4.59	AA2	-7.6%	0.9%	0.9%	52.9%
1-3 Y	2.33	1.71	AA3	-2.9%	0.3%	0.3%	13.4%
3-7 Y	2.65	3.63	AA3	-6.5%	0.4%	0.4%	30.1%
7-12 Y	2.90	4.98	AA3	-8.4%	1.0%	1.0%	52.1%
12-22 Y	3.19	5.47	AA3	-9.2%	2.4%	2.4%	64.9%
22+ Y	3.62	7.98	AA3	-11.8%	3.5%	3.5%	71.5%
AAA	2.80	4.99	AAA	-8.3%	0.6%	0.6%	37.8%
AA	2.91	4.98	AA2	-8.2%	1.1%	1.1%	46.1%
A	3.23	5.29	A2	-8.6%	2.6%	2.6%	62.7%
BBB	3.50	6.03	BBB2	-9.3%	5.1%	5.1%	75.9%
High Yield	3.90	5.05	BB3	-6.7%	6.5%	6.5%	108.9%

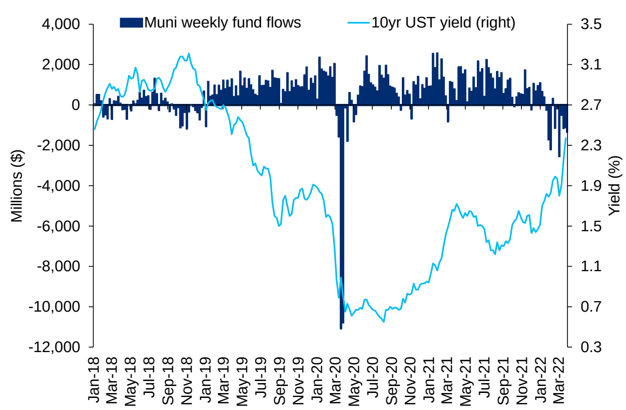
Source: FactSet as of Apr 19, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Figure 31: Municipal bond seasonality



Source: FactSet as of Mar 31, 2022. Past performance is no guarantee of future results. Real results may vary. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past

Figure 32: Municipal bond fund flows vs 10-Year Treasury yields



Source: Bloomberg as of Mar 31, 2022. Note: Tax equivalent yields adjust for top Federal and Affordable Care Act tax rate (40.8%). Past performance is no guarantee of future returns. Real results may vary

What's more, inflation and yields may be zeroing in on the upper end of their respective ranges. COVID-related income relief has run its course and the demand for goods is feeling the impact of inflation as well as a pent-up preference for services. The result has been a slowdown in freight shipment volumes which often precedes lower levels of inflation (see figure 33). Turning to bond yields, the high end of the yield range is often approached when 2-year Treasury yields rise enough to catch up to 10-year Treasury yields, leading to a flat yield curve (see figure 34).

Figure 33: Shipments lead inflation

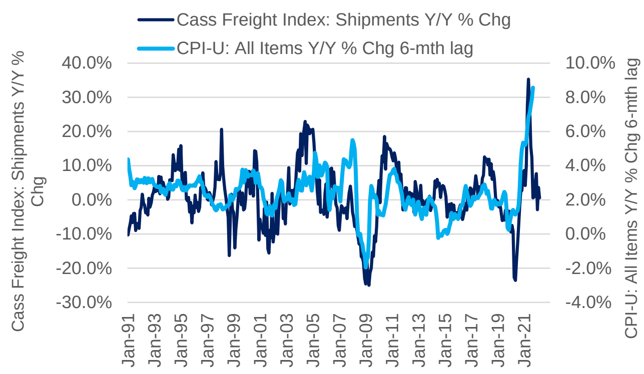
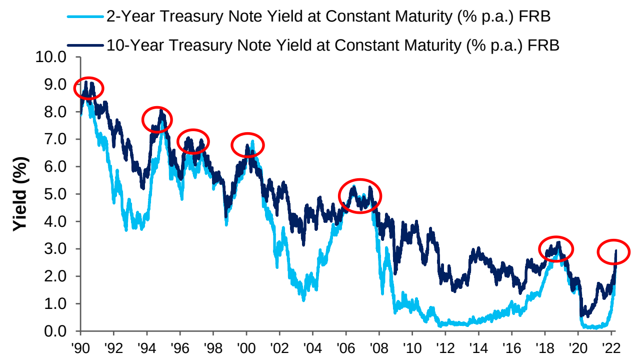


Figure 34: Treasury yields



Source: Haver Analytics and Bloomberg as of Apr 19, 2022. Past performance is no guarantee of future returns. Real results may vary. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

Municipal valuations have improved in 2022 versus other bonds, too. As an example, the generic 10-year AAA municipal bond yield has risen more than 150 bps year-to-date to 2.64% on April 19, its highest level since March 2020, and its yield ratio versus 10-year Treasuries increased to 90.0%, near the high end of the range since November 2020 (see figure 35). As such, longer maturities are joining intermediate maturities as being attractively priced, in our opinion. As a reminder, longer maturities have a higher duration – a measurement of their sensitivity to interest rates - than shorter maturities.

Now that the market is discounting several Fed interest rate hikes ahead, most measures of the yield curve are relatively flat. But because the Fed is just getting started in making these moves, the front-end of the yield curve – from cash out to 2-years - is still very steep. As a result, we currently see little value in holding excess cash or cash equivalents.

A Longer-Term Focus

Finally, after a rough start to the year, we think it is important to remind investors that the municipal bond asset class has a track record of producing positive total investment returns on a rolling 5-year basis (see figure 36) as measured by the BAML Muni index.

In our view, this is an attribute that may benefit investors with a longer-term focus.

Figure 35: AAA-Municipal 10-year Yield Ratio vs Treasuries

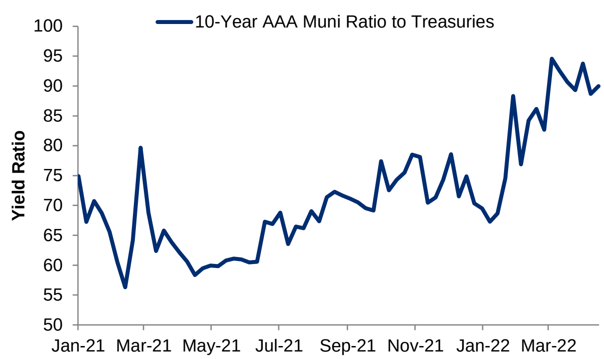
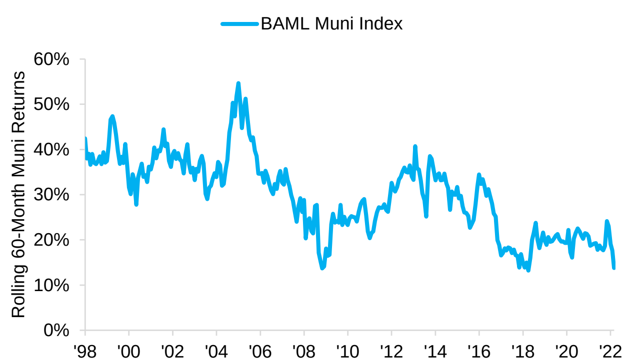


Figure 36: Rolling 60-month Muni Returns (Not Annualized)



Source: FactSet as of Apr 19, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Past performance is no guarantee of future results. Real results may vary.

Ligang Liu, Head Asia Pacific Economic Analysis

Ken Peng, Head of Asia Pacific Investment Strategy

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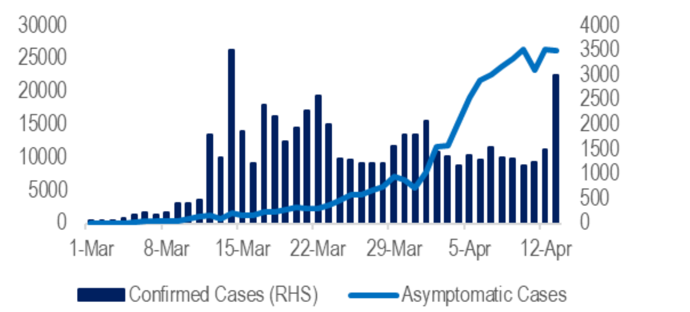
The FAILED Shanghai Lockdown

The three-week Shanghai lockdown may have slowed the spread of omicron, but China's "Zero Covid" policy is clearly failing. More smaller cities are under partial or full lockdowns. And despite these actions, nationwide cases continue to rise (see figure 37). Meanwhile, social discontent is rising, and economic costs are mounting. The only good news is that severe illness and deaths are extremely low.

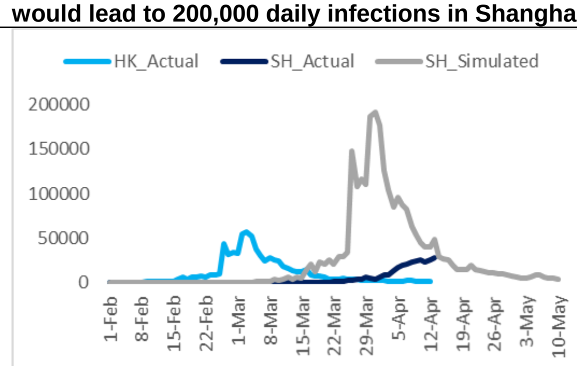
In the case of Shanghai, it is clear to everyone that the lockdowns have not stopped Covid's rise (see figure 38). Yet, had the government adopted Hong Kong's more tolerant approach to the pandemic, we believe that Shanghai would have seen 200,000 daily cases. This would have brought more scrutiny to the poor efficacy of China's vaccines.

Figure 37: National cases continue to rise regardless of the lockdowns



Source: Haver Analytics as of April 14, 2022.

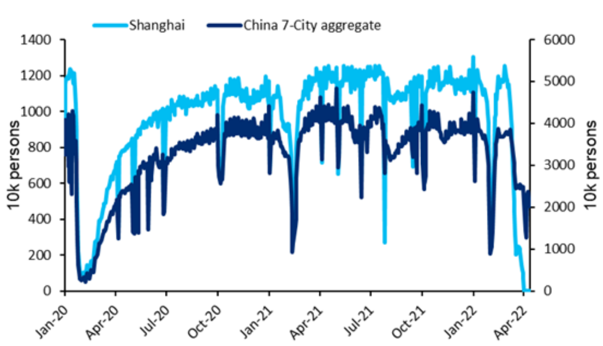
Figure 38: Adopting the HK approach to Covid would lead to 200,000 daily infections in Shanghai



Source: Haver and Office of the Chief Investment Strategist, as of April 14, 2022.

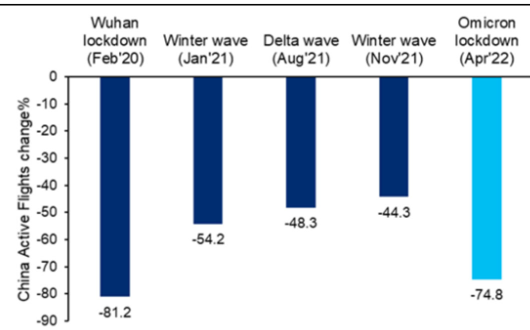
Shanghai is not only China's financial and international trade center, but also the transport and logistic center of the Yangtze River Delta. Following Shanghai's lead, other nearby provinces have set up roadblocks, enforced strict PCR testing requirements and even imposed quarantines on truckers. This race to be "more strict than Shanghai" has sharply slowed truck and air traffic in and around the Yangtze River Delta. The latest road traffic data in Shanghai and seven other major cities have dropped to levels comparable to early 2020. In April, air traffic also dropped significantly, also just shy of Wuhan lockdown levels (see figures 39-40).

Figure 39: Subway passenger volume in Shanghai and other reached a low level akin to Wuhan lockdown



Source: Haver Analytics, as of Apr 11, 2022. Note: 7 cities include Beijing, Chengdu, Guangzhou, Shanghai, Nanjing, Suzhou and Zhengzhou.

Figure 40: China's air traffic in April dropped to the level reached at the Wuhan lockdown in Feb '20



Source: Airportia, as of Apr 11, 2022

Covid's economic costs rise as growth decelates

China's "Covid Zero" strategy remains a national policy mandate and local officials have no qualms implementing full and partial lockdowns. We estimate that 374 million Chinese and areas producing over 40% of China's GDP are presently affected (see Appendix 2).

Meanwhile, China's growth has been slowing for some time. In March, China's Purchasing Managers Index (PMI) fell into contraction territory at 49.5, down from 50.2 in February. However, some sectors were hit harder than others. For example, the PMIs of auto and auto parts, computer and electronic equipment, oil refinery, and air transport were **as bad as those reached during the Wuhan-Hubei lockdown in Q1 2020**. (see **figures 41 and 42**).

Figure 41: The PMI and new order subindex of the Auto and Auto-parts sector

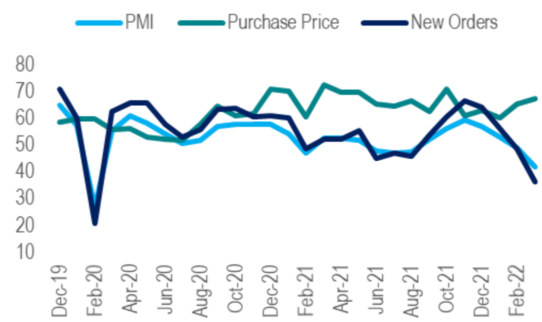
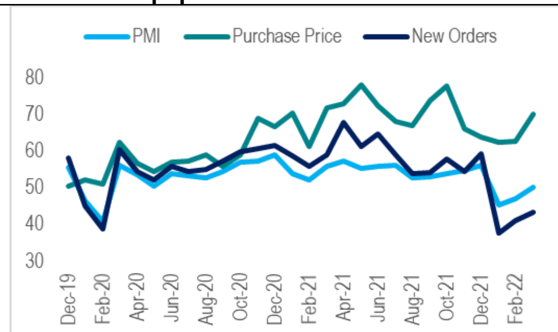


Figure 42: New orders of computer and electronic equipment lower than Feb 2020



Source: Haver Analytics as of April 14, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only. Past performance is no guarantee of future returns. Real results may vary.

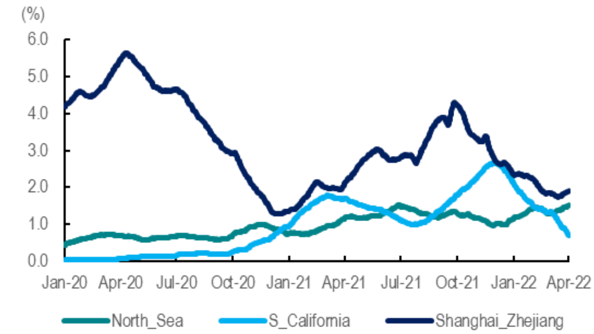
Global supply chain impacts

Shanghai is one of the busiest container ports in the world, responsible for 7% of Chinese exports and 3% of its imports. While there are anecdotal reports that the manufacturing supply chains have been affected, the rise in the number of container ships waiting in Shanghai-Zhejiang ports has been modest through mid-April (see figure 43). Freight rates for ships departing from Chinese ports continue their downward trend (see figure 44).

For the moment, global supply chains appear to be modestly impacted. We think this will worsen. While Asia as a whole has experienced and treated COVID in a heterogenous way, mainland China is not alone in experiencing a Covid resurgence. As figure 45 shows, Taiwan has also seen a sudden rise in new cases.

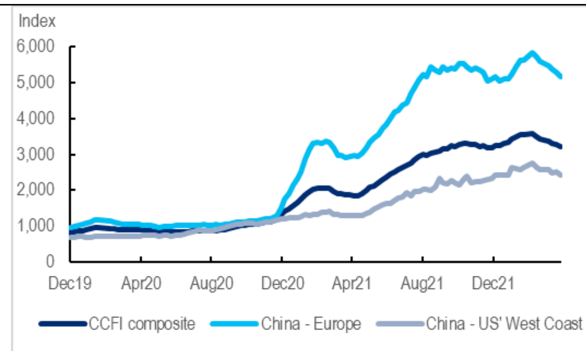
The speed at which COVID has surged and retreated across many geographies suggests that its impacts are temporary and will not define a full year's economic results. Even in China, COVID has forced policymakers and producers to adapt and to avoid output indiscriminately. However, the newly impacted zones of COVID in Asia are interfering with advanced components production, such as semiconductors (see **figure 46**). Therefore, the near-term outlook for COVID in Greater China will worsen the lingering supply/demand imbalances of 2021. And this will intersect with the commodity supply disruptions related to the war in the Ukraine.

Figure 43: Global freight capacity "waiting" in Shanghai



Source: Kiel Trade Indicator and Citi Research as of April 14, 2022.

Figure 44: Freight rate of routes departing from China continues to fall



Source: Shipping Intelligence Network and Citi Research as of April 14, 2022.

Figure 45: Taiwan: New COVID Infections

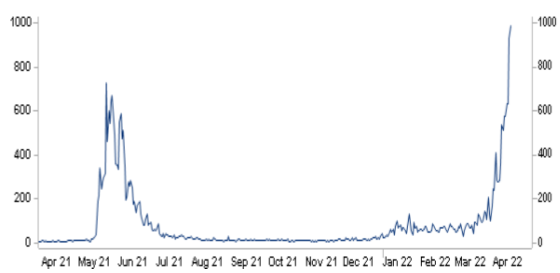
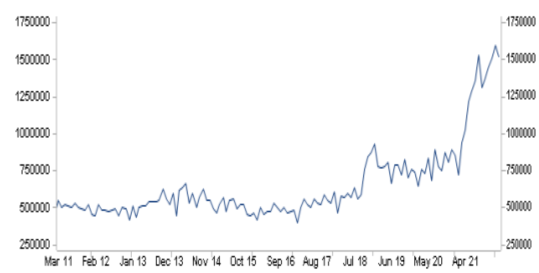


Figure 46: US Imports of Semiconductors from Taiwan (Millions of USD)



Source: Haver Analytics as of April 14, 2022.

The looming risk of a Q2 recession in China

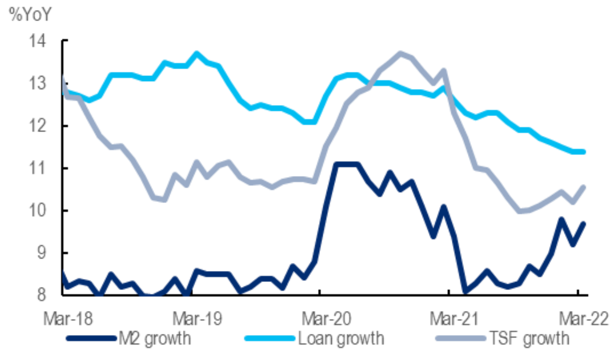
Assuming a continued Covid Zero Strategy (CZS), China's Q2 economic activity could be materially impacted by both manufacturing shortfalls and transport slowdowns. We expect April monthly economic activity indicators will show even sharper declines in May. Thus, it is now possible that China could experience a Q2 GDP contraction. Widespread lockdowns have led to temporary production shutdowns in industrial hubs across many provinces. Alarms are rising as the State Council is concerned that local governments are slowing truck transport across the country. It has ordered local governments not to set up any unauthorized checkpoints within the national highway system. Yet, local governments routinely ignore national orders in the name of Covid-19 containment.

Policy responses are stepping up

Fears of a Q2 recession would make China's 5.5% growth target for 2022 unachievable. Thus, we expect stronger policy easing ahead. Additional fiscal stimulus focusing on maintaining household income and boosting consumption is likely. Local governments are taking actions. After one week of lockdowns, the Shenzhen government has issued 30 policies, ranging from fees and tax reductions to increasing various fiscal subsidies for firms to compensate their losses and boost business confidence. Shanghai has similarly issued its policies to address the difficulties experienced by local businesses.

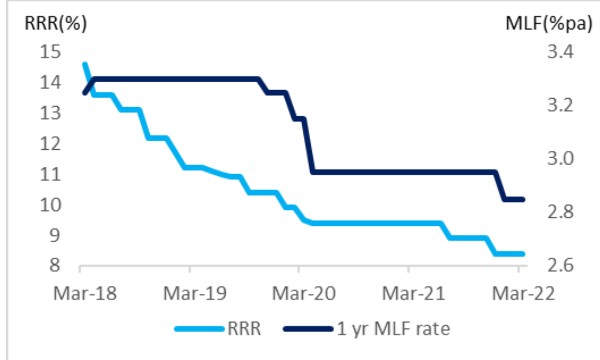
At the Wednesday State Council Executive Committee meeting, Premier Li announced new fiscal measures to support the national economy. New policies to support the service sectors hit by the lockdowns and policies to support auto and other durable goods consumption were announced. Meanwhile, monetary policies may become far more accommodative. While the PBoC has repeatedly signaled that it will not copy the US and flood the market with liquidity, the March credit data points to a large credit easing indicated by rapidly rebounding aggregated financial and M2 growth (see figure 47). The State Council has already cut required reserve ratios again (see figure 48).

Figure 47: New loans growth approaches stabilization; M2 and TSF growth rebounded strongly



Source: Haver Analytics, as of Apr 11, 2022.

Figure 48: There is still room for RRR and MLF policy rate cut in China



Source: Haver Analytics as of April 14, 2022.

Chinese equities are likely beneficiaries of policy response

Historically, the performance of Chinese equities has a strong positive correlation with the country's monetary policies rather than its immediate economic performance. Following the outbreak of Covid-19 in 2020, the loose monetary policy, together with strict social distancing measure, helped the equity markets rebound quickly from the pandemic. Although policy makers have refrained from deploying any massive stimulus in 2021, China's financial policy has shifted to prop up growth in 2022. There is often a lag of a few months between the launch of significant stimulus and a rally in equities. However, external shocks including the Ukraine war rising delisting risks for ADRs and the possibility of sanctions against China may delay or mitigate the typical response in Chinese equities.

The valuation of Chinese equity markets has become far more attractive after the recent correction. MSCI China is now only valued at 53% of the S&P 500, an historic low (see figure 49). In addition, according to a collection of five valuation metrics, Chinese equities are now at levels close to those in late 2018 (see figure 50).

Figure 49: MSCI China is valued at 53% of S&P500, an historic low

Figure 50: A collection of five valuation metrics are 1.6 standard deviations below average of the past 12 months, similar to levels seen in late 2018

Source: Bloomberg, as of 1 April 2022 Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Index returns do not include any expenses, fees or sales charges, which would lower performance. For illustrative purposes only. Past performance is no guarantee of future results. Real results may vary.

Over time, the Covid Zero policies may be relaxed. For example, some districts in Shanghai won't require infected persons to be quarantined in temporary make-ship hospitals, recognizing vast majority of omicron cases in Shanghai only show mild symptoms. Together with China's high tech contact tracing capacity and effective social organization, the policy fine-tuning of CZS may allow China to refocus on its economic objectives.

In summary, given the expected additional fiscal policy stimulus and further monetary policy easing, Chinese asset prices will likely see support. We maintain our view that long-term investors should remain in China's equity market.

Appendix Figure : Cities under lockdown or partial lockdown, affected population and GDP size

Province/Municipality	City	Risk Level	Type of lockdown	Population Affected (mn)	GDP (RMB bn)	Share of National GDP
Shanghai	Shanghai	Medium	Full lockdown	24.9	4321.5	3.78%
Jilin	Changchun	High	Full lockdown	9.1	710.3	0.62%
	Jilin	High	Full lockdown	3.6	155.0	0.14%
Jiangsu	Nantong	Low	Full lockdown	7.7	1102.7	0.96%
	Xuzhou	Medium	Partial lockdown	9.1	811.7	0.71%
	Suqian	Medium	Partial lockdown	5.0	371.9	0.33%
	Suzhou	Low	Partial lockdown	12.7	2271.8	1.99%
	Wuxi	Low	Partial lockdown	7.5	1400.3	1.22%
	Nanjing	Low	District-based lockdown	9.3	1635.5	1.43%
	Taizhou	Low	District-based lockdown	4.5	602.5	0.53%
	Changzhou	Low	District-based lockdown	5.3	880.8	0.77%
	Zhenjiang	Low	District-based lockdown	3.2	476.3	0.42%
Zhejiang	Jiaxing	Low	Partial lockdown	5.4	635.5	0.56%
	Ningbo	Low	Partial lockdown	9.4	1459.5	1.28%
	Hangzhou	Low	District-based lockdown	11.9	1810.9	1.58%
Beijing	Beijing	High	District-based lockdown	21.9	4027.0	3.52%
Tianjin	Tianjin	High	District-based lockdown	13.9	1569.5	1.37%
Fujian	Fuzhou	Low	District-based lockdown	8.3	1132.4	0.99%
	Quanzhou	High	District-based lockdown	8.8	1130.4	0.99%
	Putian	Medium	District-based lockdown	2.8	288.3	0.25%
Shandong	Weihai	Medium	District-based lockdown	2.9	346.4	0.30%
	Binzhou	High	District-based lockdown	3.9	287.2	0.25%
Liaoning	Shenyang	High	Partial lockdown	9.0	725.0	0.63%
	Yingkou	High	District-based lockdown	2.3	140.3	0.12%
	Dalian	Medium	District-based lockdown	7.5	782.6	0.68%
Hebei	Tangshan	High	Full lockdown	7.7	823.1	0.72%
	Langfang	High	Partial lockdown	5.5	355.3	0.31%
	Xingtai	Low	Partial lockdown	7.1	242.7	0.21%
	Handan	Low	Partial lockdown	9.4	411.5	0.36%
Guangdong	Guangzhou	Medium	District-based lockdown	18.7	2823.2	2.47%
	Shenzhen	Low	District-based lockdown	17.6	3066.5	2.68%
	Dongguan	Medium	District-based lockdown	10.5	1085.5	0.95%
	Foshan	Low	District-based lockdown	9.5	1215.7	1.06%
Anhui	Hefei	Low	District-based lockdown	9.4	1141.3	1.00%
	Fuyang	Medium	District-based lockdown	8.2	307.2	0.27%
	Lu'an	Medium	District-based lockdown	4.4	192.4	0.17%
	Wuhu	Medium	District-based lockdown	3.6	430.3	0.38%
Heilongjiang	Jiamusi	High	District-based lockdown	2.2	81.6	0.07%
	Harbin	Medium	District-based lockdown	10.0	535.2	0.47%
	Mudanjiang	Medium	District-based lockdown	2.3	87.5	0.08%
Gansu	Lanzhou	Medium	District-based lockdown	4.4	323.1	0.28%
Inner Mongolia	Chifeng	Medium	District-based lockdown	4.0	197.5	0.17%
Hubei	Wuhan	Low	District-based lockdown	12.3	1771.7	1.55%
Hunan	Changsha	Medium	District-based lockdown	10.0	1327.1	1.16%
Jiangxi	Nanchang	Medium	District-based lockdown	6.3	665.1	0.58%
Summary Statistics				**373.0**	**46158.8**	**40.35%**

Source: Various Chinese Media reports and CPB Strategy Research

As of April 14, 2022.

Portfolio allocations

This section shows the strategic and tactical asset allocations. The Quant Research & Global Asset Allocation (QRGAA) team creates strategic asset allocations (SAAs) using the CPB Adaptive Valuations Strategy (AVS) methodology on an annual basis. Global Investment Committee (GIC) provides underweight and overweight decisions to AVS's Global USD without Hedge Funds Risk Level 1 through Level 5 portfolios. QRGAA then creates tactical allocations for all other profiles or subprofiles such as Global USD with Hedge Funds and Illiquids PE & RE Level 2 through Level 5 portfolios. These sample portfolios included below reflect 2022 SAAs and the tactical over/under weights expressed at the April 20, 2022 GIC meeting.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 2

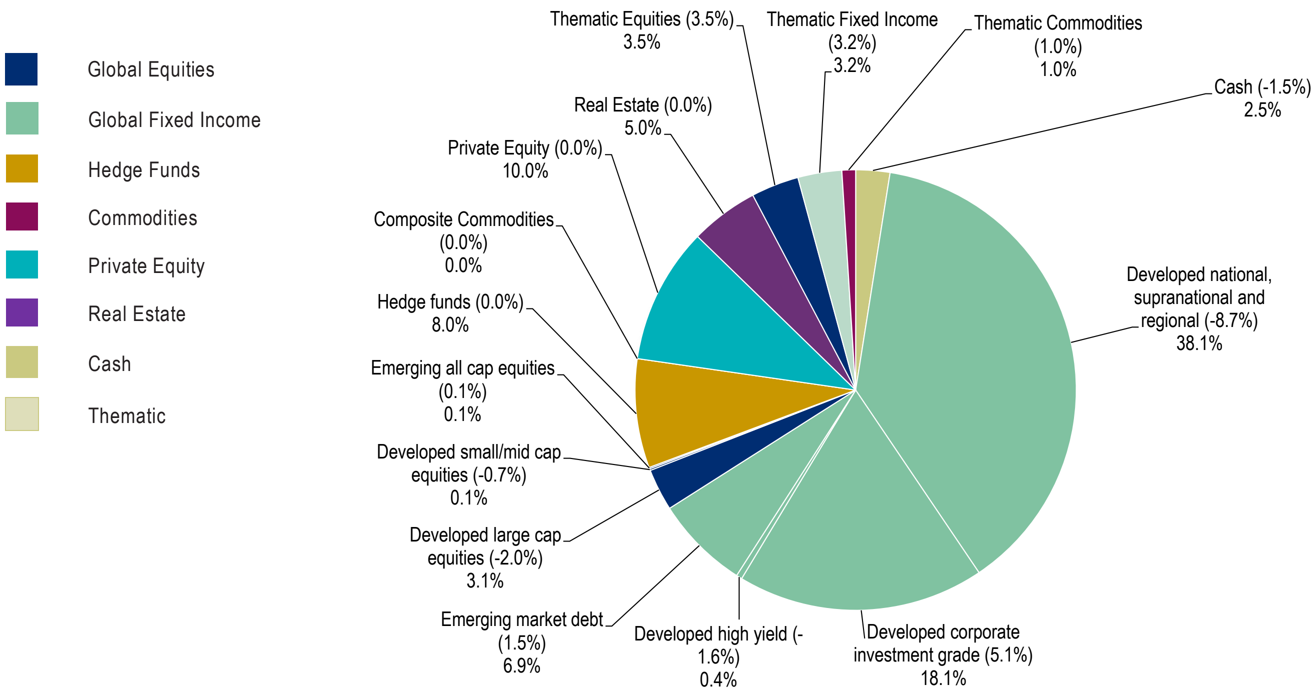
Risk Level 2 is designed for investors who emphasize capital preservation over return on investment, but who are willing to subject some portion of their principal to increased risk in order to generate a potentially greater rate of return on investment.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**4.0**	**2.5**	**-1.5**
Fixed Income	**67.1**	**66.7**	**-0.5**
Developed Investment Grade	**59.8**	**56.1**	**-3.6**
US	34.2	41.4	7.2
Government	14.8	15.7	0.9
Inflation-Linked	2.1	2.3	0.2
Short	3.9	2.4	-1.6
Intermediate	6.1	6.3	0.2
Long	2.6	4.7	2.1
Securitized	10.9	12.0	1.2
Credit	8.6	13.7	5.1
Short	1.2	1.4	0.2
Intermediate	4.5	9.4	4.9
Long	2.9	2.9	0.0
Europe	19.5	12.3	-7.3
Government	15.2	7.9	-7.3
Credit	4.4	4.4	0.0
Australia	0.4	0.4	0.0
Government	0.4	0.4	0.0
Japan	5.6	2.1	-3.5
Government	5.6	2.1	-3.5
Developed High Yield	**2.0**	**0.4**	**-1.6**
US	1.5	0.0	-1.5
Europe	0.5	0.4	-0.1
Emerging Market Debt	**5.4**	**6.9**	**1.5**
Asia	0.9	2.0	1.1
Local currency	0.5	1.0	0.6
Foreign currency	0.5	1.0	0.5
EMEA	2.8	2.8	-0.0
Local currency	1.4	1.4	-0.0
Foreign currency	1.4	1.4	-0.0
LatAm	1.7	2.1	0.4
Local currency	0.8	0.8	-0.0
Foreign currency	0.8	1.3	0.4
Thematic Fixed Income	**0.0**	**3.2**	**3.2**
US Bank Loans	0.0	3.2	3.2
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**5.9**	**6.8**	**1.0**
Developed Equities	**5.9**	**3.2**	**-2.7**
Developed Large Cap Equities	**5.1**	**3.1**	**-2.0**
US	3.5	2.2	-1.3
Canada	0.2	0.1	-0.1
UK	0.2	0.2	-0.1
Switzerland	0.1	0.1	-0.1
Europe ex UK ex Switzerland	0.5	0.2	-0.3
Asia ex Japan	0.2	0.1	-0.1
Japan	0.3	0.2	-0.2
Developed Small/ Mid Cap Equities	**0.8**	**0.1**	**-0.7**
US	0.4	0.1	-0.3
Non-US	0.4	0.0	-0.3
Emerging All Cap Equities	**0.0**	**0.1**	**0.1**
Asia	0.0	0.1	0.1
China	0.0	0.0	0.0
Asia (ex China)	0.0	0.0	0.0
EMEA	0.0	0.0	0.0
LatAm	0.0	0.0	0.0
Brazil	0.0	0.0	0.0
LatAm ex Brazil	0.0	0.0	0.0
Thematic Equities	**0.0**	**3.5**	**3.5**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	1.5	1.5
Cyber Security	0.0	0.0	0.0
Fintech	0.0	0.0	0.0
Natural Resources	0.0	1.0	1.0
Oil Services	0.0	1.0	1.0
Commodities	**0.0**	**1.0**	**1.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**1.0**	**1.0**
Gold	0.0	1.0	1.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Hedge Funds	**8.0**	**8.0**	**0.0**
Private Equity	**10.0**	**10.0**	**0.0**
Real Estate	**5.0**	**5.0**	**0.0**
Total	**100.0**	**100.0**	**-0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 2 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an overweight position of +1.0%, global fixed income has an underweight of -0.5%, cash has an underweight of -1.5% with gold overweight at +1.0%.

Within equities, developed large cap equities are at an underweight position of -2.0% and small/mid cap equities are at an underweight position of -0.7%. Emerging market equities have a slight overweight of +0.1%. Thematic equities have an overweight of +3.5%.

Within fixed income, developed investment grade has an underweight position of -3.6%; developed high yield has an underweight position of -1.6% and emerging market debt has an overweight position of +1.5%. Thematic fixed income has an overweight of +3.2%.

Hedge Fund allocation in the tactial portfolio is 8%. Private Equity and Real Estate allocations are 10% and 5%, respectively. All these three asset classes positionings are neutral.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 3

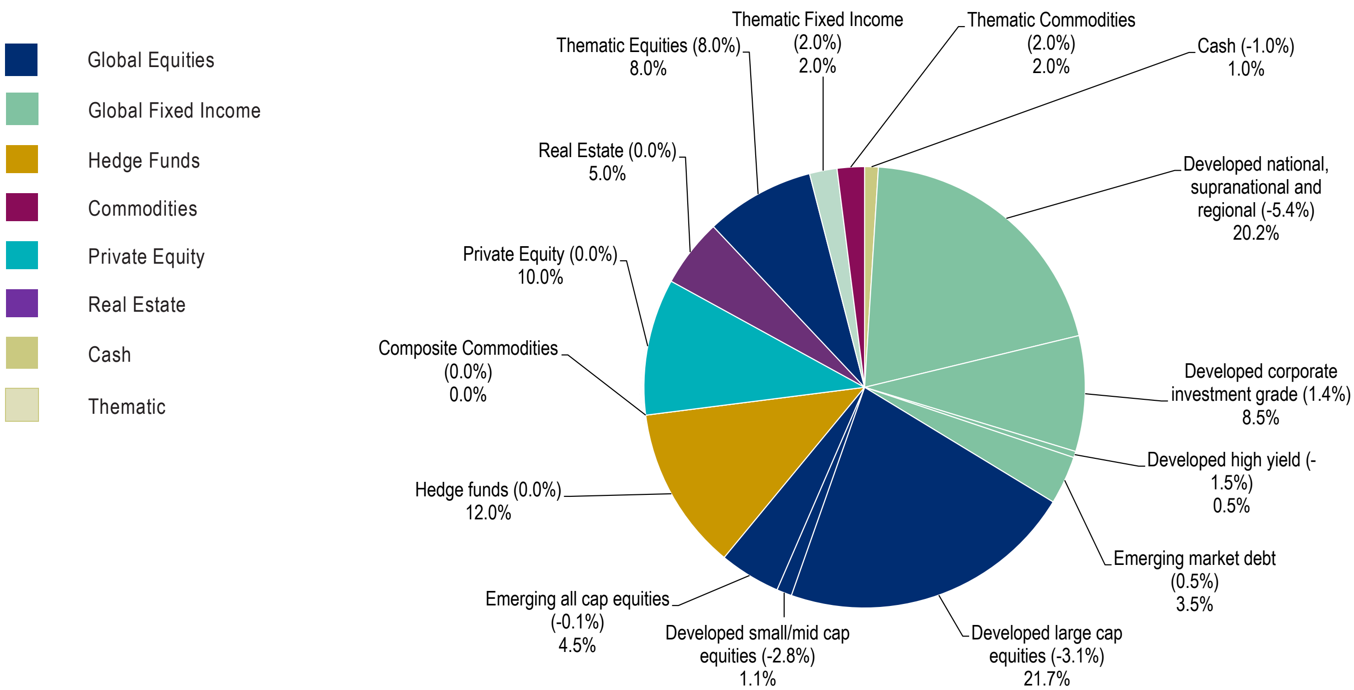
Risk Level 3 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. Risk Level 3 may be appropriate for investors willing to subject their portfolio to additional risk for potential growth in addition to a level of income reflective of his/her stated risk tolerance.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**2.0**	**1.0**	**-1.0**
Fixed Income	**37.7**	**34.7**	**-3.0**
Developed Investment Grade	**32.7**	**28.7**	**-4.0**
US	18.7	24.6	5.9
Government	8.1	12.7	4.6
Inflation-Linked	1.1	2.2	1.0
Short	2.2	0.2	-1.9
Intermediate	3.3	6.8	3.5
Long	1.4	3.5	2.1
Securitized	5.9	5.7	-0.3
Credit	4.7	6.3	1.6
Short	0.6	0.7	0.0
Intermediate	2.5	4.0	1.5
Long	1.6	1.6	0.0
Europe	10.7	3.9	-6.8
Government	8.3	1.7	-6.6
Credit	2.4	2.2	-0.2
Australia	0.2	0.2	0.0
Government	0.2	0.2	0.0
Japan	3.1	0.0	-3.1
Government	3.1	0.0	-3.1
Developed High Yield	**2.0**	**0.5**	**-1.5**
US	1.5	0.0	-1.5
Europe	0.5	0.5	-0.1
Emerging Market Debt	3.0	3.5	0.5
Asia	0.5	1.0	0.5
Local currency	0.3	0.6	0.3
Foreign currency	0.3	0.5	0.2
EMEA	1.6	1.6	0.0
Local currency	0.8	0.8	0.0
Foreign currency	0.8	0.8	0.0
LatAm	0.9	0.9	0.0
Local currency	0.5	0.5	0.0
Foreign currency	0.5	0.5	0.0
Thematic Fixed Income	**0.0**	**2.0**	**2.0**
US Bank Loans	0.0	2.0	2.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**33.3**	**35.3**	**2.0**
Developed Equities	**28.7**	**22.8**	**-5.9**
Developed Large Cap Equities	**24.7**	**21.7**	**-3.1**
US	17.2	15.9	-1.3
Canada	0.9	0.8	-0.1
UK	1.0	0.9	-0.1
Switzerland	0.7	0.6	-0.1
Europe ex UK ex Switzerland	2.4	1.7	-0.7
Asia ex Japan	0.9	0.8	-0.1
Japan	1.7	1.0	-0.6
Developed Small/ Mid Cap Equities	**3.9**	**1.1**	**-2.8**
US	2.2	0.8	-1.4
Non-US	1.7	0.3	-1.4
Emerging All Cap Equities	**4.6**	**4.5**	**-0.1**
Asia	3.8	4.0	0.1
China	1.5	1.9	0.4
Asia (ex China)	2.3	2.1	-0.2
EMEA	0.4	0.2	-0.2
LatAm	0.3	0.3	-0.0
Brazil	0.2	0.2	-0.0
LatAm ex Brazil	0.1	0.1	-0.0
Thematic Equities	**0.0**	**8.0**	**8.0**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	2.0	2.0
Cyber Security	0.0	1.0	1.0
Fintech	0.0	1.0	1.0
Natural Resources	0.0	2.0	2.0
Oil Services	0.0	2.0	2.0
Commodities	**0.0**	**2.0**	**2.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**2.0**	**2.0**
Gold	0.0	2.0	2.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Hedge Funds	**12.0**	**12.0**	**0.0**
Private Equity	**10.0**	**10.0**	**0.0**
Real Estate	**5.0**	**5.0**	**0.0**
Total	**100.0**	**100.0**	**-0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 3 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an overweight position of +2.0%, global fixed income has an underweight of -3.0%, cash has an underweight of -1.0% with gold overweight at +2.0%.

Within equities, developed large cap equities have an underweight position of -3.1% and developed small/mid cap equities have an underweight position of -2.8%. Emerging market equities have an underweight position of -0.1%. Thematic equities have an overweight position of +8.0%.

Within fixed income, developed investment grade debt has an underweight position of -4.0%; developed high yield has an underweight position of -1.5%; emerging market debt has an overweight position of +0.5%. Thematic fixed income has an overweight position of +2.0%.

Hedge Fund allocation in the tactial portfolio is 12%. Private Equity and Real Estate allocations are 10% and 5%, respectively. All these three asset classes positionings are neutral.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 4

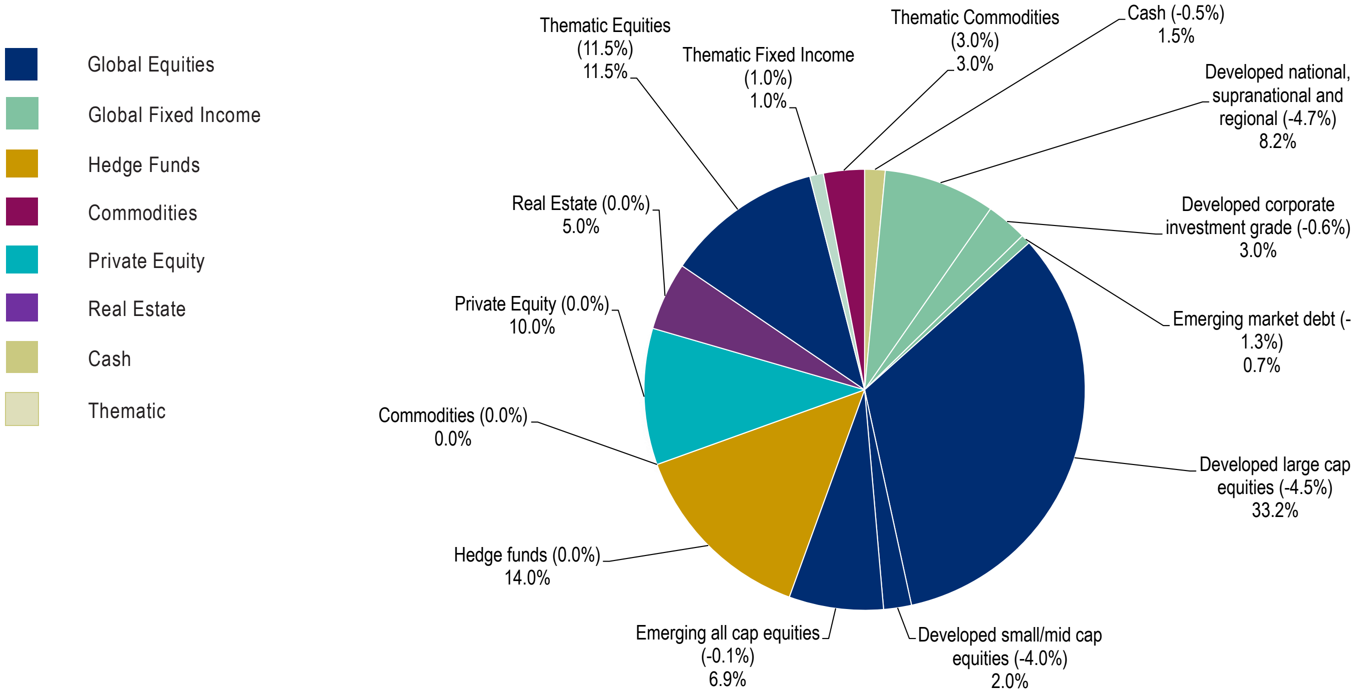
Risk Level 4 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. They are willing to subject a large portion of their portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investment. Investors may have a preference for investments or trading strategies that may assume higher-than-normal market risks and/or potentially less liquidity with the goal (but not guarantee) of commensurate gains.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**2.0**	**1.5**	**-0.5**
Fixed Income	**18.4**	**12.9**	**-5.5**
Developed Investment Grade	**16.4**	**11.2**	**-5.2**
US	9.4	10.8	1.4
Government	4.0	7.6	3.6
Inflation-Linked	0.6	0.5	-0.0
Short	1.1	0.1	-1.0
Intermediate	1.7	4.3	2.6
Long	0.7	2.7	2.0
Securitized	3.0	0.4	-2.6
Credit	2.4	2.8	0.4
Short	0.3	0.0	-0.3
Intermediate	1.2	2.5	1.2
Long	0.8	0.3	-0.5
Europe	5.4	0.4	-5.0
Government	4.2	0.2	-4.0
Credit	1.2	0.2	-1.0
Australia	0.1	0.0	-0.1
Government	0.1	0.0	-0.1
Japan	1.5	0.0	-1.5
Government	1.5	0.0	-1.5
Developed High Yield	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Europe	0.0	0.0	0.0
Emerging Market Debt	**2.0**	**0.7**	**-1.3**
Asia	0.3	0.4	0.1
Local currency	0.2	0.2	0.1
Foreign currency	0.2	0.2	0.0
EMEA	1.0	0.0	-1.0
Local currency	0.5	0.0	-0.5
Foreign currency	0.5	0.0	-0.5
LatAm	0.6	0.3	-0.3
Local currency	0.3	0.0	-0.3
Foreign currency	0.3	0.3	-0.1
Thematic Fixed Income	**0.0**	**1.0**	**1.0**
US Bank Loans	0.0	1.0	1.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**50.7**	**53.7**	**3.0**
Developed Equities	**43.7**	**35.2**	**-8.4**
Developed Large Cap Equities	**37.7**	**33.2**	**-4.5**
US	26.2	25.1	-1.1
Canada	1.3	1.2	-0.1
UK	1.6	1.3	-0.3
Switzerland	1.0	0.6	-0.4
Europe ex UK ex Switzerland	3.6	2.2	-1.4
Asia ex Japan	1.3	1.2	-0.1
Japan	2.6	1.5	-1.0
Developed Small/ Mid Cap Equities	**6.0**	**2.0**	**-4.0**
US	3.4	1.5	-1.9
Non-US	2.7	0.5	-2.1
Emerging All Cap Equities	**7.0**	**6.9**	**-0.1**
Asia	5.8	6.2	0.3
China	2.3	3.0	0.6
Asia (ex China)	3.5	3.2	-0.3
EMEA	0.6	0.3	-0.4
LatAm	0.5	0.5	-0.0
Brazil	0.3	0.3	-0.0
LatAm ex Brazil	0.2	0.2	-0.0
Thematic Equities	**0.0**	**11.5**	**11.5**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	2.8	2.8
Cyber Security	0.0	1.4	1.4
Fintech	0.0	1.4	1.4
Natural Resources	0.0	3.0	3.0
Oil Services	0.0	3.0	3.0
Commodities	**0.0**	**3.0**	**3.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**3.0**	**3.0**
Gold	0.0	3.0	3.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Hedge Funds	**14.0**	**14.0**	**0.0**
Private Equity	**10.0**	**10.0**	**0.0**
Real Estate	**5.0**	**5.0**	**0.0**
Total	**100.0**	**100.0**	**-0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 4 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an overweight position of +3.0%, global fixed income has an underweight of -5.5%, cash has an underweight of -0.5% with gold overweight at +3.0%.

Within equities, developed large cap equities have an underweight position of -4.5% and developed small/mid cap equities have an underweight position of -4.0%. Emerging market equities have an underweight of -0.1%. Thematic equities have an overweight of +11.5%.

Within fixed income, developed investment grade has an underweight position of -5.2%; developed high yield has a neutral position and emerging market debt has an underweight position of -1.3%. Thematic fixed income has an overweight of +1.0%.

Hedge Fund allocation in the tactial portfolio is 14%. Private Equity and Real Estate allocations are 10% and 5%, respectively. All these three asset classes positionings are neutral.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 5

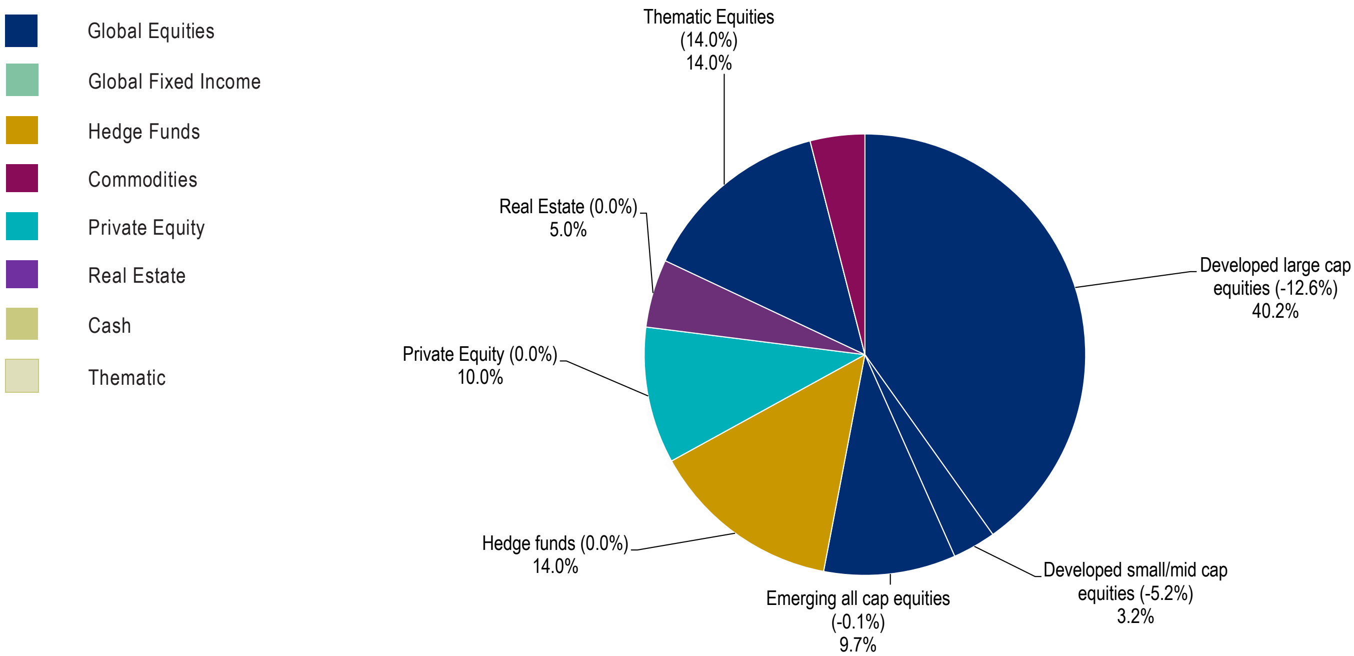
Risk Level 5 is designed for investors who emphasize return on investment. They are willing to subject their entire portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investments. Investors may have a preference for investments or trading strategies that may assume higher than-normal market risks and/or potentially less liquidity with the goal (but not guarantee) of commensurate gains. Clients may engage in tactical or opportunistic trading, which may involve higher volatility and variability of returns.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**0.0**	**0.0**	**0.0**
Fixed income	**0.0**	**0.0**	**0.0**
Developed Investment Grade	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Government	0.0	0.0	0.0
Inflation-Linked	0.0	0.0	0.0
Short	0.0	0.0	0.0
Intermediate	0.0	0.0	0.0
Long	0.0	0.0	0.0
Securitized	0.0	0.0	0.0
Credit	0.0	0.0	0.0
Short	0.0	0.0	0.0
Intermediate	0.0	0.0	0.0
Long	0.0	0.0	0.0
Europe	0.0	0.0	0.0
Government	0.0	0.0	0.0
Credit	0.0	0.0	0.0
Australia	0.0	0.0	0.0
Government	0.0	0.0	0.0
Japan	0.0	0.0	0.0
Government	0.0	0.0	0.0
Developed High Yield	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Europe	0.0	0.0	0.0
Emerging Market Debt	**0.0**	**0.0**	**0.0**
Asia	0.0	0.0	0.0
Local currency	0.0	0.0	0.0
Foreign currency	0.0	0.0	0.0
EMEA	0.0	0.0	0.0
Local currency	0.0	0.0	0.0
Foreign currency	0.0	0.0	0.0
LatAm	0.0	0.0	0.0
Local currency	0.0	0.0	0.0
Foreign currency	0.0	0.0	0.0
Thematic Fixed Income	**0.0**	**0.0**	**0.0**
US Bank Loans	0.0	0.0	0.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**71.0**	**67.0**	**-4.0**
Developed Equities	**61.2**	**43.3**	**-17.9**
Developed Large Cap Equities	**52.8**	**40.2**	**-12.6**
US	36.7	33.1	-3.6
Canada	1.8	0.7	-1.1
UK	2.2	0.8	-1.4
Switzerland	1.5	0.3	-1.2
Europe ex UK ex Switzerland	5.1	2.2	-2.9
Asia ex Japan	1.9	1.4	-0.4
Japan	3.6	1.6	-1.9
Developed Small/ Mid Cap Equities	**8.4**	**3.2**	**-5.2**
US	4.7	2.3	-2.4
Non-US	3.7	0.8	-2.9
Emerging All Cap Equities	**9.8**	**9.7**	**-0.1**
Asia	8.2	8.5	0.3
China	3.3	3.9	0.7
Asia (ex China)	4.9	4.6	-0.3
EMEA	0.9	0.5	-0.4
LatAm	0.7	0.6	-0.1
Brazil	0.4	0.4	-0.0
LatAm ex Brazil	0.3	0.3	-0.0
Thematic Equities	**0.0**	**14.0**	**14.0**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	3.0	3.0
Cyber Security	0.0	1.5	1.5
Fintech	0.0	1.5	1.5
Natural Resources	0.0	4.0	4.0
Oil Services	0.0	4.0	4.0
Commodities	**0.0**	**4.0**	**4.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**4.0**	**4.0**
Gold	0.0	4.0	4.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Hedge Funds	**14.0**	**14.0**	**0.0**
Private Equity	**10.0**	**10.0**	**0.0**
Real Estate	**5.0**	**5.0**	**0.0**
Total	**100.0**	**100.0**	**-0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD with Hedge Funds and 15% Illiquids (PE & RE): Risk Level 5 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an underweight position of -4.0% while gold has an overweight position of +4.0%. Global fixed income and cash both have neutral position.

Within equities, developed large cap equities have an underweight position of -12.6% and developed small/mid cap equities have an underweight position of -5.2%. Emerging market equities have an underweight of -0.1%. Thematic equities have an overweight of +14.0%.

Within fixed income, developed government debt, developed corporate investment grade, developed high yield and emerging market debt are all at neutral position.

Hedge Fund allocation in the tactial portfolio is 14%. Private Equity and Real Estate allocations are 10% and 5%, respectively. All these three asset classes positionings are neutral.

Global USD without Hedge Funds: Risk Level 1

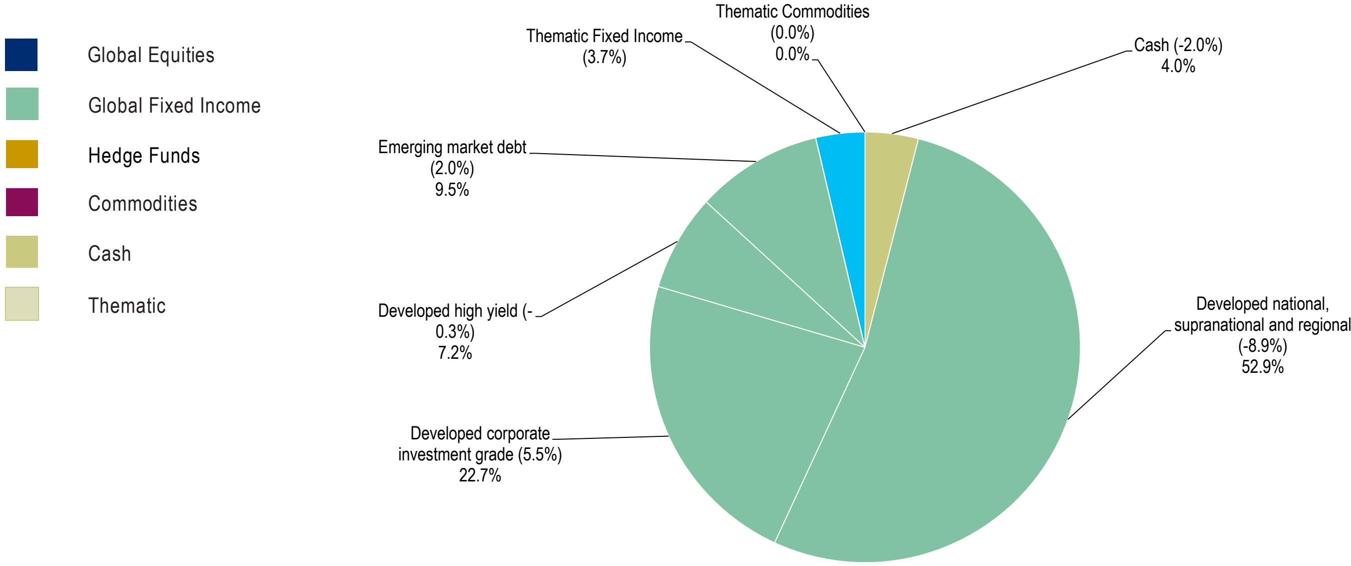
Risk Level 1 is designed for investors who have a preference for capital preservation and relative safety over the potential for a return on investment. These investors prefer to hold cash, time deposits and/or lower risk fixed income instruments.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**6.0**	**4.0**	**-2.0**
Fixed Income	**94.0**	**96.0**	**2.0**
Developed Investment Grade	**79.0**	**75.6**	**-3.4**
US	45.3	52.4	7.1
Government	19.5	20.1	0.6
Inflation-Linked	2.8	2.6	-0.2
Short	5.2	5.0	-0.2
Intermediate	8.1	7.1	-1.0
Long	3.5	5.5	2.0
Securitized	14.4	15.9	1.5
Credit	11.4	16.4	5.0
Short	1.6	2.6	1.0
Intermediate	6.0	10.0	4.0
Long	3.9	3.9	0.0
Europe	25.8	18.8	-7.0
Government	20.1	12.6	-7.5
Credit	5.8	6.3	0.5
Australia	0.5	0.5	0.0
Government	0.5	0.5	0.0
Japan	7.4	3.9	-3.5
Government	7.4	3.9	-3.5
Developed High Yield	**7.5**	**7.2**	**-0.3**
US	5.6	3.7	-1.9
Europe	1.9	3.5	1.6
Emerging Market Debt	**7.5**	**9.5**	**2.0**
Asia	1.3	2.6	1.3
Local currency	0.6	1.1	0.5
Foreign currency	0.6	1.4	0.8
EMEA	3.9	3.9	0.0
Local currency	2.0	2.0	0.0
Foreign currency	2.0	2.0	0.0
LatAm	2.3	3.0	0.7
Local currency	1.2	1.2	0.0
Foreign currency	1.2	1.9	0.7
Thematic Fixed Income	**0.0**	**3.7**	**3.7**
US Bank Loans	0.0	3.7	3.7
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**0.0**	**0.0**	**0.0**
Developed Equities	**0.0**	**0.0**	**0.0**
Developed Large Cap Equities	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Canada	0.0	0.0	0.0
UK	0.0	0.0	0.0
Switzerland	0.0	0.0	0.0
Europe ex UK ex Switzerland	0.0	0.0	0.0
Asia ex Japan	0.0	0.0	0.0
Japan	0.0	0.0	0.0
Developed Small/ Mid Cap Equities	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Non-US	0.0	0.0	0.0
Emerging All Cap Equities	**0.0**	**0.0**	**0.0**
Asia	0.0	0.0	0.0
China	0.0	0.0	0.0
Asia (ex China)	0.0	0.0	0.0
EMEA	0.0	0.0	0.0
LatAm	0.0	0.0	0.0
Brazil	0.0	0.0	0.0
LatAm ex Brazil	0.0	0.0	0.0
Thematic Equities	**0.0**	**0.0**	**0.0**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	0.0	0.0
Cyber Security	0.0	0.0	0.0
Fintech	0.0	0.0	0.0
Natural Resources	0.0	0.0	0.0
Oil Services	0.0	0.0	0.0
Commodities	**0.0**	**0.0**	**0.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**0.0**	**0.0**
Gold	0.0	0.0	0.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Total	**100.0**	**100.0**	**0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD without Hedge Funds: Risk Level 1 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an overal neutral position, global fixed income has an overweight of +2.0%, cash has an underweight of -2.0%.

Within equities, developed large cap equities, developed small/mid cap equities and emerging market equities are all at neutral positions.

Within fixed income, developed investment grade debt has an underweight position of -3.4%; developed high yield has an underweight position of -0.3% and emerging market debt has an overweight position of +2.0%. Thematic fixed income has an overweight position of +3.7%.

Global USD without Hedge Funds: Risk Level 2

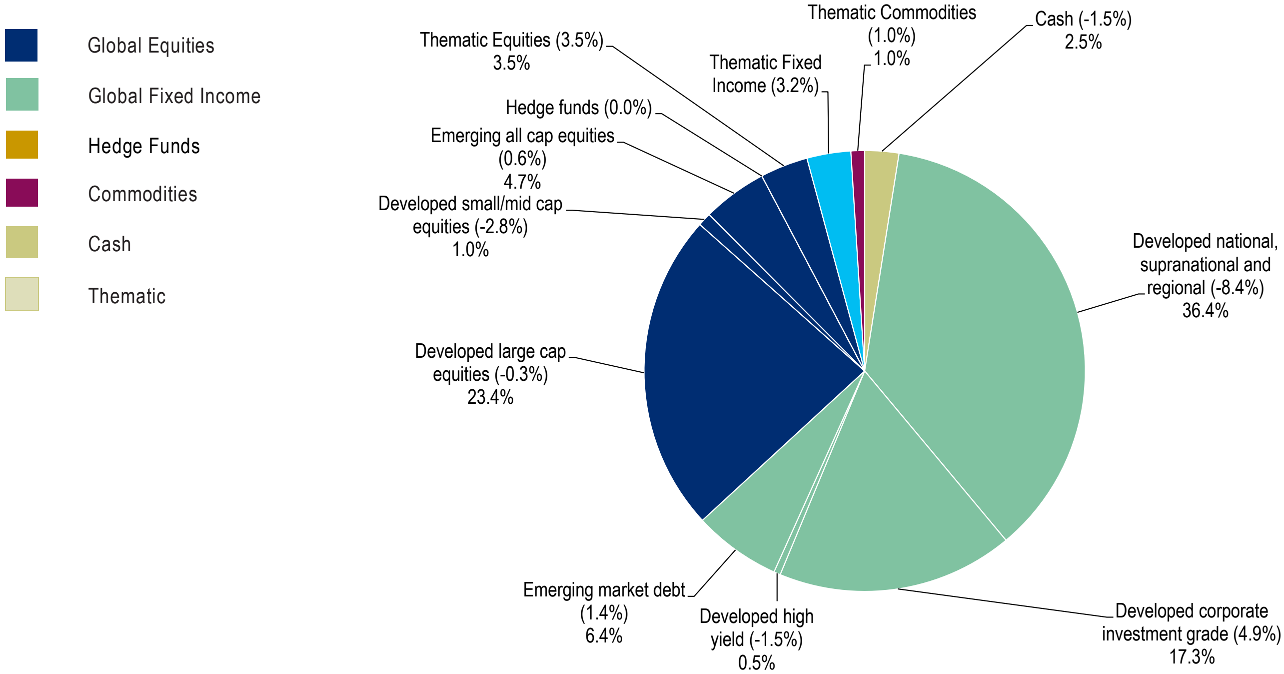
Risk Level 2 is designed for investors who emphasize capital preservation over return on investment, but who are willing to subject some portion of their principal to increased risk in order to generate a potentially greater rate of return on investmen

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**4.0**	**2.5**	**-1.5**
Fixed Income	**64.3**	**63.9**	**-0.5**
Developed Investment Grade	**57.4**	**53.8**	**-3.6**
US	32.9	39.7	6.8
Government	14.2	15.0	0.9
Inflation-Linked	2.0	2.2	0.2
Short	3.8	2.3	-1.5
Intermediate	5.9	6.0	0.2
Long	2.5	4.5	2.0
Securitized	10.4	11.5	1.1
Credit	8.3	13.1	4.9
Short	1.1	1.3	0.2
Intermediate	4.3	9.0	4.7
Long	2.8	2.8	0.0
Europe	18.8	11.8	-7.0
Government	14.6	7.6	-7.0
Credit	4.2	4.2	0.0
Australia	0.3	0.3	0.0
Government	0.3	0.3	0.0
Japan	5.4	2.0	-3.4
Government	5.4	2.0	-3.4
Developed High Yield	**2.0**	**0.5**	**-1.5**
US	1.5	0.0	-1.5
Europe	0.5	0.5	-0.0
Emerging Market Debt	**5.0**	**6.4**	**1.4**
Asia	0.8	1.9	1.0
Local currency	0.4	1.0	0.5
Foreign currency	0.4	0.9	0.5
EMEA	2.6	2.6	-0.0
Local currency	1.3	1.3	-0.0
Foreign currency	1.3	1.3	-0.0
LatAm	1.5	1.9	0.4
Local currency	0.8	0.8	-0.0
Foreign currency	0.8	1.2	0.4
Thematic Fixed Income	**0.0**	**3.2**	**3.2**
US Bank Loans	0.0	3.2	3.2
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**31.7**	**32.6**	**1.0**
Developed Equities	**27.5**	**24.4**	**-3.1**
Developed Large Cap Equities	**23.7**	**23.4**	**-0.3**
US	16.5	17.1	0.6
Canada	0.8	0.8	0.0
UK	1.0	1.2	0.2
Switzerland	0.7	0.6	-0.0
Europe ex UK ex Switzerland	2.3	1.6	-0.6
Asia ex Japan	0.8	0.8	0.0
Japan	1.6	1.3	-0.3
Developed Small/ Mid Cap Equities	**3.8**	**1.0**	**-2.8**
US	2.1	0.9	-1.2
Non-US	1.7	0.1	-1.5
Emerging All Cap Equities	**4.2**	**4.7**	**0.6**
Asia	3.5	4.3	0.8
China	1.4	2.0	0.6
Asia (ex China)	2.1	2.3	0.2
EMEA	0.4	0.1	-0.2
LatAm	0.3	0.3	0.0
Brazil	0.2	0.2	0.0
LatAm ex Brazil	0.1	0.1	0.0
Thematic Equities	**0.0**	**3.5**	**3.5**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	1.5	1.5
Cyber Security	0.0	0.0	0.0
Fintech	0.0	0.0	0.0
Natural Resources	0.0	1.0	1.0
Oil Services	0.0	1.0	1.0
Commodities	**0.0**	**1.0**	**1.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**1.0**	**1.0**
Gold	0.0	1.0	1.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Total	**100.0**	**100.0**	**0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD without Hedge Funds: Risk Level 2 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an overweight position of +1.0%, global fixed income has an underweight of -0.5%, cash has an underweight of -1.5% with gold overweight at +1.0%.

Within equities, developed large cap equities have an underweight position of -0.3% while developed small/mid cap equities have an underweight of -2.8%. Emerging market equities have an overweight of +0.6%. Thematic equities have an overweight of +3.5%.

Within fixed income, developed investment grade has an underweight position of -3.6%; developed high yield has an underweight position of -1.5% and emerging market debt has an overweight position of +1.4%. Thematic fixed income has an overweight position of +3.2%.

Global USD without Hedge Funds: Risk Level 3

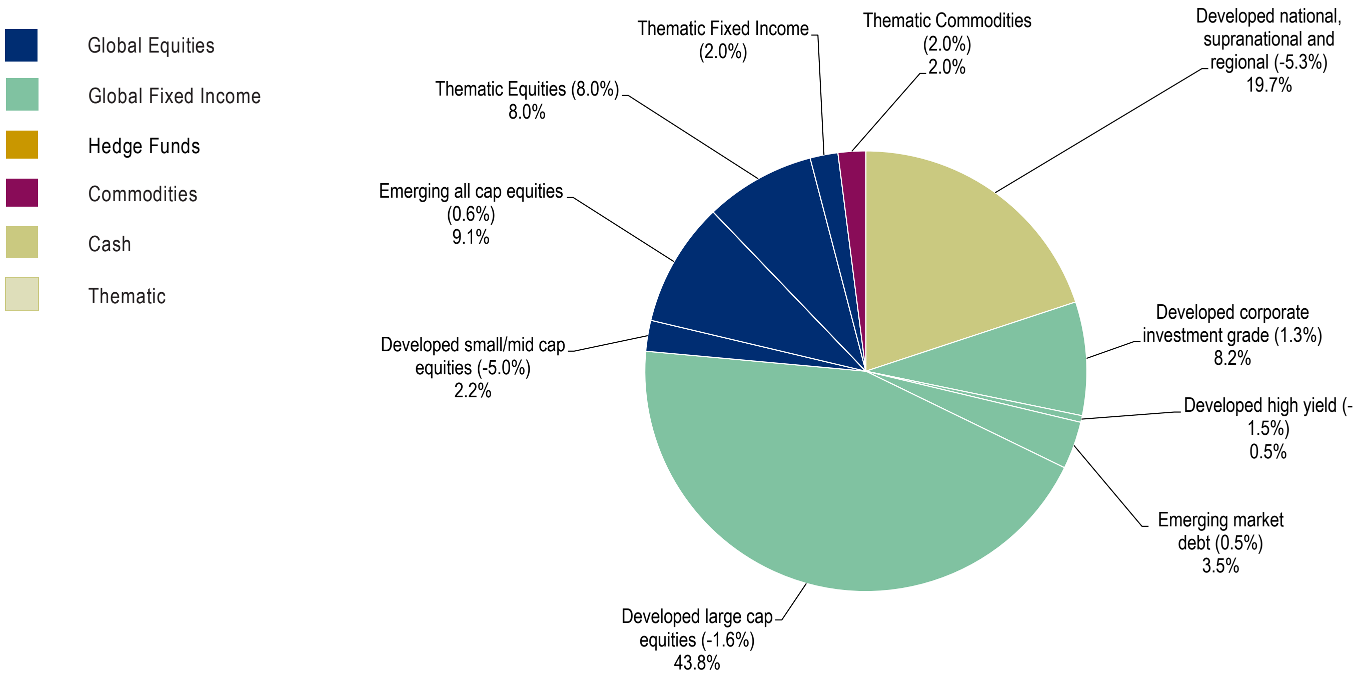
Risk Level 3 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. Risk Level 3 may be appropriate for investors willing to subject their portfolio to additional risk for potential growth in addition to a level of income reflective of his/her stated risk tolerance.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**2.0**	**1.0**	**-1.0**
Fixed Income	**36.9**	**33.9**	**-3.0**
Developed Investment Grade	**32.0**	**28.0**	**-4.0**
US	18.3	24.0	5.7
Government	7.9	12.4	4.5
Inflation-Linked	1.1	2.1	1.0
Short	2.1	0.2	-1.9
Intermediate	3.3	6.7	3.4
Long	1.4	3.4	2.0
Securitized	5.8	5.5	-0.3
Credit	4.6	6.1	1.5
Short	0.6	0.6	0.0
Intermediate	2.4	3.9	1.5
Long	1.6	1.6	0.0
Europe	10.5	3.8	-6.7
Government	8.1	1.6	-6.5
Credit	2.3	2.1	-0.2
Australia	0.2	0.2	0.0
Government	0.2	0.2	0.0
Japan	3.0	0.0	-3.0
Government	3.0	0.0	-3.0
Developed High Yield	**2.0**	**0.5**	**-1.5**
US	1.5	0.0	-1.5
Europe	0.5	0.5	-0.0
Emerging Market Debt	**3.0**	**3.5**	**0.5**
Asia	0.5	1.0	0.5
Local currency	0.3	0.6	0.3
Foreign currency	0.3	0.5	0.2
EMEA	1.5	1.5	-0.0
Local currency	0.8	0.8	-0.0
Foreign currency	0.8	0.8	-0.0
LatAm	0.9	0.9	-0.0
Local currency	0.5	0.5	-0.0
Foreign currency	0.5	0.5	-0.0
Thematic Fixed Income	**0.0**	**2.0**	**2.0**
US Bank Loans	0.0	2.0	2.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**61.1**	**63.1**	**2.0**
Developed Equities	**52.7**	**46.0**	**-6.6**
Developed Large Cap Equities	**45.4**	**43.8**	**-1.6**
US	31.6	32.1	0.5
Canada	1.6	1.6	-0.0
UK	1.9	1.9	0.0
Switzerland	1.3	1.2	-0.1
Europe ex UK ex Switzerland	4.4	3.4	-1.0
Asia ex Japan	1.6	1.6	0.0
Japan	3.1	2.1	-1.0
Developed Small/ Mid Cap Equities	**7.2**	**2.2**	**-5.0**
US	4.0	1.5	-2.5
Non-US	3.2	0.7	-2.5
Emerging All Cap Equities	**8.4**	**9.1**	**0.6**
Asia	7.1	8.1	1.0
China	2.8	3.8	1.0
Asia (ex China)	4.2	4.2	-0.0
EMEA	0.8	0.4	-0.4
LatAm	0.6	0.6	0.0
Brazil	0.4	0.4	0.0
LatAm ex Brazil	0.2	0.2	0.0
Thematic Equities	**0.0**	**8.0**	**8.0**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	2.0	2.0
Cyber Security	0.0	1.0	1.0
Fintech	0.0	1.0	1.0
Natural Resources	0.0	2.0	2.0
Oil Services	0.0	2.0	2.0
Commodities	**0.0**	**2.0**	**2.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**2.0**	**2.0**
Gold	0.0	2.0	2.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Total	**100.0**	**100.0**	**-0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD without Hedge Funds: Risk Level 3 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an overweight position of +2.0%, global fixed income has an underweight of -3.0%, cash has an underweight of -1.0% with gold overweight at +2.0%.

Within equities, developed large cap equities have an underweight position of -1.6% while developed small/mid cap equities have an underweight position of -5.0%. Emerging market equities have an overweight of +0.6%. Thematic equities have an overweight of +8.0%.

Within fixed income, developed investment grade debt has an underweight position of -4.0%; developed high yield has an underweight position of -1.5%; emerging market debt has an overweight position of +0.5%. Thematic fixed income has an overweight of +2.0%.

Global USD without Hedge Funds: Risk Level 4

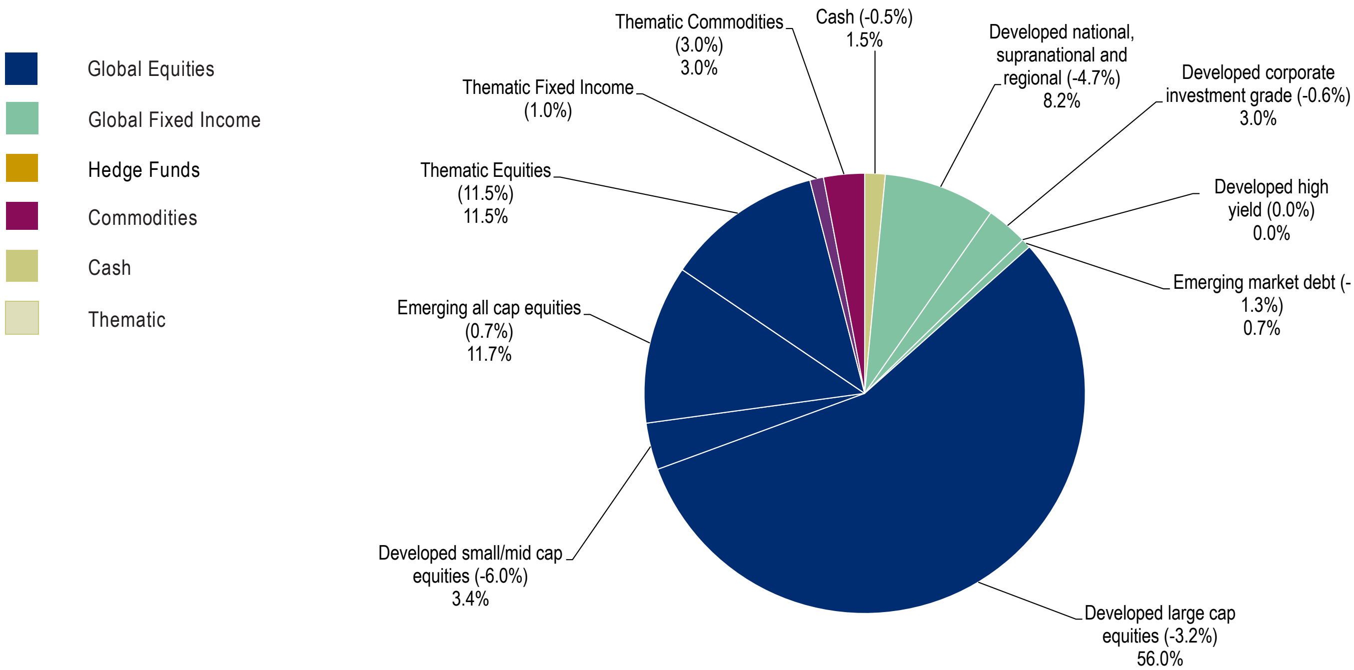
Risk Level 4 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. They are willing to subject a large portion of their portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investment. Investors may have a preference for investments or trading strategies that may assume higher-than-normal market risks and/or potentially less liquidity with the goal (but not guarantee) of commensurate gains.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**2.0**	**1.5**	**-0.5**
Fixed Income	**18.4**	**12.9**	**-5.5**
Developed Investment Grade	**16.4**	**11.2**	**-5.2**
US	9.4	10.8	1.4
Government	4.1	7.6	3.6
Inflation-Linked	0.6	0.5	-0.0
Short	1.1	0.1	-1.0
Intermediate	1.7	4.3	2.6
Long	0.7	2.7	2.0
Securitized	3.0	0.4	-2.6
Credit	2.4	2.8	0.4
Short	0.3	0.0	-0.3
Intermediate	1.2	2.5	1.2
Long	0.8	0.3	-0.5
Europe	5.4	0.4	-5.0
Government	4.2	0.2	-4.0
Credit	1.2	0.2	-1.0
Australia	0.1	0.0	-0.1
Government	0.1	0.0	-0.1
Japan	1.5	0.0	-1.5
Government	1.5	0.0	-1.5
Developed High Yield	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Europe	0.0	0.0	0.0
Emerging Market Debt	**2.0**	**0.7**	**-1.3**
Asia	0.3	0.4	0.1
Local currency	0.2	0.2	0.1
Foreign currency	0.2	0.2	-0.0
EMEA	1.0	0.0	-1.0
Local currency	0.5	0.0	-0.5
Foreign currency	0.5	0.0	-0.5
LatAm	0.6	0.3	-0.3
Local currency	0.3	0.0	-0.3
Foreign currency	0.3	0.3	-0.1
Thematic Fixed Income	**0.0**	**1.0**	**1.0**
US Bank Loans	0.0	1.0	1.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**79.6**	**82.6**	**3.0**
Developed Equities	**68.6**	**59.4**	**-9.2**
Developed Large Cap Equities	**59.2**	**56.0**	**-3.2**
US	41.2	42.3	1.1
Canada	2.1	2.1	-0.0
UK	2.5	2.2	-0.3
Switzerland	1.6	1.0	-0.6
Europe ex UK ex Switzerland	5.7	3.7	-2.0
Asia ex Japan	2.1	2.1	0.0
Japan	4.0	2.6	-1.4
Developed Small/ Mid Cap Equities	**9.4**	**3.4**	**-6.0**
US	5.3	2.5	-2.8
Non-US	4.2	0.9	-3.3
Emerging All Cap Equities	**11.0**	**11.7**	**0.7**
Asia	9.2	10.4	1.2
China	3.7	5.0	1.3
Asia (ex China)	5.5	5.4	-0.1
EMEA	1.0	0.5	-0.5
LatAm	0.8	0.8	0.0
Brazil	0.5	0.5	0.0
LatAm ex Brazil	0.3	0.3	0.0
Thematic Equities	**0.0**	**11.5**	**11.5**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	2.8	2.8
Cyber Security	0.0	1.4	1.4
Fintech	0.0	1.4	1.4
Natural Resources	0.0	3.0	3.0
Oil Services	0.0	3.0	3.0
Commodities	**0.0**	**3.0**	**3.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**3.0**	**3.0**
Gold	0.0	3.0	3.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Total	**100.0**	**100.0**	**-0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD without Hedge Funds: Risk Level 4 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an overweight position of +3.0%, global fixed income has an underweight of -5.5%, cash has an underweight of -0.5% with gold overweight at +3.0%.

Within equities, developed large cap equities have an underweight position of -3.2% while developed small/mid cap equities have an underweight position of -6.0%. Emerging market equities have an overweight of +0.7%. Thematic equities have an overweight position of +11.5%.

Within fixed income, developed investment grade debt has an underweight position of -5.2%; developed high yield has a neutral position and emerging market debt has an underweight position of -1.3%. Thematic fixed income has an overweight position of +1.0%.

Global USD without Hedge Funds: Risk Level 5

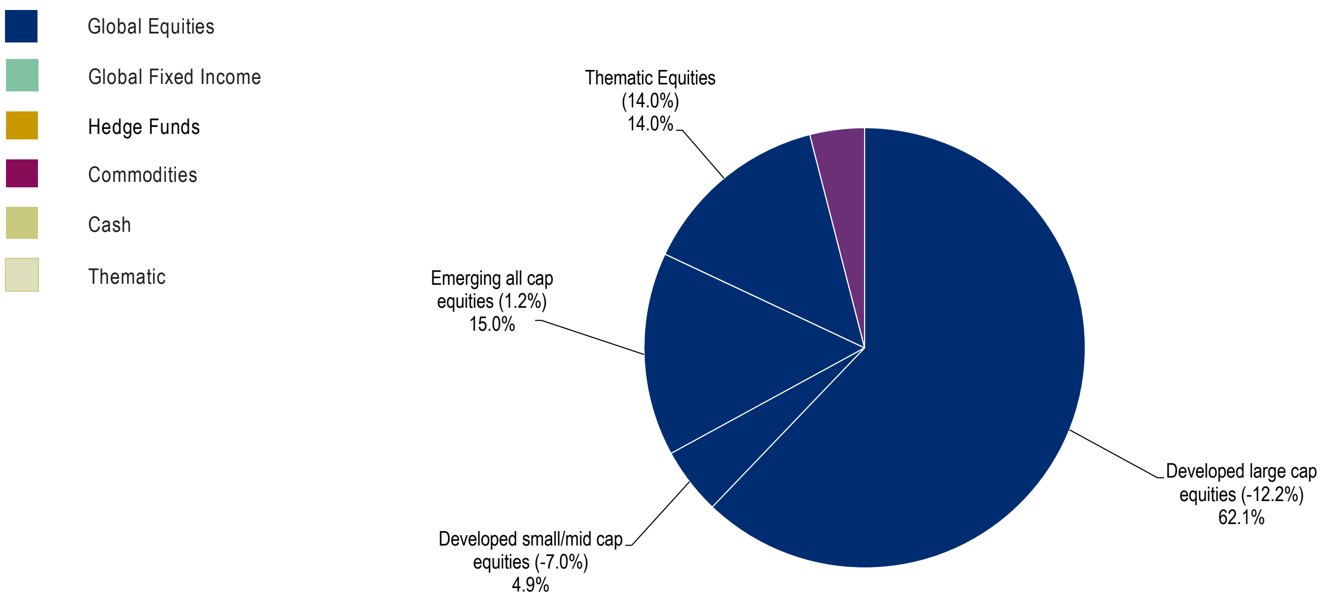
Risk Level 5 is designed for investors who emphasize return on investment. They are willing to subject their entire portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investments. Investors may have a preference for investments or trading strategies that may assume higher than-normal market risks and/or potentially less liquidity with the goal (but not guarantee) of commensurate gains. Clients may engage in tactical or opportunistic trading, which may involve higher volatility and variability of returns.

Classification	Strategic (%)	Tactical* (%)	Active (%)
Cash	**0.0**	**0.0**	**0.0**
Fixed income	**0.0**	**0.0**	**0.0**
Developed Investment Grade	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Government	0.0	0.0	0.0
Inflation-Linked	0.0	0.0	0.0
Short	0.0	0.0	0.0
Intermediate	0.0	0.0	0.0
Long	0.0	0.0	0.0
Securitized	0.0	0.0	0.0
Credit	0.0	0.0	0.0
Short	0.0	0.0	0.0
Intermediate	0.0	0.0	0.0
Long	0.0	0.0	0.0
Europe	0.0	0.0	0.0
Government	0.0	0.0	0.0
Credit	0.0	0.0	0.0
Australia	0.0	0.0	0.0
Government	0.0	0.0	0.0
Japan	0.0	0.0	0.0
Government	0.0	0.0	0.0
Developed High Yield	**0.0**	**0.0**	**0.0**
US	0.0	0.0	0.0
Europe	0.0	0.0	0.0
Emerging Market Debt	**0.0**	**0.0**	**0.0**
Asia	0.0	0.0	0.0
Local currency	0.0	0.0	0.0
Foreign currency	0.0	0.0	0.0
EMEA	0.0	0.0	0.0
Local currency	0.0	0.0	0.0
Foreign currency	0.0	0.0	0.0
LatAm	0.0	0.0	0.0
Local currency	0.0	0.0	0.0
Foreign currency	0.0	0.0	0.0
Thematic Fixed Income	**0.0**	**0.0**	**0.0**
US Bank Loans	0.0	0.0	0.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0

Classification	Strategic (%)	Tactical* (%)	Active (%)
Equities	**100.0**	**96.0**	**-4.0**
Developed Equities	**86.2**	**67.0**	**-19.2**
Developed Large Cap Equities	**74.3**	**62.1**	**-12.2**
US	51.7	51.2	-0.5
Canada	2.6	1.1	-1.5
UK	3.1	1.2	-1.9
Switzerland	2.1	0.5	-1.6
Europe ex UK ex Switzerland	7.2	3.4	-3.8
Asia ex Japan	2.6	2.2	-0.4
Japan	5.0	2.5	-2.5
Developed Small/ Mid Cap Equities	**11.9**	**4.9**	**-7.0**
US	6.6	3.6	-3.0
Non-US	5.2	1.3	-4.0
Emerging All Cap Equities	**13.8**	**15.0**	**1.2**
Asia	11.6	13.2	1.6
China	4.6	6.1	1.5
Asia (ex China)	6.9	7.1	0.2
EMEA	1.3	0.8	-0.5
LatAm	1.0	1.0	0.0
Brazil	0.6	0.6	0.0
LatAm ex Brazil	0.4	0.4	0.0
Thematic Equities	**0.0**	**14.0**	**14.0**
Global Equity REITs	0.0	0.0	0.0
US Mortgage REITs	0.0	0.0	0.0
Global Healthcare	0.0	0.0	0.0
Global Pharma	0.0	3.0	3.0
Cyber Security	0.0	1.5	1.5
Fintech	0.0	1.5	1.5
Natural Resources	0.0	4.0	4.0
Oil Services	0.0	4.0	4.0
Commodities	**0.0**	**4.0**	**4.0**
Composite Commodities	**0.0**	**0.0**	**0.0**
Thematic Commodities	**0.0**	**4.0**	**4.0**
Gold	0.0	4.0	4.0
Thematic 2	0.0	0.0	0.0
Thematic 3	0.0	0.0	0.0
Thematic 4	0.0	0.0	0.0
Thematic 5	0.0	0.0	0.0
Total	**100.0**	**100.0**	**-0.0**

Active = the difference between tactical and strategic allocations. Minor differences may result due to rounding.

Global USD without Hedge Funds: Risk Level 5 - Tactical Allocations



Figures in brackets are active allocations. All allocations are subject to change at discretion of the GIC of the Citi Private Bank.

Core Positions

Global equities have an underweight position of -4.0% while gold is overweight at +4.0%. Global fixed income and cash are both at neutral position.

Within equities, developed large cap equities have an underweight position of -12.2% and developed small/mid cap equities have an underweight position of -7.0%. Emerging market equities have an overweight of +1.2%. Thematic equities have an overweight position of +14.0%.

Within fixed income, developed government debt, developed corporate investment grade, developed high yield and emerging market debt are all at neutral position.

Asset Allocation Definitions

ASSET CLASSES	Benchmarked against
Global equities	MSCI All Country World Index, which represents 48 developed and emerging equity markets. Index components are weighted by market capitalization.
Global bonds	Bloomberg Barclays Capital Multiverse (Hedged) Index, which contains the government -related portion of the Multiverse Index, and accounts for approximately 14% of the larger index.
Hedge funds	HFRX Global Hedge Fund Index, which is designed to be representative of the overall composition of the hedge fund universe. It comprises all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage and relative value arbitrage. The strategies are asset-weighted based on the distribution of assets in the hedge fund industry.
Commodities	Dow Jones-UBS Commodity Index, which is composed of futures contracts on physical commodities traded on US exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange (LME). The major commodity sectors are represented including energy, petroleum, precious metals, industrial metals, grains, livestock, softs, agriculture and ex-energy. The Thomson Reuters / Core Commodity Index is designed to provide timely and accurate representation of a long-only, broadly diversified investment in commodities through a transparent and disciplined calculation methodology.
Cash	Three-month LIBOR, which is the interest rates that banks charge each other in the international inter-bank market for three-month loans (usually denominated in Eurodollars).

Equities

Developed market large cap	MSCI World Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure the equity market performance of the large cap stocks in 23 developed markets. Large cap is defined as stocks representing roughly 70% of each market's capitalization.
All Country Ex US	MSCI All Country ex US, which is free-float adjusted and weighted by market capitalization. The index is designed to measure the equity market performance of the large cap stocks in all countries excluding the US.
US	Standard & Poor's 500 Index, which is a capitalization-weighted index that includes a representative sample of 500 leading companies in leading industries of the US economy. Although the S&P 500 focuses on the large cap segment of the market, with over 80% coverage of US equities, it is also an ideal proxy for the total market.
Europe ex UK	MSCI Europe ex UK Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in each of Europe's developed markets, except for the UK
UK	MSCI UK Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in the UK
Japan	MSCI Japan Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in Japan.
Asia Pacific ex Japan	MSCI Asia Pacific ex Japan Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure the performance of large cap stocks in Australia, Hong Kong, New Zealand and Singapore.
Developed market small and mid-cap (SMID)	MSCI World Small Cap Index, which is a capitalization-weighted index that measures small cap stock performance in 23 developed equity markets.
Emerging market	MSCI Emerging Markets Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure equity market performance of 22 emerging markets.

Bonds

Developed sovereign	Citi World Government Bond Index (WGBI), which consists of the major global investment grade government bond markets and is composed of sovereign debt, denominated in the domestic currency. To join the WGBI, the market must satisfy size, credit and barriers-to-entry requirements. In order to ensure that the WGBI remains an investment grade benchmark, a minimum credit quality of BBB–/Baa3 by either S&P or Moody's is imposed. The index is rebalanced monthly.
Emerging sovereign	Citi Emerging Market Sovereign Bond Index (ESBI), which includes Brady bonds and US dollar -denominated emerging market sovereign debt issued in the global, Yankee and Eurodollar markets, excluding loans. It is composed of debt in Africa, Asia, Europe and Latin America. We classify an emerging market as a sovereign with a maximum foreign debt rating of BBB+/Baa1 by S&P or Moody's. Defaulted issues are excluded.
Supranationals	Citi World Broad Investment Grade Index (WBIG)—Government Related, which is a subsector of the WBIG. The index includes fixed rate investment grade agency, supranational and regional government debt, denominated in the domestic currency. The index is rebalanced monthly.
Corporate investment grade	Citi World Broad Investment Grade Index (WBIG)—Corporate, which is a subsector of the WBIG. The index includes fixed rate global investment grade corporate debt within the finance, industrial and utility sectors, denominated in the domestic currency. The index is rebalanced monthly.
Corporate high yield	Bloomberg Barclays Global High Yield Corporate Index. Provides a broad-based measure of the global high yield fixed income markets. It is also a component of the Multiverse Index and the Global Aggregate Index.
Securitized	Citi World Broad Investment Grade Index (WBIG)—Securitized, which is a subsector of the WBIG. The index includes global investment grade collateralized debt denominated in the domestic currency, including mortgage -backed securities, covered bonds (Pfandbriefe) and asset-backed securities. The index is rebalanced monthly. Moody's Baa Corporate Bond Index is an investment bond index that tracks the performance of all bonds given a Baa rating by Moody's Investors Service.

BAML US Corporate index (Bank of America Merrill Lynch) tracks the performance of US dollar denominated investment grade rated corporate debt publically issued in the US domestic market.

Other miscellaneous definitions

Asset Backed Securities (ABS)	A security whose income payments and hence value are derived from and collateralized (or "backed") by a specified pool of underlying assets such as consumer credit card debt or auto loans.
Commercial Mortgage Backed Securities (CMBS)	Commercial mortgage-backed securities (CMBS) are a type of mortgage-backed security that is secured by mortgages on commercial properties, instead of residential real estate.
High Yield Corporate Bonds (HY)	High yield corporate bonds are bonds with a credit rating less than BBB- (S&P) or Baa3 (Moody's), and are debt securities issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations.
Investment Grade Corporate Bonds (IG)	Investment grade corporate bonds are bonds with a credit rating equal to or above BBB- (S&P) or Baa3 (Moody's), and are debt securities issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations.
COVID-Cyclicals	Financials, Industrials, Energy, Materials, Real Estate, Consumer Discretionary ex-Amazon.
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Bond rating equivalence

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Bond credit quality ratings	Rating agencies		
Credit risk	**Moody's[1]**	**Standard and Poor's[2]**	**Fitch Ratings[2]**
Investment Grade			
Highest quality	Aaa	AAA	AAA
High quality (very strong)	Aa	AA	AA
Upper medium grade (Strong)	A	A	A
Medium grade	Baa	BBB	BBB
Not Investment Grade			
Lower medium grade (somewhat speculative)	Ba	BB	BB
Low grade (speculative)	B	B	B
Poor quality (may default)	Caa	CCC	CCC
Most speculative	Ca	CC	CC
No interest being paid or bankruptcy petition filed	C	D	C
In default	C	D	D

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