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Citi Global Wealth Investments

March 9, 2022

Global Strategy | Quadrant

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A Global Scramble for Resources

Russia and Ukraine together represent one of the world's largest commodity exporting regions. Western producers will have to step up and fill an export supply gap created by their output losses and trade disruptions. This includes large quantities of oil, gas, metals and, tragically, agricultural exports to much of the emerging and developed world.

Even if the devastating conflict in Ukraine comes to a conclusion, it is unlikely that western sanctions on Russia will be rolled back. It is unclear how much shifting trade flows - particularly to China - can help mitigate a global shock. We believe the adjustment to recover or replace supplies could take as long as two years. With this realization, the futures price of oil and other commodities has shifted higher not only in the near term, but in the longer term as well.

The conflict in Ukraine will extend the pre-existing global supply shock (the residual of COVID distortions and stimulus). World oil output has been increasing, production and trade were finally starting to make progress rebalancing supply to demand. However, the scope for supply disruptions from Russia/Ukraine has the capacity to rival history's largest shocks.

In the US, crude oil production has finally risen at a double-digit pace over the last 12 months, but output is still 11% below an early 2020 peak. Higher oil, gas, and agricultural commodity prices will incentivize further production gains. This will slow inflation later this year, but not before US consumer prices surge further. A consumer-harming spike to 8 ½% US inflation in the next 3 months is most likely.

We have raised "inflation hedges" to roughly 7% of medium-risk global portfolios, adding a 4% position to natural resources producers and oil services firms. We have added back gold to portfolios in addition to our existing overweight in Treasury Inflation Protected Securities. These portfolio additions – including some of the largest commodity producers in the US, Canada, the UK, Australia and Brazil - come largely through reductions in Europe and Japan equities, regions with consumer vulnerability.

Prior to the shocking events in Ukraine, it was already clear that a transition from fossil fuels to renewables required significant supply redundancy to avoid damaging price spikes. If Russian oil and gas output is lost, not a single additional net unit of carbon would be emitted to replace it.

An unfolding, painful jump in crude oil and natural gas costs will incentivize investments in alternatives. At the same time, US oil field services firms and much broader global natural resources firms are highly likely to see an improved profit environment for the coming two years, even when "crisis peak prices" (perhaps oil in a $125-$150 range near term) fall back.

As a "side show" to the tragic world events, the Fed intends to tighten into the supply shock. However, the Fed has no true influence over the supply recovery needed to stabilize consumer prices**.** This raises recession risk, particularly if supplies remain short while the Fed's tightening accumulates. However, a plunge in bond yields should (partly) reverse – the yield curve re-steepening - if and when global producers/exporters rise to fill the hole of Russia's departure.

INVESTMENT PRODUCTS: NOT FDIC INSURED • NOT CDIC INSURED • NOT GOVERNMENT INSURED • NO BANK GUARANTEE • MAY LOSE VALUE

GIC | March 7th

As one of the world's largest commodity exporting regions, the Russia/Ukraine conflict will effectively extend and worsen an existing global supply shock with negative ramifications for the world economy. Today, the Global Investment Committee (GIC) made asset allocation changes to seek diversification against inflation and reallocate capital to the industries needed to replace lost commodity output globally.

Today, we added a 4% position in natural resources equities divided between the world's largest commodity producing industries (this includes energy, agriculture and metals etc.) and the narrow industry category of oil field services. We also reinstated a 2% overweight in gold.

The action reduced equities mostly in Europe and Japan, though natural resources firms in the region are included. (The largest natural resources firms regionally hail from the US, Canada, UK, Australia and Brazil). **The net change reduced our global equities allocation to 2% overweight from 4% previously. Global Fixed Income and cash remain 4% underweight.** In fixed income, we hold overweights in US Treasury Inflation Protected Securities, medium duration US Treasuries, IG corporates and variable rate loans. Our thematic equity overweights in pharmaceuticals, cyber-security, payments and fintech, also remain in place.

Russian oil exports are equal to about 9% of global consumption. Russia and Ukraine wheat exports are roughly 18% of the world total. Regionally concentrated, Russia provides the majority of the natural gas imported by Northern European economies. A complete loss of these exports would be the rough equivalent of history's largest supply shocks. As such, authorities have attempted to shield Russian commodity exports from sanctions. Changes in trade flows toward Asia could re-direct commodities trade, minimizing shortages and price spikes. Nonetheless, Western sanctions on Russia will very likely disrupt Russian exports in coming months or years. Tragically, Ukraine's lost output will vault global food commodities prices barring a rapid end to hostilities.

As described in our latest CIO Bulletin, the conflict will very likely cause US consumer price inflation to surge to an 8 ½% year/year pace in the next few months with the monthly increases near the pace witnessed during the 1974 OPEC oil embargo. While there are great uncertainties in both directions, near-term crude oil prices could surge to $150 per barrel over the short term.

Severe natural gas shortages and price spikes in Europe this past winter highlighted a need for redundant energy supplies - including both alternatives and conventional sources - prior to the Russia shock. Fortunately, global energy production was already on the rise ahead of latest turn in the conflict, with US crude oil output 16% above the year-ago pace in the latest week. We would also expect the price shock to spur global renewables investments, but with less immediate variability.

The "crisis spike price" for many commodities is unlikely to be the enduring price, and we would expect lower prices later this year. Nonetheless, longer-term commodity futures prices have shifted higher in level over the coming two years or longer. Replacing lost Russian output will require substantial new investment and production gains in other regions to contain prices. For this reason, oilfield services providers will need to see dramatically enhanced investment activity. Similarly, suppliers of fertilizer and agricultural products will likely see sharply enhanced profitability at the expense of consumers globally.

The Federal Reserve aims to tighten monetary policy into the lingering and building supply shock. This raises downside risk for the US and world economy, particularly as the Fed's actions build over time. Nonetheless, markets have been reducing the odds of a sharp US monetary tightening as the Fed will be impotent to fight supply disruptions solely with demand management tools. While we maintain a large overweight in medium-duration US Treasury and investment grade bonds, we believe most global yields are still too low to provide a hedge against the inflation spike, even as many equity sectors weaken. A drop in real interest rates should provide support for the gold price, which remains an effective tail risk hedge in our view. In the near term, commodity futures indices may benefit from the immediate shock of the Russia conflict. However, peak prices may be reached in a short time span, with losses to follow.

The Global Investment Committee will continue to closely monitor unfolding developments and take actions necessary to adjust to emerging risks and potential opportunities with our tactical investment horizon of 12-18 months in mind.

ASSET CLASSES | Global USD with Alternatives Level 3

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

*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

Steven Wieting
Chief Investment Strategist
& Chief Economist

A Global Scramble for Resources

The world sadly faces another shock of severe magnitude just two years after COVID struck.

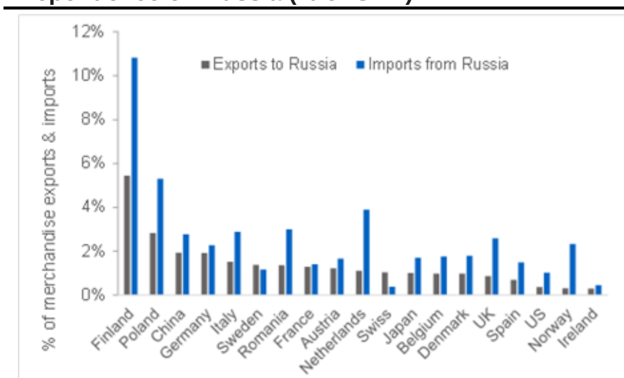
In addition to the human tragedy suffered by the Ukrainian people, the loss of a significant (uncertain) share of Russia and Ukraine's commodity output will extend and exacerbate the supply shock of 2021.

How the tragic conflict in Ukraine comes to an end is a matter of great speculation. Even if it comes to a "conclusion" as it did in Crimea and parts of Georgia in 2008, it is unlikely that western sanctions on Russia will be rolled back. The world is, therefore, likely to suffer from a severe drop in Russian commodity exports (Figure 1). Russian exports account for 9% of the world's oil exports and 6% of global natural gas supplies, a large part of which are delivered to Western Europe. Russia and Ukraine also account for 18% of global wheat exports, and specific rare materials needed by many industries.

To a certain extent, Russia can re-direct its exports to countries willing to trade with it, the largest of which is China. However, it would take a dramatic change in trade flows and the willingness for China to assume the full political and economic risks of aligning itself with Russia for the world to avoid a sizeable commodity supply shock and price spike (Figures 2-3). We believe that China's own limits on the concentration of supplies from any one exporter will be stretched, not eliminated.

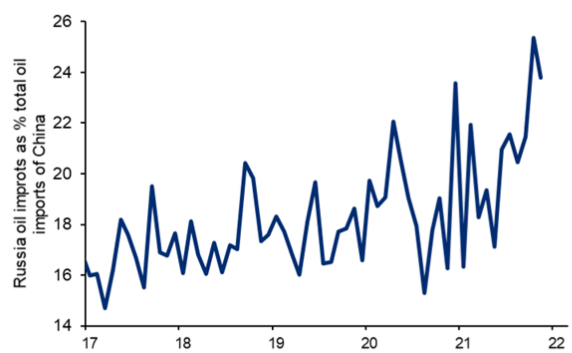
Therefore, Western producers will have to step up and fill Russia's export gap as well as agricultural export losses from Ukraine. We believe that the adjustment to recover supplies could take as long as two years. With this realization, the futures price of oil and other commodities has shifted higher not only in the near term, but in the longer term as well (Figure 4).

Figure 1: Share of Each National Economy's Trade Dependence on Russia (% of GDP)



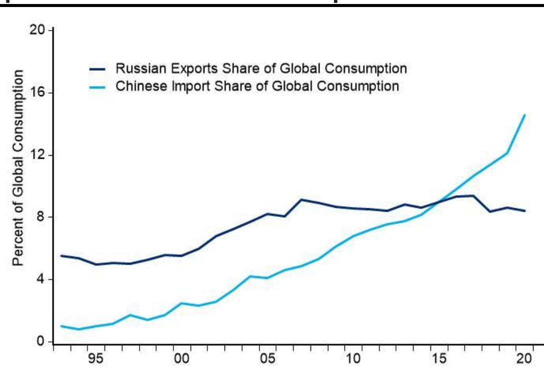
Source: Haver Analytics and Bloomberg through March 4, 2022.

Figure 2: China: Russian Crude Oil Imports as % of China's Total Imports



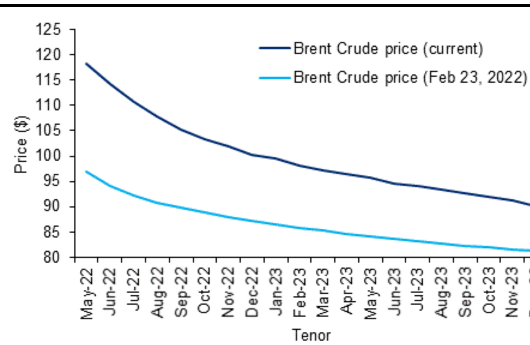
Source: Haver Analytics and Bloomberg through March 4, 2022.

Figure 3: China's Crude Oil Imports and Russian's Exports as % of World Consumption



Source: Haver Analytics and Bloomberg through March 4, 2022.

Figure 4: Brent Crude Oil Price Curve to Jan-2024: Pre- and Post-Ukraine Conflict



Source: Haver Analytics and Bloomberg through March 4, 2022.

The world's consumers will pay much more for scarce commodities, with the least able suffering greatly for it.

Public policy options are limited, but might be helpful to assist the global production and trade adjustments markets will lead.

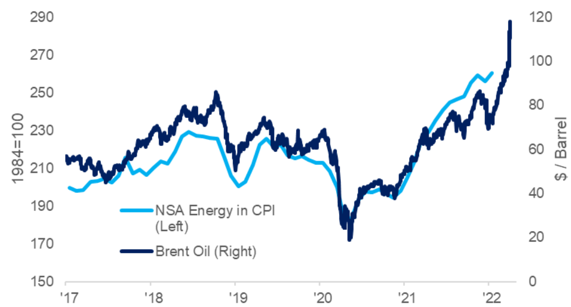
Russia's Departure Adds to the Duration and Severity of the Inflation Shock

With inventories held lean relative to consumption, small changes in either supply and demand for crude oil have historically led to severe price volatility. We believe the worsening of the crisis and its immediate impact on crude oil supplies could see crude spike to $150 per barrel. A price ranging between $125-$150 would send US gasoline prices perhaps 20% higher by early Spring.

If this occurs, the US consumer price index will be as much as 8.5% higher than a year ago. This compares to +7.5% in January and would be a new cycle high. We believe this bearish view on inflation will be exacerbated once higher prices for food commodities are factored in (Figures 5 and 6). Absent further Covid transfer payments, this shock to household budgets will sink discretionary consumer spending at a time when consumer spending was already slowing.

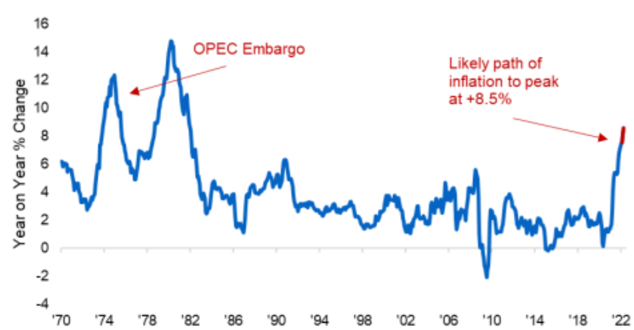
Unfortunately, as we have written before (please see our last Quadrant), the Federal Reserve's desire to fight inflation by raising rates and Quantitative Tightening will not address near-term inflationary pressures driven by commodity shortages. In fact, if the Fed tightens monetary policy too quickly into a worsening supply shock (Figures 7 and 8), the impact could lead to a self-reinforcing economic contraction.

Figure 5: Brent Crude Oil and US CPI for Energy



Source: Haver Analytics and Bloomberg through March 4, 2022.

Figure 6: US Headline CPI: Instead of Near-Term Peak, Likely Acceleration to +8.5% by Spring



Source: Haver Analytics and Bloomberg through March 4, 2022.

Figure 7: Solid US Employment and Wages… Average Hourly Earnings: Y/Y%

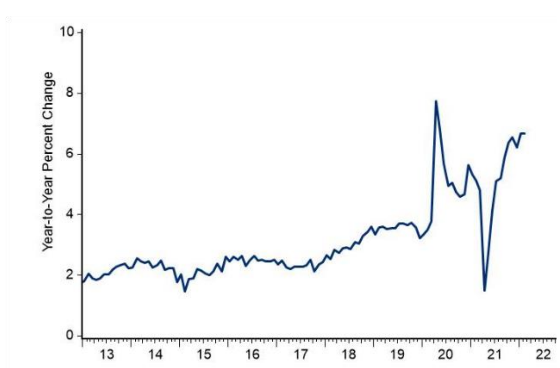
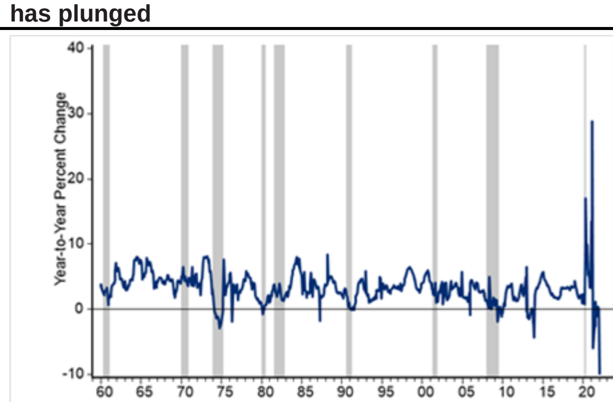


Figure 8: …But with a drop in government income transfers and surging inflation, real disposable income has plunged



Source: Haver Analytics and Bloomberg through March 4, 2022. Note: Shaded regions are recessions.

First a "Crisis Spike" in Price, Then a Shift in Production

The chances of a severe commodity price spike seem highest in the near term. When there is a shortage of supply, desperate bidders in need of the commodity will typically overpay, generating a "crisis spike" in prices. This is most evident in natural gas spot markets through history (see Figure 9).

Profit incentives for the world's oil and gas producers have surged.

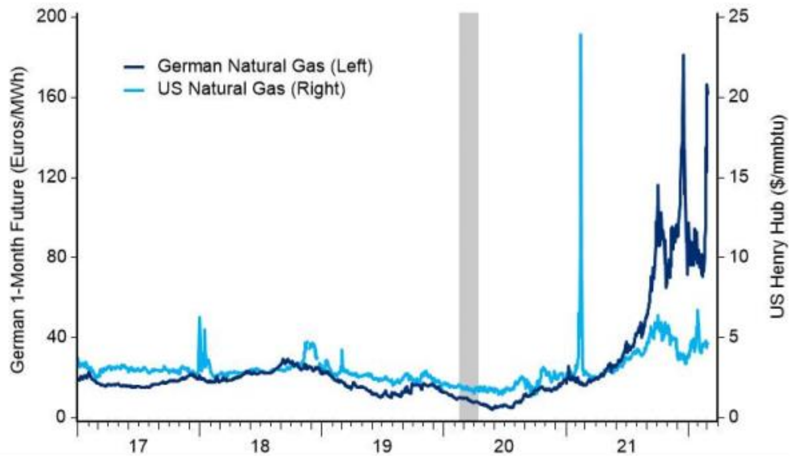
We then expect that producers will rapidly adjust outputs to take advantage of the higher profit opportunity. In the past week, US crude oil output finally rose by a double-digit percentage for the year (Figure 10). Nonetheless, US crude oil output remains 11% below a record high level. Therefore, we expect US oil and natural gas outputs will likely reach records in the coming year as the commodity price is far above production costs (Figure 11).

The heighted profit opportunity may linger deep into 2023 even if the oil price retreats from a peak.

To the extent that new supplies do not overcome the Russian export losses, prices will also continue to rise. Profitability and returns for producers would then be higher for longer. In the case that supplies rise rapidly, unit growth will certainly boost profitability for oil services equipment makers for a time, as well.

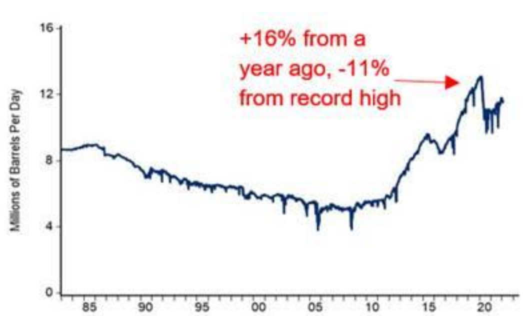
With the lingering effects of COVID disruptions, labor and capital constraints are notable in the oilfield sector. However, extraction technology is such that US oil well productivity can expand production meaningfully with few new resources. In fact, oil producers the world over should be enriched.

Figure 9: US and German Natural Gas Prices



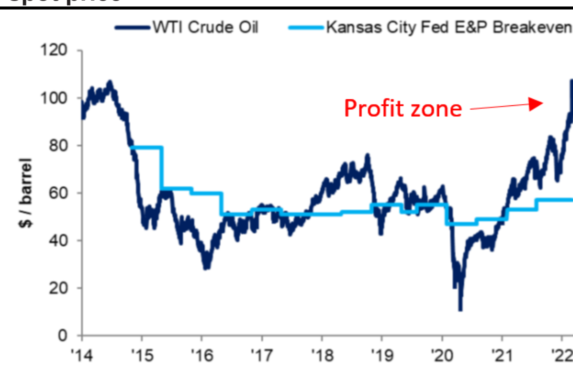
Source: Haver Analytics through March 4, 2022. Note: Shaded regions are recessions.

Figure 10: US crude oil output weekly



Source: Haver Analytics and Bloomberg through March 4, 2022.

Figure 11: US crude oil estimated breakeven price vs spot price



Source: Haver Analytics and Bloomberg through March 4, 2022.

Time for Realism Regarding the Transition to Renewables

We believe Western producers need to respond to offset Russia's export losses or the world economy will needlessly suffer along with Russia. Prior to the events in Ukraine, it was already clear that a transition from fossil fuels to renewables required significant supply redundancy to avoid damaging price spikes. If Russian oil and gas output is lost, not a single additional net unit of carbon would be emitted to replace it.

Shocking gas price spikes in Europe prior to the Ukraine conflict already hinted at the need for energy supply redundancies.

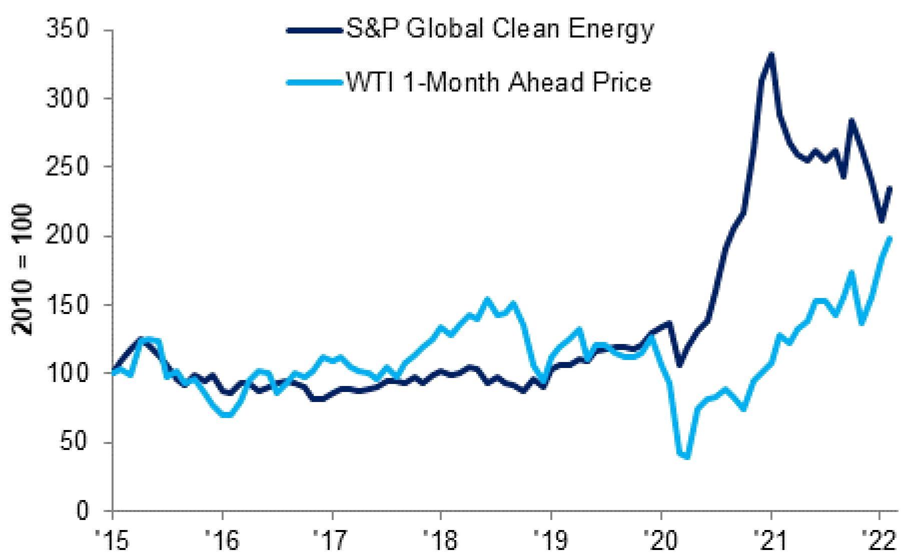
As we discussed in our last *Quadrant*, we do believe the spike in oil will incentivize investment and profitability in renewable energy. The group is still suffering from the exuberant performance boom of 2020, but the enlarged energy needs that will come from lost Russian gas exports may help the sector bottom in a durable way (see Figure 12). Industry performance, however, will remain volatile as many of the new clean energy technology firms have balance sheets typical of start-ups. Their gains will replace fossil fuels over a long period. To avoid recessionary supply shocks, one cannot wait and live without energy.

As an aside, we believe US trade restriction on solar panels imported from China are counterproductive for US clean energy goals. However, any change in this policy would generate both winners and losers within the sector and faces political inertia.

In his State of the Union Address, President Biden noted a large release of 30 million barrels of oil from the US Strategic Petroleum Reserve. So, we ask, who should refill it? US producers or foreign producers?

In short, filling the hole of Russia's departure means the world's other commodity producers must rise to meet demand. To harken back to Biden's SOTU address again, the president said, "lower prices, not wages." Lowering prices will take producing more or consuming less. We believe policymakers must face this with realistic actions to help pave the way for output growth.

Figure 12: Clean energy equities vs crude oil futures price



Source: Haver Analytics through March 4, 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.

Portfolio Reallocations

To reallocate capital to address the realities of the situation, we've made several portfolio changes.

1) We've added a new thematic equity weighting to non-Russian commodities producers who will help fill the world's needs. This is a 2% position in global commodity producers with the largest regional allocations in the US, Canada, the UK, Australia and Brazil among others. The prospective dividend yield from these investments could reach 4% or more in the coming year while their equity price performance is tied closely to underlying commodities which are in short supply. We've also added a 2% position to oil field and gas services, a group that has lagged the performance of the petroleum price (see figures 13-14.)

While we believe commodity futures prices could also provide very strong short-term returns, as noted above, we see producers having more enduring returns. Producer equities better fit our tactical return target period of 12-18 months. Commodity futures might reach peak pricing much faster.

2) We've added back a 2% overweight to physical gold. Gold is a less volatile commodity, but still provides a high-quality risk hedge in a dangerous world. A rise in short-term inflation and inflation expectations should drive down real yields. This has been the most reliable driver of gold's value (see figures 15-16).

New investments for the new shock, not the ideal world we hope for.

Along with our 1% overweight to Treasury Inflation Protected Securities, we now hold about 7% of medium-risk global portfolios specifically in assets we view as inflation hedges. To make room for these allocations, we've cut equities in other sectors, particularly in Europe and Japan. While commodity producers are equities, our global equities allocation is now -2% excluding natural resources firms (+2% included, down from +4% last month).

Conclusion. The world is facing another shock of magnitude just two years after the pandemic. This time it is a man made crisis. Among other clear areas of economic activity that will be driven by the shock, NATO countries and others will spend more on defense equipment as a deterrent to further westward Russian expansion. These are not investments anyone would desire to make in a perfect world. They are, however, necessary in the real world that includes the clash of civilizations Russia has unleashed (see figures 17-18).

Figure 13: US Oilfield Services vs Crude Oil

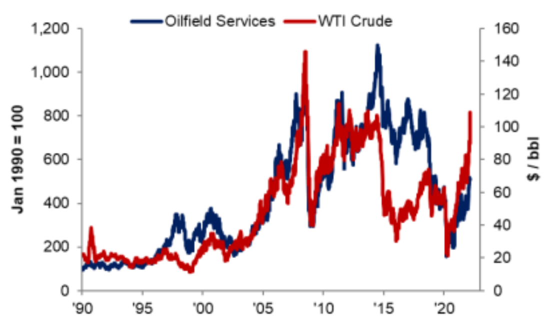


Figure 14: S&P Energy Sector Component Free Cash Flow and Dividend Yields

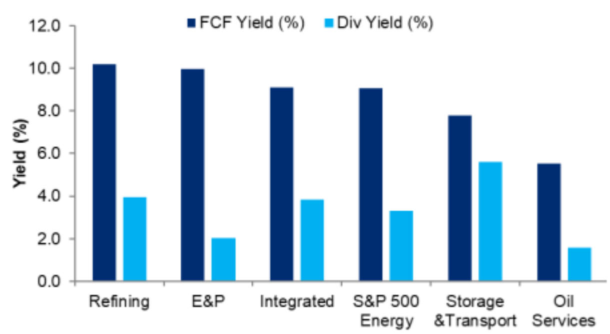


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Figure 15: US 2-Year vs 10-Year Inflation Expectations in TIPS Market

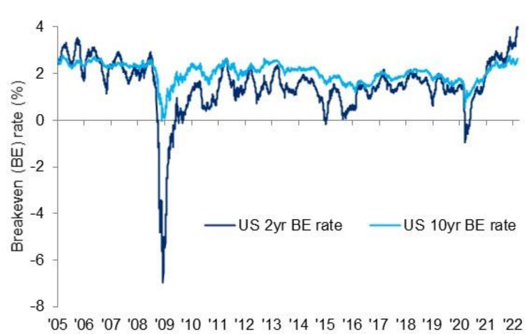

Figure 16: Real 10-Year US Treasury Yield (TIPS) vs Gold Price

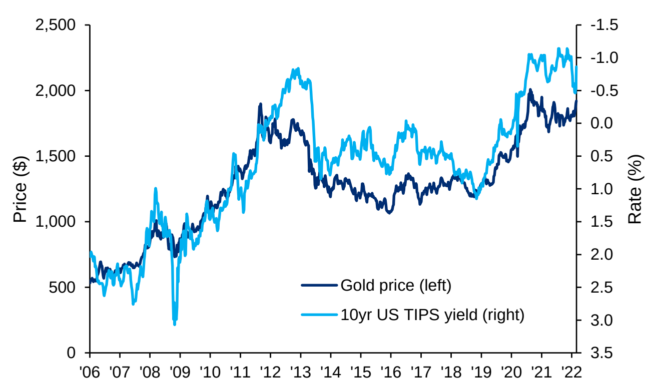

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Figure 17: US and European Defense Spending

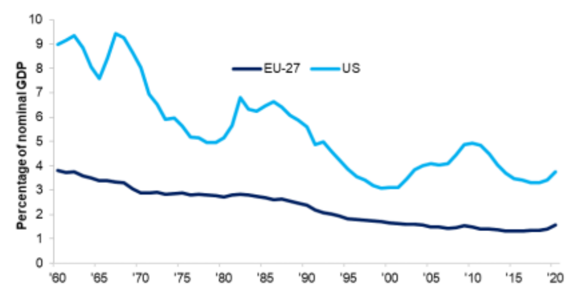
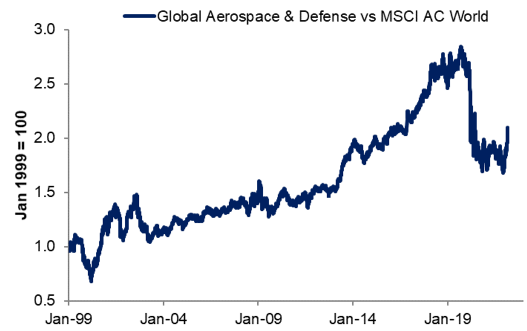


Figure 18: Global Aerospace/Defense relative performance



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Asian Markets in Between Geopolitics and the Fed

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The Ukraine crisis is likely to substantially reduce Russia's ability to supply energy and other commodities to the world. This would likely keep inflation elevated for longer, while growth may slow down a bit faster. Meanwhile, the Fed tightens into a slowing economy, which may present risks to this two-year-old business cycle.

This backdrop calls for greater caution in investment portfolios. The Citi Global Investment Committee further moved towards a defensive positioning by reducing equities and adding to gold. Within equities, we cut Europe, Japan and SMID exposures, while adding to Global Natural Resources and US Oil Field Services.

In Asia ex-Japan, we did not make any changes, keeping the China equity overweight and the neutral position in the remaining markets. In this report, we look at how sensitive Asian markets are towards Russia and Ukraine, as well as towards broader energy and towards the Fed. Fortunately, most Asian policymakers have greater flexibility to deal with these exogenous factors. China, for example, is laying out plans for stimulus during its annual National People's Congress (NPC). We discuss these factors' impact on the region's FX, equity and bond markets.

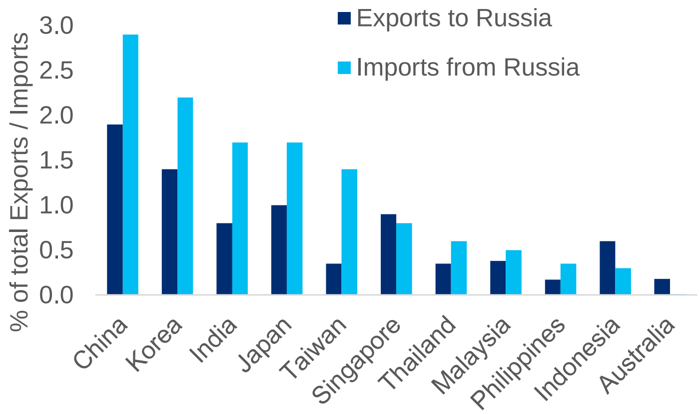
Asia's exposure to Russia and to Fuel Imports

In terms of direct export and financial linkages to Russia and Ukraine, Asia's exposure is relatively limited. The bigger influence lies with the impact of higher energy and commodity costs.

Asian economies' exports to Russia and Ukraine are mostly less than 2% of total exports (see Figure 19) and a still smaller share of GDP. China has the largest exports to Russia at nearly 2% of total exports, but these are unlikely to completely disappear. Korea, Japan and India are the next major economies with 1 – 1.5% exposure.

Imports from Russia are larger and concentrated in energy and commodities. Again, China, Korea, India and Japan rank highest (see figure 20). Aside from oil, other key commodities are wheat, corn, sunflower oil and fertilizer. For agricultural commodities, Indonesia, India, Korea and Malaysia have higher exposure.

Figure 19: Exposure to exports to Russia is small, while imports from Russia are larger, implying greater inflation and supply chain vulnerabilities



Source: Haver Analytics, 1 Mar 2022

Figure 20: Among banks that have disclosed financial exposure to Russia, the size is small relative to their assets or profits

	Exposure to Russia			% Group Total		
	Total Assets	Net Asset	Net Profit	Total Assets	Net Asset	Net Profit
China (in RMB mil)				In %		
ICBC	6,250	1,134	55	0.02	0.04	0.03
CCB	1,984	580	1	0.01	0.02	0.00
ABC	1,058	n.a.	(5)	0.00	n.a.	0.00
HK (in U$ mil)				In %		
HSBC	1,229	156	4	0.04	0.09	0.08
Taiwan (in NT$bn)				In %		
Fubon	21.2	n.a.	n.a.	0.38	n.a.	n.a.
Cathay	20.0	n.a.	n.a.	0.18	n.a.	n.a.
Korea (in US$m)				In %		
SFG	47.6	n.a.	n.a.	0.01	n.a.	n.a.

Source: Citi Research, Asia Economics - Economic Spillovers from the Russia-Ukraine Conflict, 1 Mar 2022

Citi Research recently highlighted that Ukraine accounts for 70%, 40% and 30% of global Neon, Krypton and Xeon, respectively. All three noble gasses are used in the semiconductor production process. Russia is also the world’s top source of palladium (37%), and the metal is used in sensor and memory chips. Russia is the second-largest producer of platinum, used for semiconductors and circuit boards. While chipmakers are holding above-norm levels of inventories, a protracted shock could affect these and their downstream industries. If materialized, these potential shortages could pressure growth in Taiwan, Korea, and Malaysia.

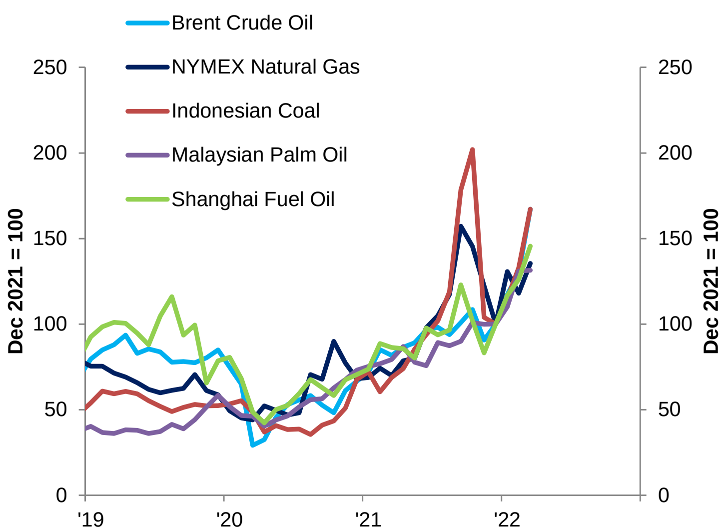
Financial linkages are more difficult to ascertain. Among the banks that report country-specific data, the Russia exposure is minimal compared to the banks’ balance sheets and profits (see figure 21). But there may be additional concerns over how sanctions are managed, and how indirect exposure through other financial institutions may affect the market.

The surge in energy prices will affect those economies that rely most on imports. It is no longer just crude oil and natural gas seeing the impact of suddenly reduced Russian supply. Demand for coal, for power generation, is surging as gas supply is tightening globally. Fuel oil and renewables are also seeing rising demand and prices.

We look at Asian economies’ net fuel imports as % of GDP to gauge the potential impact (Figure 22). Looking at just petro and products, Thailand is by far the most vulnerable, as it imports more than exports by nearly 6% of the GDP. Once coal and other fuels are added in, Korea is similarly vulnerable, followed by India, Philippines, Taiwan, HK and Japan, all at or above 3%.

China is relatively less exposed on both counts, especially since a quarter of China’s crude oil imports comes from Russia, paid for with CNY, at below market contract prices. Indonesia and Malaysia benefit the most from their exports of fuels like coal, crude oil and palm oil. Equities in these markets have done slightly better in recent days, but still saw non-commodity sectors fall notably.

Figure 21: Oil, gas, coal and other fuel prices are all surging



Source: Bloomberg, as of 4 Mar 2022

Figure 22: Net imports of petroleum & products and all fuels, as % of GDP

	Petroleum & Products	All Fuels
Thailand	5.9%	5.7%
Korea	2.9%	5.4%
India	3.0%	3.8%
Philippines	0.5%	3.2%
Taiwan	2.6%	3.2%
Hong Kong	2.9%	2.9%
Japan	1.5%	2.9%
APAC	1.8%	2.6%
Singapore	2.4%	2.4%
China	1.4%	2.0%
Indonesia	1.4%	1.4%
Malaysia	-0.6%	-2.0%

Source: Bloomberg, as of 4 Mar 2022

Asia's sensitivities to the Fed

Aside from geopolitics, the Fed's tightening campaign is just about to start in earnest. The Ukraine crisis has not really brought down near-term rate hike expectations because inflation is likely to shoot above 8.5% in the coming 2-3 months. In fact, expectations for May rate hike has risen to more than 25bps, while the March liftoff expectations have come down to below 25bps.

More importantly, longer-term rate expectations have come down substantially, to now expecting rate cuts by late 2023 and 2024 (see figure 23), implying a recession is expected within 2-3 years. This could turn the mid-cycle rate hike campaign into an end-of-cycle campaign, with vastly different market implications.

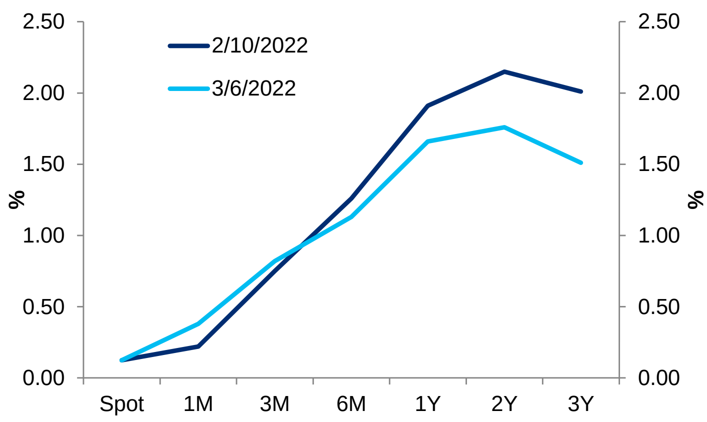
Figure 24 shows how US and APAC equity markets performed in the 12 months after the first rate hike over the past four Fed rate hike cycles. 2004 and 2015 were mid-cycle rate hikes and returns stayed positive well beyond liftoff. The 1994 and 1999 episodes were just ahead of the Asian financial crisis and the dot-com bubble burst, which led to poor returns.

In addition to rate hikes, the Fed also plans to shrink its balance sheet, or quantitative tightening (QT). There is only one precedent for QT, which was 4Q2018, when the Fed had already hiked seven times and reduced its balance sheet by over $300bn. The S&P 500 had a 20% correction from peak to bottom, which was recovered within half year in 2019.

Asian markets had a less severe reaction to QT, but still broadly negative. More developed markets tended to be more sensitive, such as Japan. But most markets also had quick recoveries in 1H 2019. The quick recovery is thanks to the fact that the business cycle did not end in 2018 and the Fed was able to quickly reverse policy because inflation was still subdued.

Now, inflation is clearly far above what the Fed can consider normal, and may not fall below 4% by the end of 2022. And the odds of recession in the coming one to two years is no longer negligible. As a result, the prospects of Asian equities may be moving from the mid-cycle scenario towards the late cycle one.

Figure 23: Markets now expect the Fed to move faster earlier, but may begin to cut rates by 2024, implying a recession is expected within 2-3 years



Source: Bloomberg, as of March 4, 2022

Figure 24: Equity market performance is generally positive after the first mid-cycle rate hike, but are very poor after late-cycle rate hikes

	12M after Fed liftoff		QT Experience	
	1994 & 1999	2004 & 2015	4Q2018	1H2019
S&P 500	3.2	9.4	(17.5)	21.7
AP x Japan	(13.2)	15.2	(10.2)	10.1
China	(39.1)	7.3	(12.6)	12.4
India	12.2	23.3	(4.8)	6.9
Korea	(6.3)	17.6	(12.9)	5.8
Singapore	(7.0)	10.3	(6.4)	10.8
Indonesia	(33.1)	37.8	5.9	3.7
Philippines	(30.1)	8.0	1.0	8.3
Malaysia	(9.9)	2.7	(8.3)	1.1
Thailand	(23.1)	13.8	(8.4)	6.8
Taiwan	0.0	11.4	(13.2)	10.7
Japan	(1.9)	0.5	(16.8)	4.6
Australia	(4.6)	15.3	(11.1)	20.6

Source: Haver Analytics, as of March 8, 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

Implications of China's NPC

One of the silver linings in Asia is that China is in the process of stimulating its economy. This stimulus started late 2021, but has been slow and difficult to have effect. The market has placed some expectations on the National People's Congress (NPC), which officially opened on March 5. The NPC produced a few highlights, such as a relatively high growth target, a signal for more reliance on monetary than fiscal policy, some desire to support property demand, and a curious absence of any plans for COVID.

Social and Economic Targets: On 5 March, Premier Li delivered the annual Government Work Report (GWR) to the NPC, and the report revealed the much anticipated key social and economic targets for 2022 (see figure 25Figure).

- The real GDP growth target is lowered by .5ppt from last year's above 6%+ to around 5.5%, which is higher than our 4.5% GDP growth forecast, and higher than the current market consensus at 5.1%. Considering that real GDP only grew by 4%y/y in 4Q 2021 and may have slowed further in 1Q, this target implies additional stimulus is needed beyond what is understood by the markets now.

- Budgetary deficit is cut from last year's 3.2% of GDP to 2.8%, owing to the need to maintain fiscal sustainability and a windfall from increased profit contribution by state-owned financial institutions and state-chartered monopoly companies. However, the quota of provincial government special bond issuance, mainly for infrastructure purposes, remains the same as last year, at CNY3.65trn. Tax and fee cuts this year will amount to CNY2.5trn, more than double the amount of tax and fee cuts in 2021 at CNY1.1trn.

- New job creation target and the surveyed urban unemployment are unchanged at 11mn and 5.5%, respectively. With a lower growth target and more than usual college graduates (over 10mn this year), the unemployment pressure will remain high this year.

- CPI inflation is targeted at 3%, unchanged from last year. The GWR would like to see the prudent monetary policy become more effective. The size of new loans should be larger than that of last year, which was close to CNY20trn. M2 and TSF (aggregate finance) are expected to grow at a rate consistent to China's normal GDP growth, which is targeted at around 8.5%.

Figure 25: Key Policy Targets set for 2022 at the National People's Congress

Key Policy Targets	2022	2021
Real GDP growth	~5.5%	Above 6%
Budgetary deficit	2.8%	3.2%
Tax and Fee cuts	CNY2.5trn	CNY1.1trn
Job creation	11mn	11mn
CPI inflation	3.0%	3.0%
Monetary targets	New loans > CNY20trn	None

Source: Government Work Report to the National Policy Congress, 2022

Key policy tasks and priorities are spelled out. The GWR lists nine policy priorities for implementations this year, ranging from stabilizing the economy, generating sufficient jobs, deepening reform, expanding domestic demand via coordinated regional development, maintaining food security, broadening economic reform and opening up, steadily implementing decarbonization, and to improving overall welfare of the masses.

While balanced and far-reaching, we see six areas worth particular highlighting for investors.

1. **Fiscal stimulus falls short of expectations.** The Central Economic Work Conference last December sounded more concerned on growth, stating that the Chinese economy is facing triple pressures: demand contraction, supply shocks, and weakening expectations. Given this assessment, the market had been expecting a stronger fiscal policy stimulus, with budgetary deficit to be as large as that of last year and provincial special bonds larger. However, both budgetary deficit (smaller than 2021) and special bond quota (same as 2021) have disappointed. While recognizing the need to stabilize the economy, maintaining fiscal sustainability and applying strict fiscal discipline are equally important. Against this background, the market may need to curb its expectations somewhat on infrastructure investment this year. By our estimate, the augmented fiscal deficit, which accounts for both on-budget and off-budget deficit spending in the IMF definition, will likely experience a modest contraction from last year.

2. **Policy support for SMEs and R&D**. The size of targeted fee and tax cut more than doubles the size of the last year. SMEs are getting further support, as micro sized firms are exempted from value added taxes (VAT) this year, though not permanently. SMEs with annual tax obligation at CNY1-3mn will be exempted by half this year. These policies will further reduce the operating costs of SMEs and help to prevent layoffs. In addition, R&D spending will enjoy full tax deduction for all types of firms, aiming to foster innovation and enhance competitiveness when external demand is expected to slow this year.

3. **Limited policy stimulus to boost consumption.** Before the NPC, the market had expected that the government may use consumption coupon to boost consumption. However, this policy got no mention in the GWR. To implement the 3rd child policy, some child-care expenses are included in personal tax deduction for the first three years after the birth of a child. Other than extending the policies to encourage EV consumption and to encourage consumers to exchange their old home appliances for new ones with some price subsidies, policy support to consumption remains limited. It is likely that consumption growth will continue the sluggish path this year. Thus, CPI inflation won't be a concern that will constrain the PBoC's policy easing.

4. **Intention to “protect property demand” and to “ensure financial stability”, which can be seen as a positive on the property sector**. While the mantra, “housing is for living not for speculation”, is repeated, the GWR also called to “protect people’s housing demands” and to “support the housing market to better meet homebuyers’ legitimate demand”. It also mentioned that a fund for ensuring financial stability will be established to defuse risks. Both the demand protection and the fund were new to this year’s GWR. As the property sector and its up and downstream industries can amount to a third of the economy, restoring growth without property would be exceedingly difficult.

5. **Decarbonization policy has become more sensible, and the policy excesses experienced last year may not be repeated.** The last year’s target of reducing energy consumption per unit of GDP by 3% is replaced with a “comprehensive assessment” of energy intensity and efficiency, though with limited detail. As long as the leadership recognizes “coal as the major energy source is one fundamental reality of the country” and avoid using a campaign style approach to achieve China’s decarbonization goals, the power shortages experienced last year is unlikely to be repeated.

6. **Finally, the GWR reiterates the government’s unwavering support to the private sector.** The report asks the various governments to understand the nature of capital and guide capital in its healthy development. Property rights will be respected and protected according to the laws. This reassurance suggests that tech regulation will be more rule-based and the government is unlikely to repeat the policy excesses on tech crackdown.

Implications for markets

The NPC sets the tone for policy but typically offers little in detail. The Ministries tend to follow up with implementation in coming months. We see three main points to highlight for the NPC’s potential impact on markets.

- **Fiscal policy is likely to be neutral compared to 2021. This means that more monetary efforts need to be made to support growth**, in order to get anywhere close to the target growth rate. The GWR mentioned that new loan growth would be at least as much as in 2021, we’ve already seen aggregate new credit expand by an extra CNY 1 trillion in January over the same period in 2021. Equity valuations are more sensitive to credit growth than to fiscal policy.

- Conspicuously missing are any indications for how COVID policy would evolve. The GWR mentioned the great achievements of “dynamic zero” policy in preventing deaths. But did not offer any forward-looking statements on the policy. Meanwhile, both domestic and foreign media are carrying stories about how Chinese authorities are studying alternatives to COVID-zero. **Easing COVID-zero policy, even if gradually with travel bubbles, would be the greatest stimulus policy, at time when supply side stimulus may have limited effectiveness.**

- Greater external uncertainty in terms of geopolitics and the related potential slowdown in external demand makes it more important to stabilize and strengthen the domestic economy.

Based on the above reading of the NPC, we remain committed to our views on markets this year.

- **Chinese equities remain attractive, as monetary and credit policy remains on an easing path.** The aggregate credit to GDP ratio turned more positive in Jan and is likely to rise further, providing support for valuations. Onshore A-shares are likely to remain the more favored part of Chinese equities, as they are more sensitive to domestic policy and less so to external uncertainties.

- **Government bond yields are likely to fall further.** The credit rebound and the surge in energy prices have caused some selloff in Chinese government bonds (CGB), lifting their yields by about 20bps across the curve. However, since additional stimulus is more likely to come from monetary than fiscal side and the economy remains under pressure near term, we suspect CGB yields may come back down.

- Credit spreads have widened substantially in the recent two months, as real estate woes have not been contained yet. Meanwhile, tech earnings disappointments have weighed further on investment grade credit. These would need to wait for a stronger policy for real estate and improvements in consumer demand. We believe more policy follow-up is likely on these fronts in coming months after the NPC is completed.

- The CNY has become a safe haven in Asia amid the Ukraine crisis, which may remain the case in the near term. However, we remain concerned about the potential shrinking trade surplus due to slower external demand and higher commodity import prices. The disappearing carry has reached unusual levels. And the potential reopening may resume tourism outflows of CNY that had effectively been shut down for two years.

Ukraine/Russia: How much of a downside risk for Europe in 2022?

Guillaume Menuet, Head – EMEA Investment

Judiyah Amirthanathar, EMEA Investment Strategy

- Deteriorating situation in Ukraine, sentiment surveys beginning to react, soaring energy prices and financial markets taking a turn for the worse: the picture looks much more challenging for Europe.
- We adjust our two scenarios to the reality on the ground which is that of a full-scale conflict (invasion to take control of Kyiv). In our first scenario, sanctions would still likely be ratcheted up, but imports of Russian commodities continue. In our second scenario, we envisage additional meaningful restrictions/sanctions perhaps including commodities imports, while Russia could decide to retaliate to greater military involvement of the west in the defense of Ukraine.
- Europe coming closer, focusing on solidarity and unity of purpose. The European Commission is mulling a new energy strategy and another year of suspension of the fiscal rules. The upcoming EU Versailles summit 10/11 March could see some agreement on more burden-sharing, perhaps through the issuance of additional joint debt and will move Ukraine's EU application one step forward, along with those of Georgia and Moldova.
- **Cutting European equity exposure:** we have reduced our allocation to European equities ex-UK/Swiss by 2% to a modest underweight of 1%, with the exception of commodities producers (overweight in our global thematic allocation). We have also reduced the UK and Switzerland by 0.5% each to neutral and -0.1%, respectively.

Deteriorating situation on the ground. Almost two weeks have passed since the invasion of Ukraine by Russian troops. While news from besieged cities point to a rapidly worsening situation for the population and maps suggest a slow but steady advance of the Russian army, there have been no real economic indicators to gauge the extent of the likely hit to confidence that is expected to unfold in Europe given the surge in energy prices and the impact on economic activity from likely more distortions to global supply chains.

Sentiment surveys beginning to react. One tentative piece of evidence came from the final composite PMI survey on 3 March which showed a 0.3-point downward revision in the final composite PMI output index to 55.5 following the inclusion of new data collected between 18-23 February representing 20% of the sample. This would suggest that on average, the output index was 1.8 points lower in the final six days of the survey period, reflecting much higher uncertainty and falling optimism. Given the probability of an escalation in worries, we estimate that the risk of a contraction in economic activity in March will be high. On Monday, the Sentix survey, which assesses German investors' confidence for the euro zone, fell to a 16-month low of -7 in March from 16.6 in February, while 6-month ahead expectations saw their largest monthly drop on record, worth 35 points to -20.8, its lowest level since Aug-12.

Financial markets have taken a turn for the worse in Europe. Since 22 February, the STOXX Europe 600 Index has fallen by almost 12%. The fixed income market has been very volatile also, with 2Y bund yields falling by around 23 basis point to -0.64% and the 10Y falling by nearly 15bps to -0.15%, resulting in a bullish steepening of the 2-10 curve to around 70bps, its highest level since Mar-19.

Financial conditions have tightened significantly and now stand at their least favorable level since 4Q-20, while the ECB's composite indicator of systemic stress has also risen to its highest level since 1 June 2020. The euro trade-weighted exchange rate has also weakened considerably in the last month and is almost 7% lower than its recent peak of December 2020. Despite being close to its highest level since the early summer of 2020 at around 160 basis points, the 10-year spread between the Italian BTP and the German Bund to sovereign bond spreads has come off recent highs.

DOWNSIDE SCENARIOS FOR GDP GROWTH IN EUROPE

It is hard to see a constructive scenario for euro area real GDP growth in the coming months, partly because we fear that many of the sanctions, restrictions, embargoes and/or boycotts might stay in place for as long as Russia is involved in its attempt to subjugate Ukraine. We worry that Russian President Vladimir Putin will probably have to escalate its military efforts to secure some of his objectives and that will also prompt financial retaliation by western democracies.

The European Central Bank's Governing Council meeting on Wednesday and Thursday this week will have to parse through the latest information and base its judgement about the appropriateness of the monetary policy stance in light of likely significant changes to ECB staff projections, which chief economist Philip Lane assured would take into account the invasion of Ukraine. As a reminder (see figure 26), the December Eurosystem staff macroeconomic projections showed that economic growth was expected to remain strong over the next three years, despite some headwinds in the near term. Compared to September, the expected 2022 GDP growth rate was lowered to 4.2% from 4.6%, while the 2023 GDP forecast was raised from 2.1% to 2.9%. For inflation, there was a substantial upward revision to the trajectory in 2022 (+1.5 percentage points [pp] to 3.2%) and in 2023 (+0.3pp to 1.8%), while the first 2024 forecast was estimated to be close to the 2% medium-term target.

Figure 26 – Growth and inflation projections for the euro area (annual percentage changes)

	December 2021					September 2021		
	2020	2021	2022	2023	2024	2021	2022	2023
Real GDP	-6.5	5.1	4.2	2.9	1.6	5.0	4.6	2.1
HICP	0.3	2.6	3.2	1.8	1.8	2.2	1.7	1.5

Notes: Real GDP figures refer to seasonally and working day-adjusted data. Historical data may differ from the latest Eurostat publications due to data releases after the cut-off date for the projections. Sources: European Central and Office of the Chief Investment Strategist, 23 Feb 2022. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

Downside risks already on the radar– In its monetary policy statement dated 3 February, the Governing Council of the ECB had noted that "*geopolitical tensions have increased*" and that "*persistently high costs of energy could exert a stronger than expected drag on consumption and investment*". At the same time, private consumption is expected to remain the key driver of economic growth, thanks to a rebound in real disposable income, some unwinding of accumulated savings and a robust labor market with the jobless rate expected to be lower in coming years than at any time since the euro area was established in 1999.

Sensitivity analysis suggests limited additional downside risks – In each of its macroeconomic forecast rounds, the ECB publishes a sensitivity analysis, looking at alternative scenarios for important variables, such as the euro trade-weighted exchange rate and oil prices which can have a large impact on the trajectory of inflation and GDP, to help analyze the risks around the baseline. As shown on figure 27, we are interested in the second path implying an increase in the oil price to around 32% above the baseline assumption for 2024. This path would have a very small downward impact on real GDP growth and a somewhat stronger upward impact on HICP inflation in 2022-24. In light of the surge in oil prices however, we fear that there might be some non-linearities in the relationship and that the scale of the moves in commodity prices might have augmented the likely size of the impacts.

Figure 27 – Sensitivity analysis suggests limited negative impact of higher oil price

	Path 1: 25th percentile of the option-implied neutral densities				Path 2: 75th percentile of the option-implied neutral densities				Path 3: constant oil price			
	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
Oil prices (USD per barrel)	71.2	59.6	47.1	41.4	72.0	87.9	90.0	91.3	71.9	83.1	83.1	83.1
Oil prices (percentage deviation from baseline levels)	-0.8	-23.1	-34.9	-40.3	0.3	13.4	24.5	31.7	0.2	7.2	14.9	19.8
(deviations from baseline growth rates, percentage points)												
Real GDP growth	0.0	0.1	0.2	0.1	0.0	-0.1	-0.1	-0.1	0.0	0.0	-0.1	-0.1
HICP inflation	0.0	-0.7	-0.6	-0.3	0.0	0.4	0.5	0.3	0.0	0.2	0.3	0.3

Notes: The 25th and 75th percentiles refer to the option-implied neutral densities for the oil price as at 25 November 2021. The constant oil price takes the value as at the same date. The macroeconomic impacts are reported as averages from several staff macroeconomic models. Sources: European Central Bank, and Office of the Chief Investment Strategist, 23 Feb 2022. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

How does the ECB react? The clear deterioration in the geopolitical situation will undoubtedly increase uncertainty about the euro area and the broader EU economic outlook, in particularly depending on what happens to oil and gas prices. ECB chief economist Philip Lane noted recently that geopolitical tensions are currently a “very significant risk factor, particularly for Europe”.

We would argue that the ECB will probably look through a fresh spike in energy prices triggered by a deterioration in the geopolitical situation in Ukraine. In the event of a further meaningful negative market reaction and a further increase in systemic stress, we would expect the ECB to provide additional liquidity in the form of swap lines, especially if there were to be an increase in the demand for dollars.

Irrespective of the likely increase in headline inflation prints in coming months as a probable consequence of higher energy prices, higher uncertainty will likely require that the ECB retains some optionality with respect to change in its monetary policy stance. To be sure, we doubt that the ECB would rush into signaling an imminent end of asset purchases. We continue to think that caution will prevail and any earlier-than-expected tapering in net asset purchases would be conditional on the maintenance of supportive financing conditions.

Updated scenarios – We present two scenarios, ranked in terms of their likely increased market and economic impact. The rising degree of seriousness is based on the premise that each incremental step will most likely trigger an escalation in sanctions, which in turn will likely translate in a higher degree of severity for market participants, most likely implying in the short term greater scope of downside moves in equities while likely seeing some flight to safety in sovereign debt markets.

1. **Our baseline is now a full-scale conflict** (invasion to take control of Kiev) but no material changes in energy supply – In this scenario, we think that the ECB would likely look through a spike in oil and energy prices and not change the timing of its expected first move in policy rates given the likely transitory nature of the supply-driven increase in energy prices. With GDP unlikely to be affected much (perhaps a 1 percentage point cut to 2022 GDP growth to 3%), the output gap projections would probably be largely similar, implying a broadly unchanged trajectory for core inflation. As a result, we think that the ECB would likely pay more attention to what is happening

to economic sentiment and would probably exercise its bias for cautious and gradualism given growing signs of concerns about the pace of economic activity, which would translate into lower household expenditure and/or investment spending.

2. **Import ban on Russian energy and/or commodities**, or suspension of energy supplies and/or commodities by Russia to Europe in retaliation for additional rounds of sanctions and/or greater military involvement in the defense of Ukraine perceived as a threat to Russia's security – This would likely translate into another material fall for European equities. This would likely require a noticeable cut to GDP growth forecasts, likely to include the possibility of negative GDP prints in 2Q-22 and maybe 3Q-22 (perhaps lowering the 2022 GDP baseline by as much as 2pp to 2%). In such an environment, we would expect the ECB to respond to an increase in systemic risk by providing more liquidity, perhaps adding to net asset purchases and most likely delaying the start of any tightening cycle.

Europe's high dependence on energy and raw material imports from Russia

The proximity between Russia and the euro area means that both are each other's largest trading partners. Russia sends around 30% of its merchandise exports to the euro area, while the euro area is the source of around 27% of Russia's imports (see figure 28). This interdependency works as follows: Russia exports mainly commodities to the euro area which sells a lot of capital and consumer goods to Russia. As a share of GDP, Russia's largest merchandise trade surplus is with the euro area (3.5% of its GDP) compared to the UK's 1.5% and close to zero with the US. As illustrated on figure 29, the EU-27 would struggle to replace Russian gas as a source of energy. Russia would benefit from higher prices, suggesting that deliveries of gas and petroleum products are likely to continue, at least for the foreseeable future.

Figure 28: Russia Merchandise Trade (12-month to Oct-21)

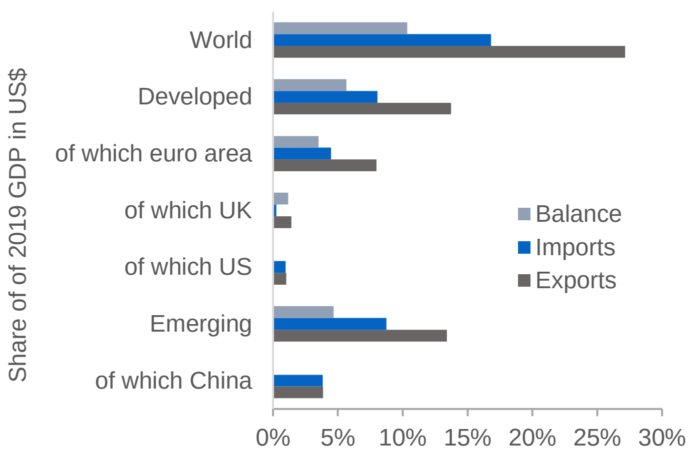
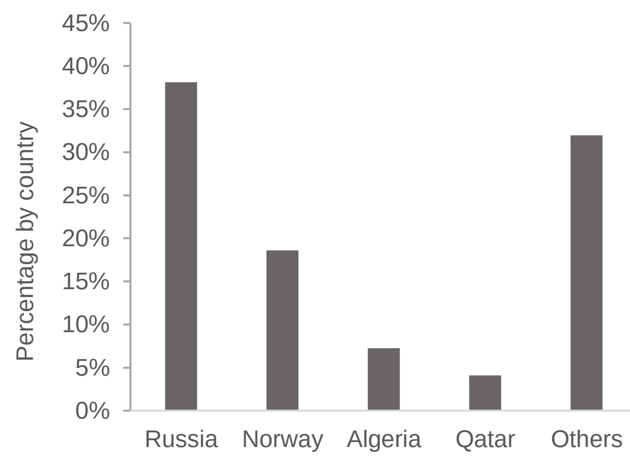


Figure 29: EU-27 Natural gas imports in 2020



Sources: European Central Bank, and Office of the Chief Investment Strategist, 23 Feb 2022

European Commission mulling new energy strategy and another year of suspending of fiscal rules. While the EU is planning to wean itself from importing Russian gas by building up its renewable energy capacity and diversify its gas supply according to a leaked draft of the EU's communication on energy prices, the European Commission is also preparing to extend by another year the re-introduction of EU fiscal rules. One of the arguments being put forward by some member states is that the emergence of a new security infrastructure requiring significant additional expenditure would unlikely be compatible with the current framework, while every country with significant exposure to Russia is willing to protect itself from the impact of sanctions on commodity and in particular energy prices, as well as more disruptions to supply chains. There will also need to be additional spending to alleviate the possible large influx of Ukrainian refugees.

EU Versailles summit 10/11 March: time for more burden-sharing? France is lobbying hard for the creation of a new European financing instrument for investment in energy and food security as well as defense in response to Russia's actions in Ukraine and the major challenge it poses to Europe's sovereignty. More efforts are being make ahead of the 10/11 informal EU summit in Versailles, France, which could turn out to be a major event for Europe's response to the Russia/Ukraine conflict, including the possibility of further restrictions on trade and finance. The aim of the proposal would be to concentrate fiscal support on sectors most affected by the sanctions, as well as trying to offset some of the increase in energy and commodity prices more broadly.

The proposal for a "European Autonomy and Resilience" plan (rumored to be around €100bn) would rest on three pillars: 1) the suspension of the budgetary rules for at least another year to allow governments to continue with fiscal measures to offset much higher energy prices, including 2023; 2) extra spending related to the current situation, including the management of the refugee crisis; and 3) a new common investment vehicle to financing necessary additional investments focused on energy, defense and agriculture according to France's Europe Minister Beaune.

Long-term consequences? One likely outcome of heightened security concerns is likely to be that Europe could move more rapidly towards adopting a common defense strategy (one of Macron's pet projects if re-elected) while NATO could also see more countries wanting to join. Defense spending will probably rise further in coming years beyond the current (and not often achieved) commitment of at least 2% of GDP. We would also expect that much higher oil and natural gas prices could quicken the transition away from fossil fuels towards renewables or nuclear power.

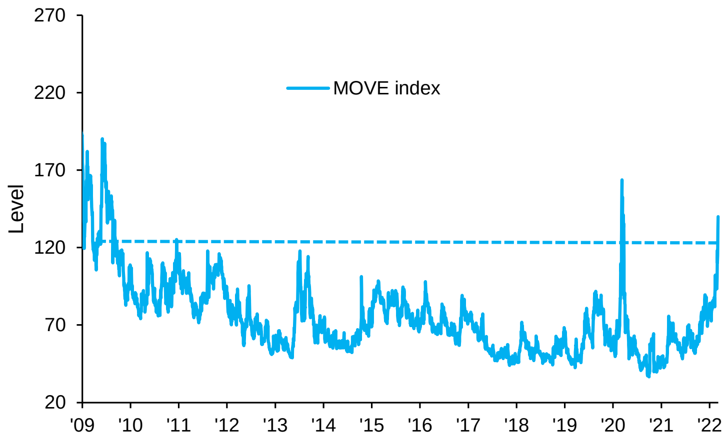
As a conclusion, we will likely lower our European GDP baseline as downside risks are accumulating, and there is a possibility of the more severe scenario if one assumes a possible further escalation of sanctions and could lead to either a ban on Russian imports and/or Russia deciding to restrict meaningfully its exports of commodities towards countries that have introduced sanctions. The higher the spike in energy prices the greater the drag on economic activity, even if we think that the flow of commodities out of Russia will continue, unless the West were to cut Russia off entirely from international payment systems. We suspect that in coming weeks central banks will likely be more cautious and would still be biased to intervene to keep financing conditions supportive to protect the post-pandemic recovery.

Dollar Demand Driving Early Warnings of Credit Cracking

Joseph Kaplan, – Fixed Income Strategy

Since late last year, US rates markets have been whipsawed around by headlines surrounding inflation, a hawkish Fed pivot, and now conflict in Russia/Ukraine. For example, 10yr US Treasury yields have risen from 1.15% in August of 2021 to a high of 2.05% by mid-February on soaring inflation fears. Since then, rates fell sharply as investors fled risk-sensitive assets and into safe-haven USD bonds. This has sent the 10yr US Treasury yield back down to a low of 1.65% before settling in around 1.85% at current levels. The swings in US Treasury yields on day-to-day headlines also drove bond market volatility index (MOVE index) to exceed levels seen even during the European Crisis of 2011/2012, the Commodity Recession of 2016, and the 2018 "overtightening" by the Fed (see figure 30).

Figure 30 – US Treasury volatility index (MOVE index)



Source: Bloomberg as of March 8, 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

Most recently, sanctions on Russia are pushing banks to hoard cash. At the same time, money market fund investors are waiting on the Fed to raise interest rates next month before they deploy cash. While not a liquidity crisis quite yet, the strong demand for USD is beginning to cause some funding stress in short-term rates markets. There may also be stress in commodity funding markets, as volatile prices prompt cash margin calls.

The spread between The London Inter-Bank Offered Rate and the Overnight Indexed Swap, broadly referred to as the LIBOR-OIS spread and as one of the key barometers that market participants look at the gauge stress in the financial system has risen from 5bps at the beginning of the year to 26bps. This is still below the wides we saw during the peak of COVID in 2020, and not quite at the 40-60bps it averaged during the 2017-2019 tightening (see figure 31).

At the same time, with primary dealers and other market participants moving away from the use of LIBOR and shifting to SOFR (Secured Overnight Financing Rate), transaction volumes in LIBOR-linked instruments are not at the same level in previous years. Some of the largest stress at the moment can be witnessed in the US Commercial Paper (CP) market. Yields on 3-month Finance CP have eclipsed 1.15%, and are at the largest spread relative to 3-month US Treasury Bills seen since the Global Financial Crisis, excluding the 2020 COVID pandemic (see figure 32). Some of this yield rise is driven by the many money market investors waiting on the Fed to raise rates next week. At the same time, sanctions on Russia are impacting European banks most directly, and creating a global demand for dollar funding.

Figure 31: LIBOR-OIS spread

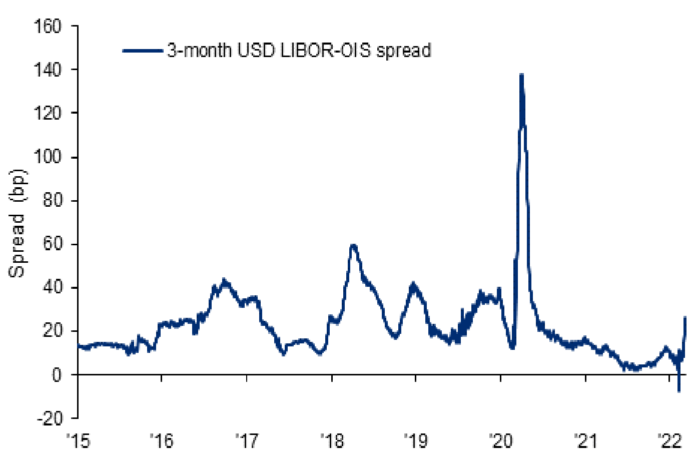
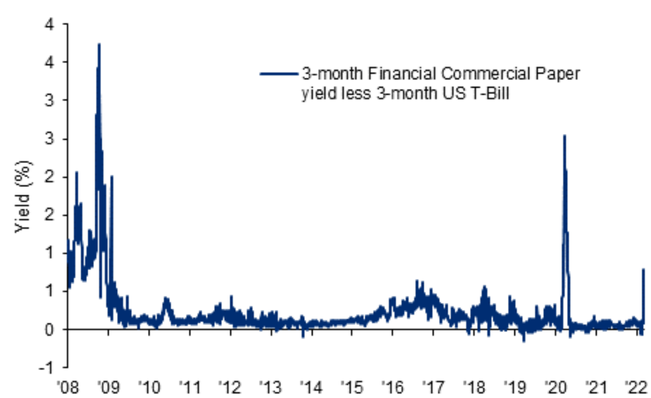


Figure 32: US Commercial Paper Yields less Treasury Bills



Source: Bloomberg as of March 8, 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.

US credit spread indices have moved wider, but the cheapening thus far appears driven by general market volatility and bond funds raising cash, not fundamental credit concerns. This is seen most acutely in the outperformance of CCC-rated bonds relative to more liquid BB-rated issuers YTD. In fact, broad US HY spreads are only first approaching 390bps now, still below the 400-500bps in averaged during the 2017-2019 Fed tightening cycle and far below the peaks witnessed in previous market corrections (see figure 33).

That said, what's different now vs 2017-2019 is the price of oil, and its impact on the large composition of US HY issuers within HY benchmark indices. For example, companies engaged in the energy industry make up roughly 14% in HY indices, with other commodity-linked industries such as chemicals and metals bringing this total up to almost 20%. During 2017-2019, Crude oil traded around $40-80/ barrel while other commodities more broadly were 40% cheaper than current levels. As such, with these industries not striving as they are with increased demand for their product, measuring the spreads during that period vs today makes for a less apples-to-apples comparison. As seen in figure 34, US HY energy spreads generally track the price of crude oil, and with crude oil quickly approaching all-time highs, US HY bond indices may remain more contained than in previous broader market corrections. At the margin, this may have a positive feedback loop is corporate issuers looking to raise capital at still borrower friendly levels.

Figure 33: US HY spread vs energy sector spread

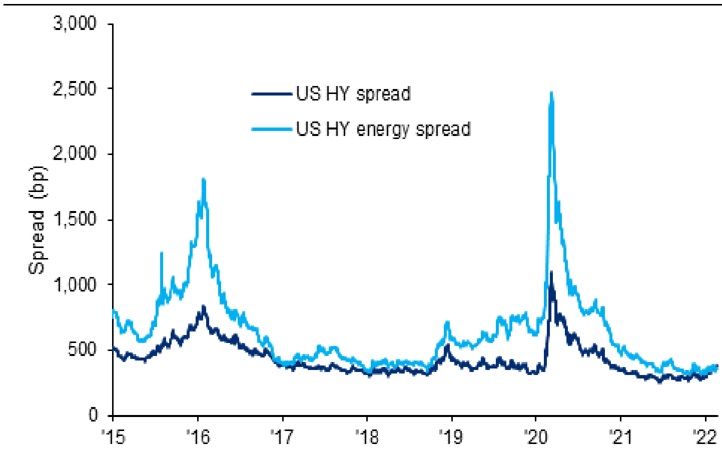
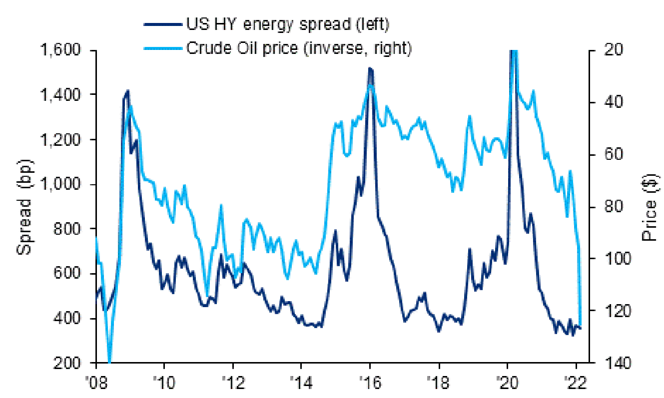


Figure 34: US HY energy spreads vs Crude Oil Price



Source: Bloomberg as of March 8, 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

Energy: From Worst to First

Joe Fiorica , Head – Equity Strategy

It's not too late to jump on the energy bandwagon. We believe the Russia-Ukraine conflict has changed the medium-term outlook for oil and energy. Prolonged sanctions on Russia and a flight of capital from the country will likely cripple Russia's ability to sustain its pre-war production levels. This loss of a key global energy supplier will likely lead to a longer-term premium in the oil price than had bene previously expected, even if prices moderate somewhat from current levels.

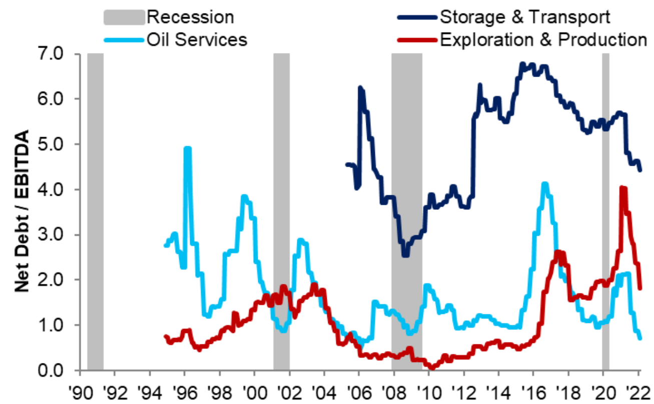
Even after a nearly 40% rally YTD, the US energy sector still trades at a P/E multiple of 13x expected 2022 earnings, a 31% discount to the S&P 500. While the sector faces long-term existential risks from clean energy transition, the scramble for energy supplies this past winter and the latest geopolitical crisis in Europe underscore how integral oil and gas are to today's global economy.

The sector has also significantly improved its financial standing since the oil bear market of 2014-16. US energy companies have undergone a significant de-leveraging campaign over the past 5 years, the most of any S&P 500 sector. This balance sheet improvement has been in many ways led by oil services, which now boast debt-to-EBITDA levels at their lowest levels since 2006. The energy sector pays a healthy dividend and is likely to deliver nearly double-digit free cash flow yields at current prices. While Oil services are a much more capital-intensive business, we still see upside in volume-oriented segments of the sector ahead of a potential ramp-up in global production to replace Russian oil and gas.

Figure 35: 5 Year change in S&P 500 leverage, by sector

S&P 500 Net Debt to EBITDA			
Sector	5 Yrs Ago	Today	Increase / Decrease in Leverage
Energy	2.95	1.27	-1.68
Comms Services	2.30	1.21	-1.09
Materials	2.14	1.35	-0.79
Consumer Disc.	2.18	1.75	-0.43
Consumer Stap.	1.69	1.67	-0.02
Real Estate	5.15	5.22	0.07
Health Care	1.30	1.36	0.06
Industrials	2.05	2.31	0.25
Utilities	4.50	5.28	0.78
Info Tech	-0.28	0.33	0.61

Figure 36: Energy sector leverage, by segment



Source: Bloomberg as of March 8, 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. Note: Shaded regions are recessions.

Play the likely pickup in non-Russian oil & gas supply via oil services. In the universe of upstream oil and gas exploration, typically exploration and production companies take on outright oil price risk, while contracting out much of the physical drilling machinery and labor to oil services companies, who are paid a fee for operating new wells.

The oil recession of 2014-16 taught oil and gas drillers some hard lessons. Most management teams have re-focused on capital discipline and a prioritization of shareholder returns over market share gains. During much of the rally in oil prices over the past year, many E&P names have been hesitant to invest in significant new supply, despite current price levels trading well above profitability breakevens. This dynamic of capex restraint has led to underperformance of oil services, which depend more on new rig buildout than higher oil prices. Looking forward, given a likely drop in Russian crude availability in the global open market, the potential replacement of that supply by US, Canadian, Latin American, and OPEC producers should benefit oil services who will facilitate that volume buildout. If prices stabilize as volume rises, we could see a change in market leadership from upstream producers to services in the coming months.

Oil services bears will point to risks around rising input costs for the group. The elevated price of metals (steel, aluminum, etc.) could potentially eat into margins for oil services who own much of the heavy equipment. Oil services also employ much of an oil rig's staff, who are likely demanding higher wages in a tight US labor market. That said, we expect higher quality services names to be able to pass on potentially rising costs to the E&P players, and an oil price well north of $100 should generate ample free cash flow for these firms even after accounting for somewhat higher costs.

Figure 37: WTI Crude price vs US rig count

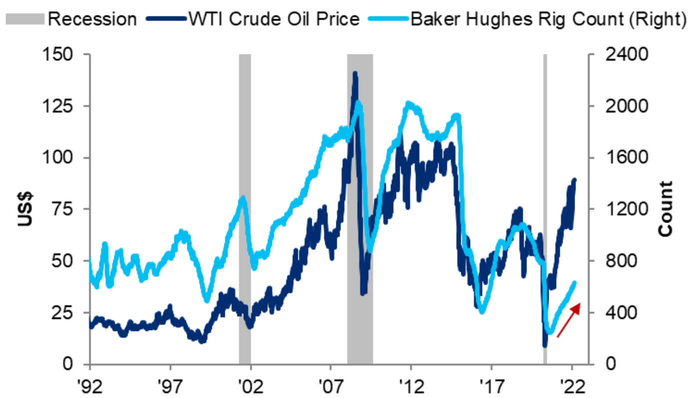
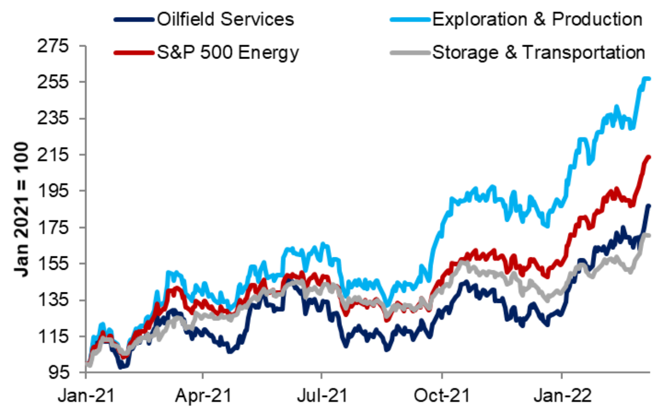


Figure 38: Upstream energy sector performance, by segment



Source: Bloomberg as of March 8, 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. Note: Shaded regions are recessions.

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 March 07, 2022 GIC meeting.

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

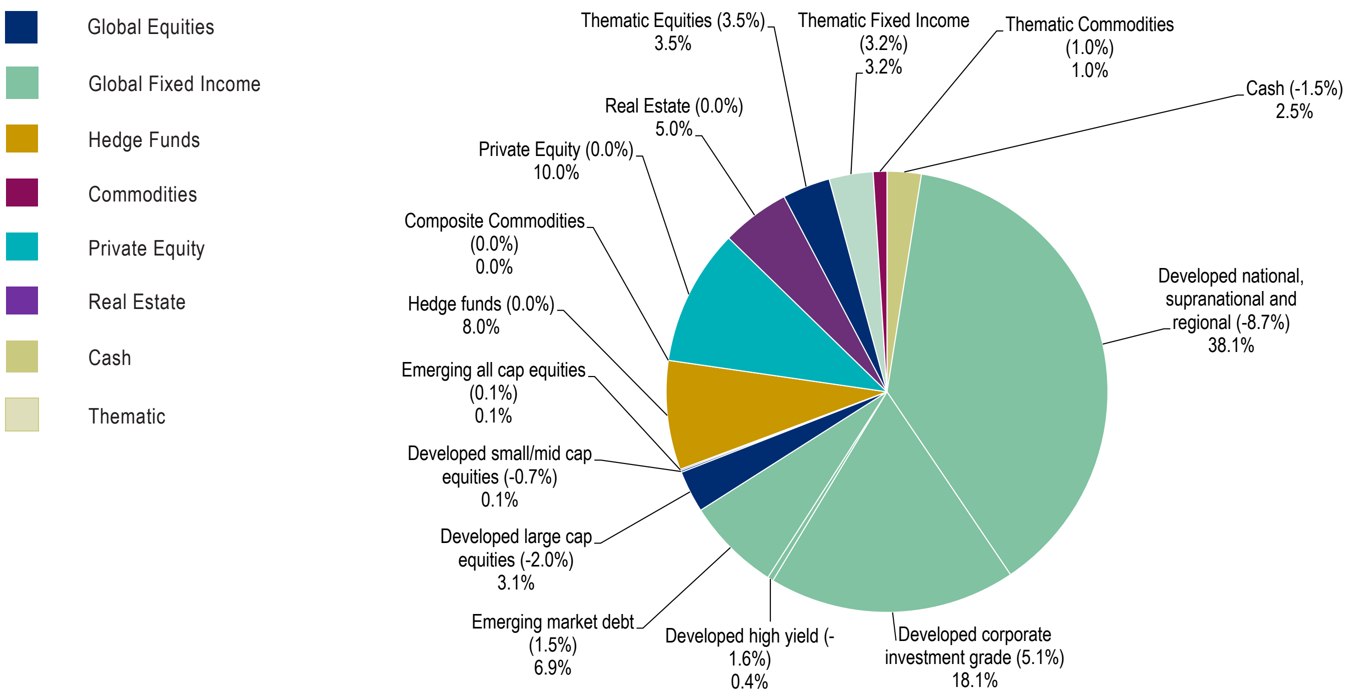
Risk Level 2 is designed for investors who emphasize capital preservation over return on investment, but who are willing to subject some portion of their principal to increased risk in order to generate a potentially greater rate of return on investment.

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	8.4	2.3
Long	2.6	2.6	0.0
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

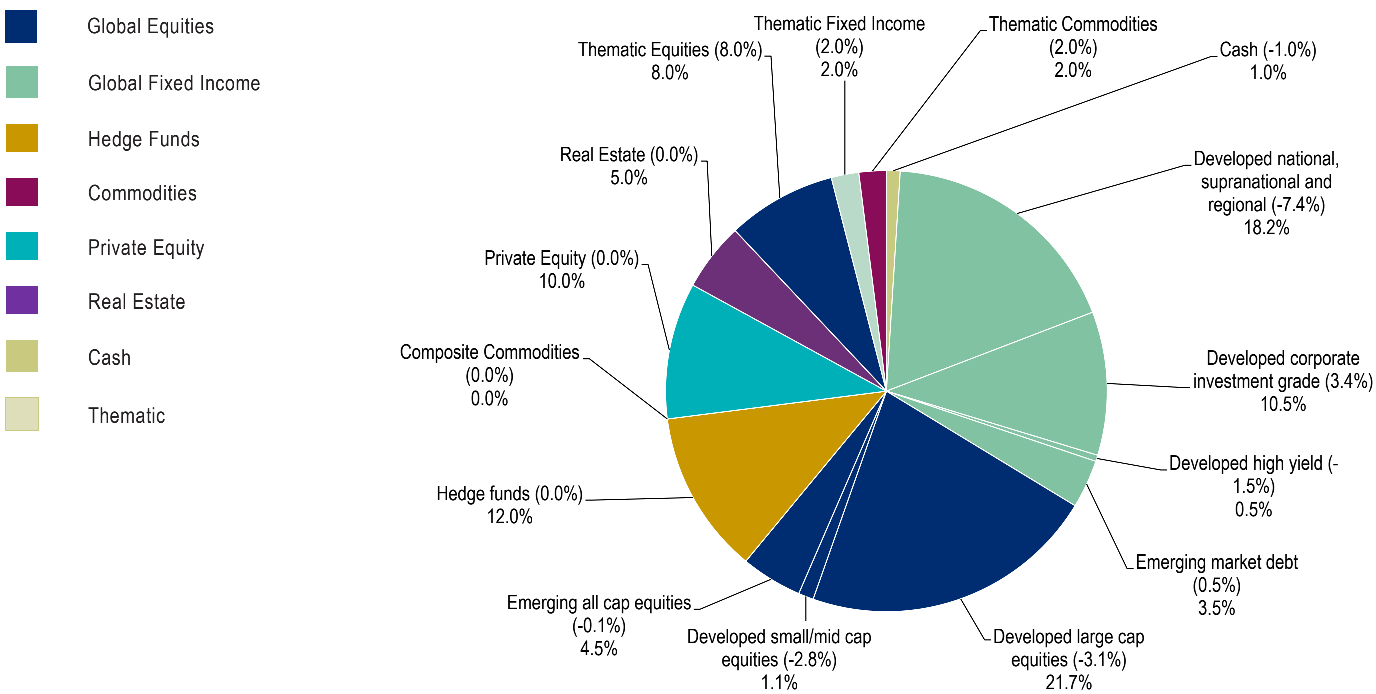
Risk Level 3 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. Risk Level 3 may be appropriate for investors willing to subject their portfolio to 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	10.7	2.6
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	1.4	0.0
Securitized	5.9	5.7	-0.3
Credit	4.7	8.3	3.6
Short	0.6	0.7	0.0
Intermediate	2.5	6.1	3.6
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

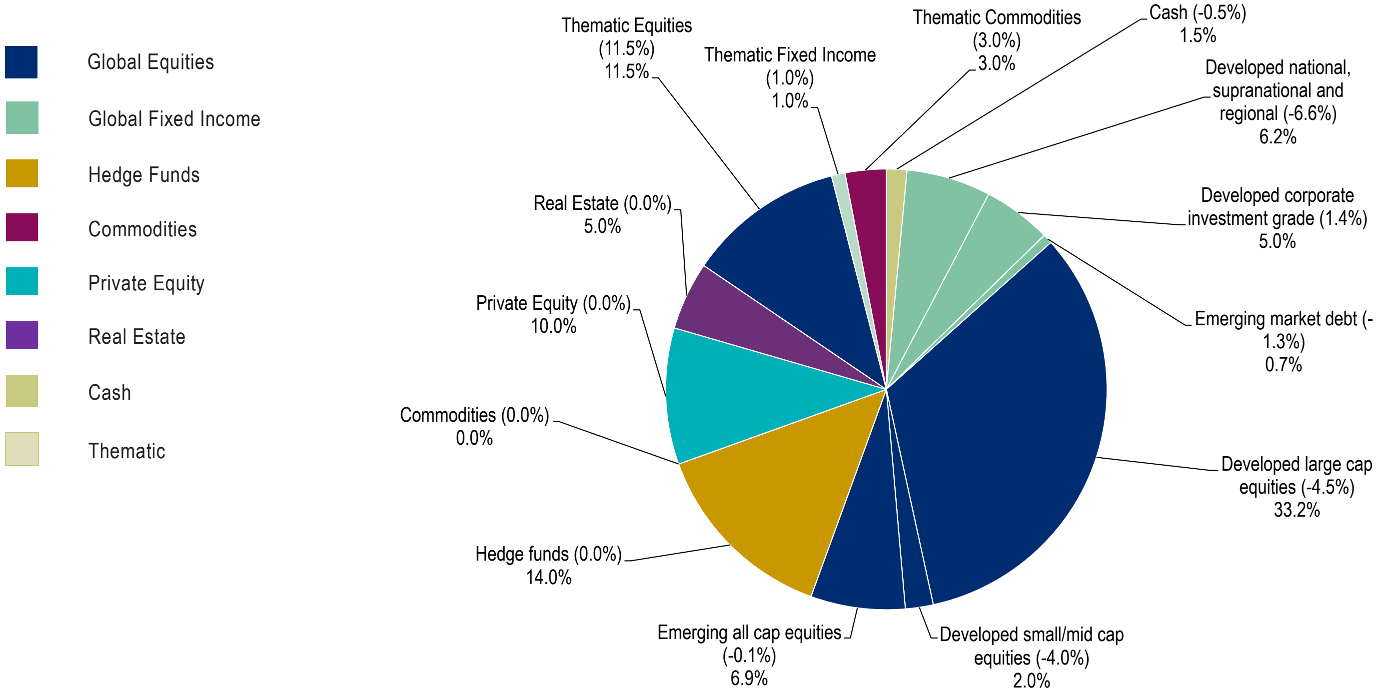
Risk Level 4 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. They are willing to subject a large portion of their portfolio to greater risk and market 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	5.6	1.6
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	0.7	-0.0
Securitized	3.0	0.4	-2.6
Credit	2.4	4.8	2.4
Short	0.3	0.0	-0.3
Intermediate	1.2	4.5	3.2
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

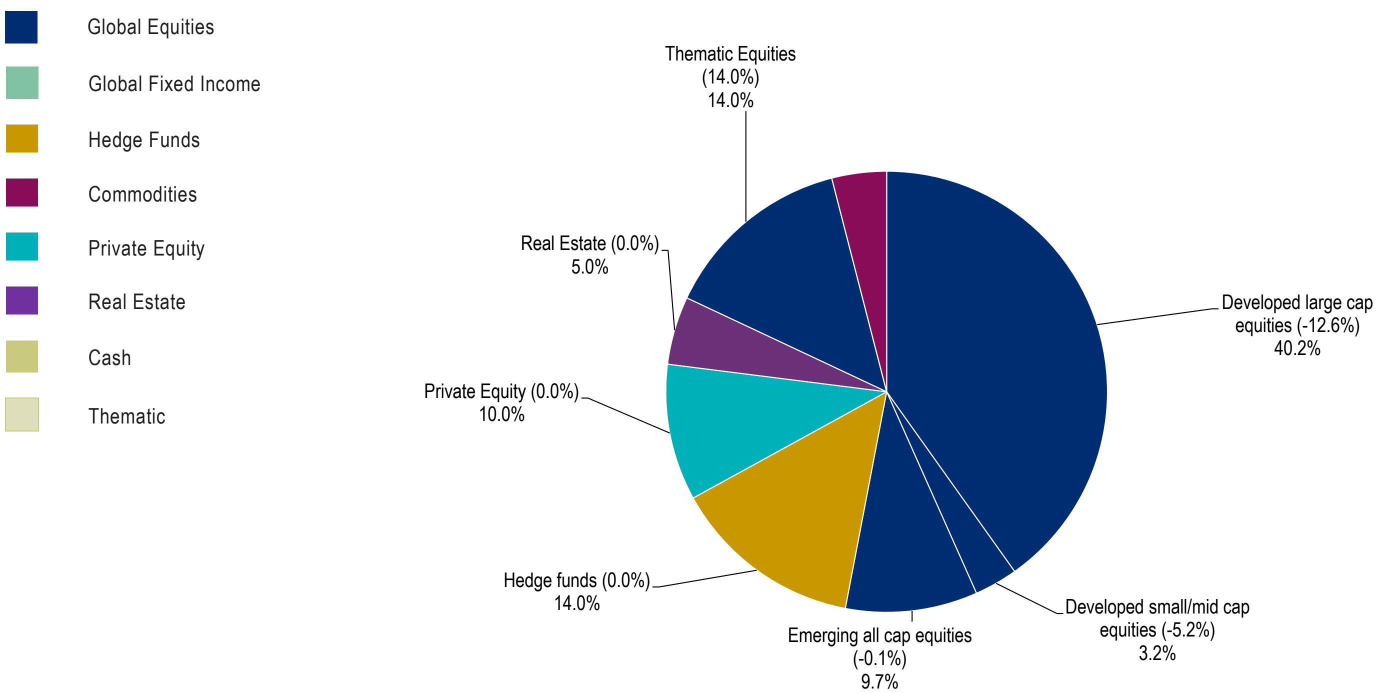
Risk Level 5 is designed for investors who emphasize return on investment. They are willing to subject their entire portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investments. Investors may have a preference for investments or trading strategies 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

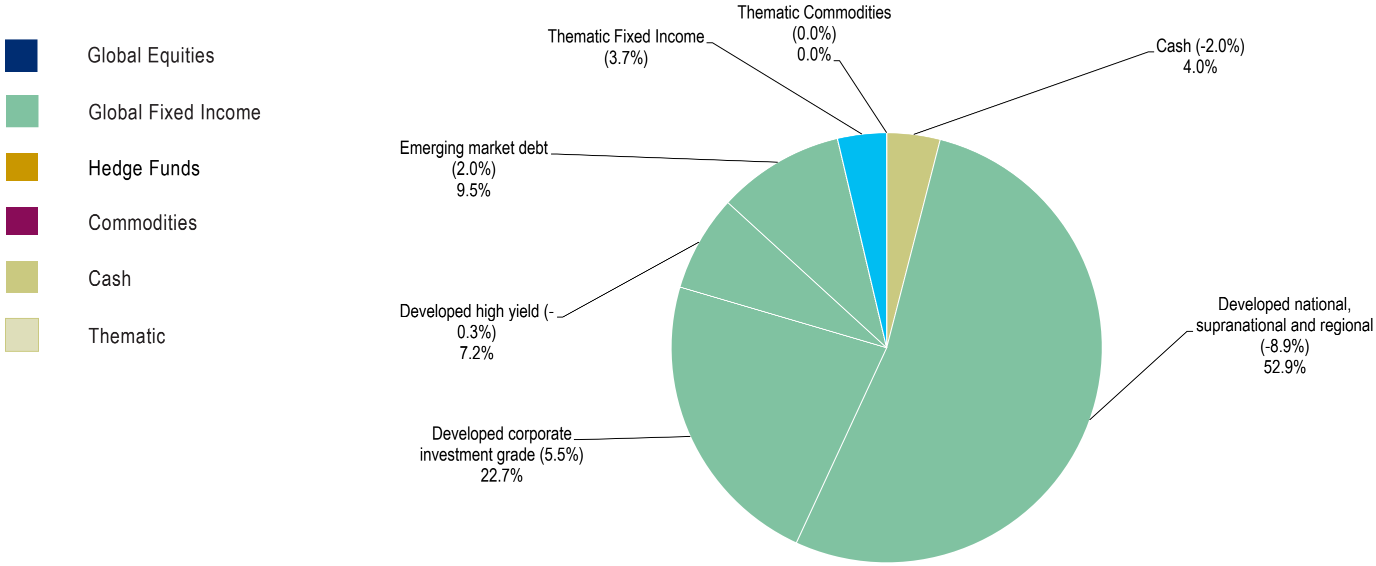
Risk Level 1 is designed for investors who have a preference for capital preservation and relative safety over the potential for a return on investment. These investors prefer to hold cash, time deposits and/or lower risk fixed income instruments.

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	9.1	1.0
Long	3.5	3.5	0.0
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

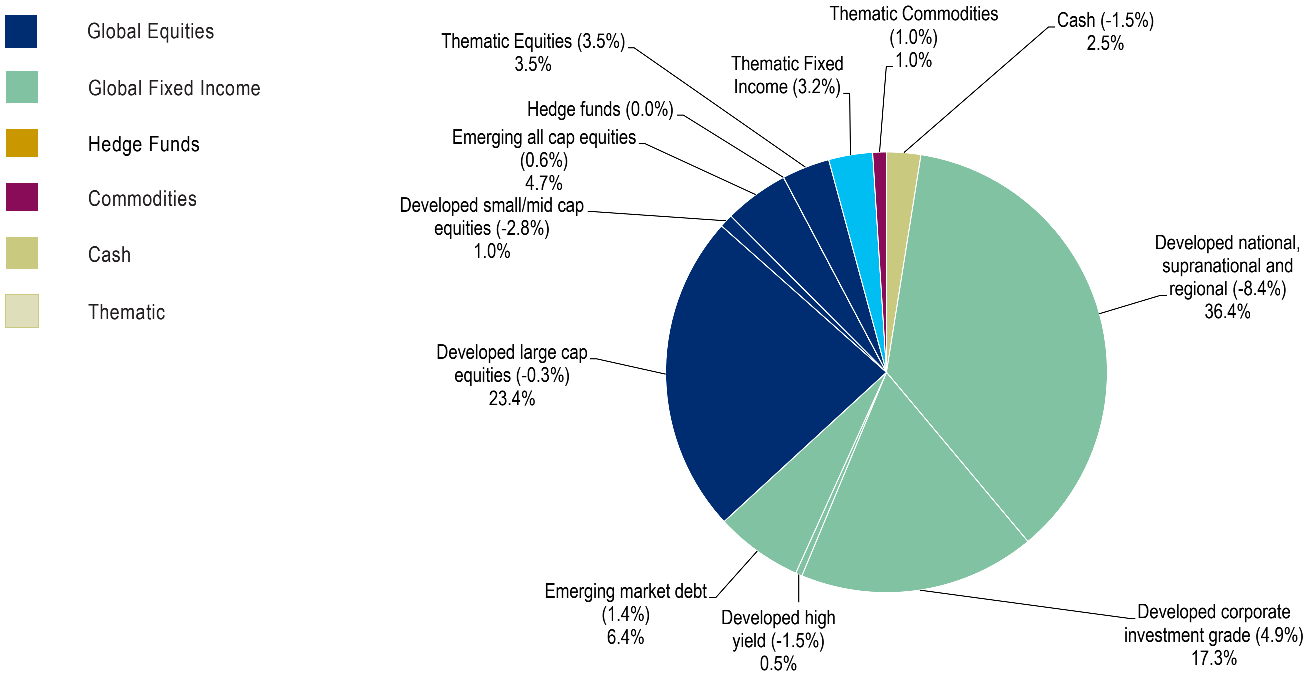
Risk Level 2 is designed for investors who emphasize capital preservation over return on investment, but who are willing to subject some portion of their principal to increased risk in order to generate a potentially greater rate of return on investment.

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	8.0	2.2
Long	2.5	2.5	0.0
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

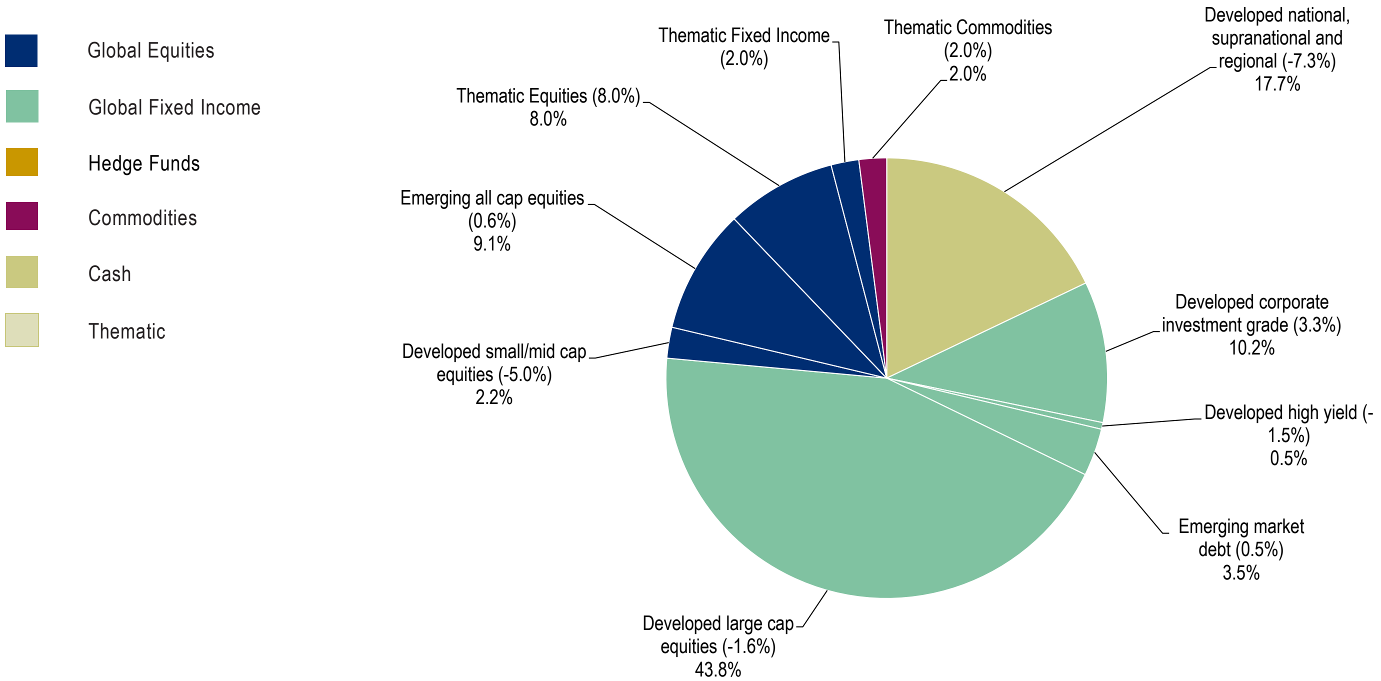
Risk Level 3 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. Risk Level 3 may be appropriate for investors willing to subject their portfolio to 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	10.4	2.5
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	1.4	0.0
Securitized	5.8	5.5	-0.3
Credit	4.6	8.1	3.5
Short	0.6	0.6	0.0
Intermediate	2.4	5.9	3.5
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

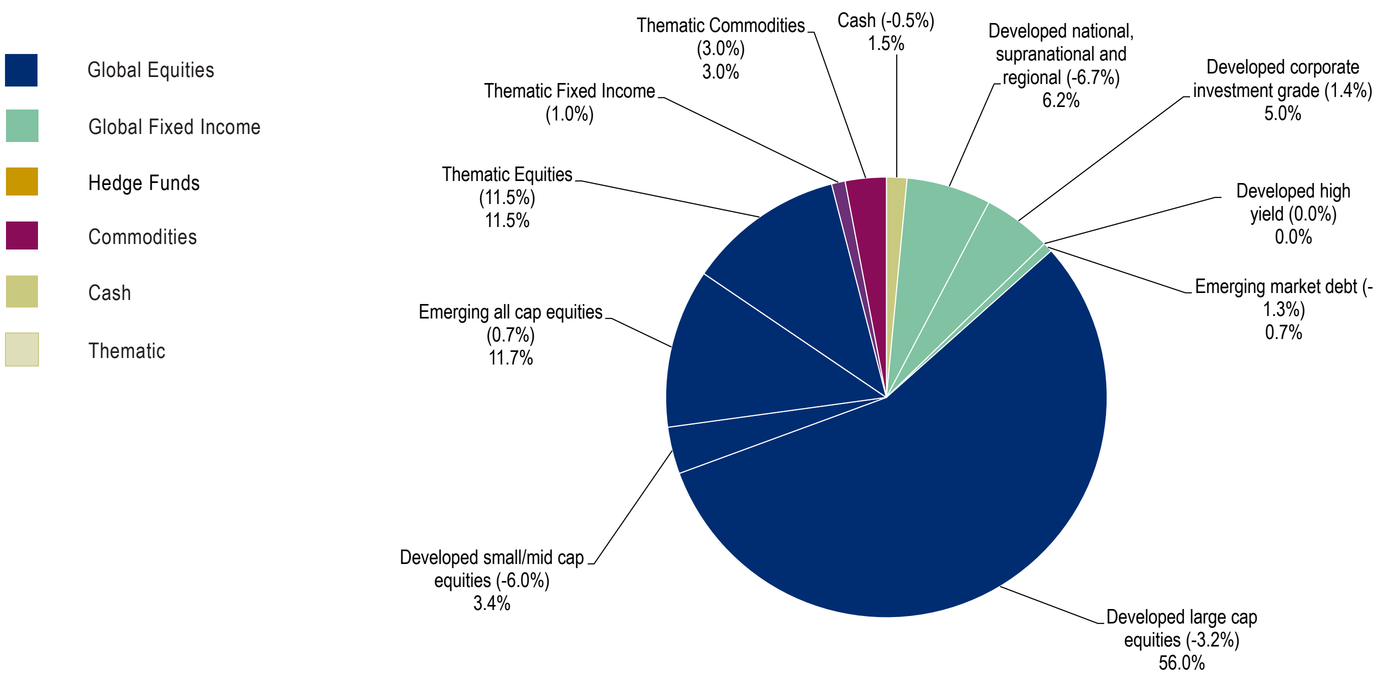
Risk Level 4 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. They are willing to subject a large portion of their portfolio to greater risk and market 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	5.6	1.6
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	0.7	-0.0
Securitized	3.0	0.4	-2.6
Credit	2.4	4.8	2.4
Short	0.3	0.0	-0.3
Intermediate	1.2	4.5	3.2
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

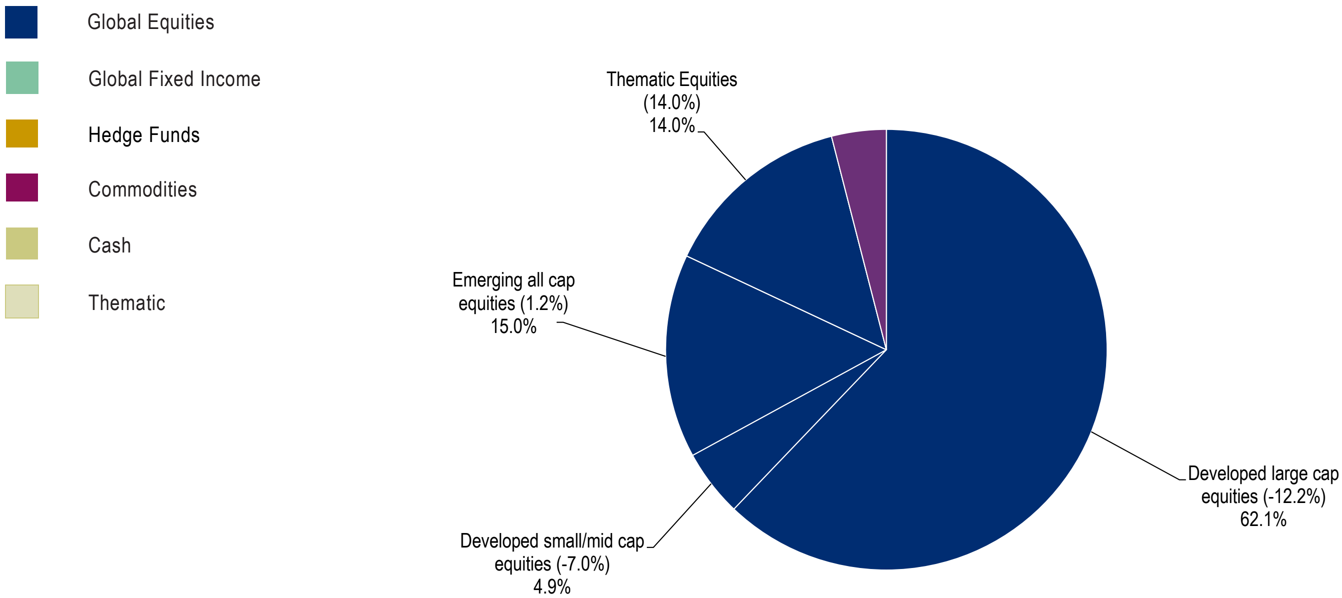
Risk Level 5 is designed for investors who emphasize return on investment. They are willing to subject their entire portfolio to greater risk and market value fluctuations in anticipation of a potentially greater return on investments. Investors may have a preference for investments or trading strategies 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.
COVID-Defensives	IT, Health Care, Communication Services, Consumer Staples, Utilities, Amazon.

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Bond rating equivalence

Alpha and/or numeric symbols used to give indications of relative credit quality. In the municipal market, these designations are published by the rating services. Internal ratings are also used by other market participants to indicate credit quality.

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

1 The ratings from Aa to Ca by Moody's may be modified by the addition of a 1, 2, or 3 to show relative standing within the category.
2 The ratings from AA to CC by Standard and Poor's and Fitch Ratings may be modified by the addition of a plus or a minus to show relative standing within the category.

(MLP's) - Energy Related MLPs May Exhibit High Volatility. While not historically very volatile, in certain market environments Energy Related MLPS may exhibit high volatility.

Changes in Regulatory or Tax Treatment of Energy Related MLPs. If the IRS changes the current tax treatment of the master limited partnerships included in the Basket of Energy Related MLPs thereby subjecting them to higher rates of taxation, or if other regulatory authorities enact regulations which negatively affect the ability of the master limited partnerships to generate income or distribute dividends to holders of common units, the return on the Notes, if any, could be dramatically reduced. Investment in a basket of Energy Related MLPs may expose the investor to concentration risk due to industry, geographical, political, and regulatory concentration.

Mortgage-backed securities ("MBS"), which include collateralized mortgage obligations ("CMOs"), also referred to as real estate mortgage investment conduits ("REMICs"), may not be suitable for all investors. There is the possibility of early return of principal due to mortgage prepayments, which can reduce expected yield and result in reinvestment risk. Conversely, return of principal may be slower than initial prepayment speed assumptions, extending the average life of the security up to its listed maturity date (also referred to as extension risk).

Additionally, the underlying collateral supporting non-Agency MBS may default on principal and interest payments. In certain cases, this could cause the income stream of the security to decline and result in loss of principal. Further, an insufficient level of credit support may result in a downgrade of a mortgage bond's credit rating and lead to a higher probability of principal loss and increased price volatility. Investments in subordinated MBS involve greater credit risk of default than the senior classes of the same issue. Default risk may be pronounced in cases where the MBS security is secured by, or evidencing an interest in, a relatively small or less diverse pool of underlying mortgage loans.

MBS are also sensitive to interest rate changes which can negatively impact the market value of the security. During times of heightened volatility, MBS can experience greater levels of illiquidity and larger price movements. Price volatility may also occur from other factors including, but not limited to, prepayments, future prepayment expectations, credit concerns, underlying collateral performance and technical changes in the market.

Alternative investments referenced in this report are speculative and entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in the fund, potential lack of diversification, absence of information regarding valuations and pricing, complex tax structures and delays in tax reporting, less regulation and higher fees than mutual funds and advisor risk.

Asset allocation does not assure a profit or protect against a loss in declining financial markets.

The indexes 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.

Past performance is no guarantee of future results.

International investing entails greater risk, as well as greater potential rewards compared to US investing. These risks include political and economic uncertainties of foreign countries as well as the risk of currency fluctuations. These risks are magnified in countries with emerging markets, since these countries may have relatively unstable governments and less established markets and economics.

Investing in smaller companies involves greater risks not associated with investing in more established companies, such as business risk, significant stock price fluctuations and illiquidity.

Factors affecting commodities generally, index components composed of futures contracts on nickel or copper, which are industrial metals, may be subject to a number of additional factors specific to industrial metals that might cause price volatility. These include changes in the level of industrial activity using industrial metals (including the availability of substitutes such as manmade or synthetic substitutes); disruptions in the supply chain, from mining to storage to smelting or refining; adjustments to inventory; variations in production costs, including storage, labor and energy costs; costs associated with regulatory compliance, including environmental regulations; and changes in industrial, government and consumer demand, both in individual consuming nations and internationally. Index components concentrated in futures contracts on agricultural products, including grains, may be subject to a number of additional factors specific to agricultural products that might cause price volatility. These include weather conditions, including floods, drought and freezing conditions; changes in government policies; planting decisions; and changes in demand for agricultural products, both with end users and as inputs into various industries.

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