NORTHERN TRUST

2023 OUTLOOK

A PIVOTAL YEAR

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2023 will likely be a turbulent year as inflation and monetary policy fears pivot to a weak global economy, but also to lower inflation and central bank pauses. We see downside risk from the fundamentals, but upside potential from better sentiment. We are neutral risk heading into the new year.

Central banks in the developed world have simultaneously hiked interest rates by roughly 2-4% each — at the fastest pace in the past 40 years. Such a move is a firm headwind to economic growth, and the full economic consequences of this massive tightening of financial conditions are still to come. Our base case is for Europe to slip into recession given its greater exposure to elevated energy prices, for the U.S. to slow down meaningfully and for emerging markets to remain troubled by China's struggles.

The combination of interest rate hikes and slower growth has started to push down inflation. And central banks are, by their own admission, close to levels where policy is considered tight. As the rate cycle nears an end, and as monetary policy uncertainty and inflation risk dissipate, investor sentiment might turn more positive. The labor market will be closely watched as evidence of inflation's ability to approach central bank targets. In light of these cross-currents, we have a neutral position in developed equities as downside earnings risk and a disappointing economy are balanced against a likely improvement in sentiment as conditions trough in 2023. We acknowledge the potential for a China "re-opening" trade to take hold, but see the process as uneven and muddied by other structural challenges. In the meantime, our overweight to natural resources should benefit from any improvement in China growth.

Northern Trust
Global Asset Allocation

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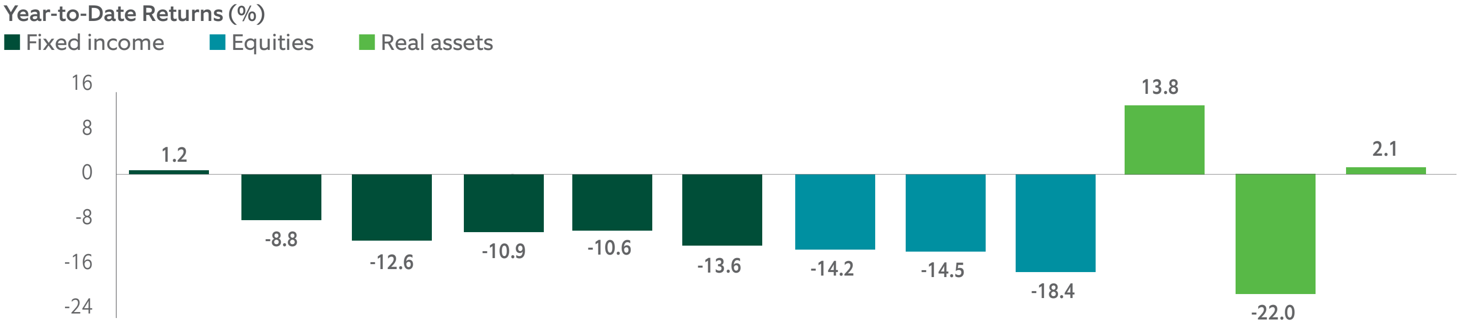
Published on December 13, 2022

EXHIBIT 1: FEW PLACES TO HIDE

It was a difficult year for stocks, and in atypical fashion bonds failed to provide much protection.

Year-to-Date Returns (%)



	RISK CONTROL				RISK ASSETS							
	FIXED INCOME						EQUITIES			REAL ASSETS		
	Cash	Municipal bonds	Inv. grade	TIPS	High yield	EM debt	U.S.	Dev. ex-U.S.	Emerging markets	Natural resources	Gbl. real estate	Gbl. listed infra.
YTD	1.2	-8.8	-12.6	-10.9	-10.6	-13.6	-14.2	-14.5	-18.4	13.8	-22.0	2.1
2021	0.0	1.5	-1.5	6.0	5.3	-8.7	26.1	12.9	0.1	25.2	23.3	11.9
5-year	1.2	1.4	0.2	2.5	2.5	-2.5	10.5	2.6	0.3	9.2	0.8	4.2

Source: Northern Trust Asset Management, Bloomberg. Year-to-date data through November 30, 2022. Five-year annualized data from November 30, 2017 to November 30, 2022. **Past performance is no guarantee of future results.** EM debt means emerging market debt and TIPS means Treasury inflation-protected securities. Returns are represented by indexes, please see last page for indexes used.

EXHIBIT 2: 2023 OUTLOOK BY ASSET CLASS

			TAA*	SAA**	Key Views
Risk Assets	EQUITIES	DEVELOPED MARKETS **Equal-weight**	40%	40%	Risks surrounding fundamentals are tilted to the downside given the extent of cumulative central bank tightening. Pockets of economic durability should limit a U.S. earnings slowdown, while monetary policy offers a bit more support elsewhere. Keeping us equal-weight is the potential for sentiment upside. From beaten down levels, sentiment has runway to improve — particularly in Europe where the valuation discount is steep.
Risk Assets	EQUITIES	EMERGING MARKETS **4% underweight**	2%	6%	While China's reopening incrementally improves the outlook for emerging market (EM) equities, the reopening process is likely to be bumpy. And China's ongoing property issues and geopolitical risks remain reasons for pause. We prefer to play the China reopening through non-EM assets, and have a bias for developed market equities where there is greater clarity.
Risk Assets	REAL ASSETS	GLOBAL REAL ESTATE/ INFRASTRUCTURE **Equal-weight**	4%	4%	We are equal-weight both global real estate and listed infrastructure. Global real estate valuations make for a compelling long-term investment opportunity, but interest rate volatility keeps us at a strategic weighting for now. While we like listed infrastructure as a risk asset that can also provide downside protection, we see better risk-reward elsewhere.
Risk Assets	REAL ASSETS	NATURAL RESOURCES **2% overweight**	6%	4%	We see upside to commodities given underinvestment creating supply/demand imbalances, as well as increased demand from a China reopening and ongoing Russia disruption. Natural resources (NR) companies show much improved fundamentals to help better weather economic headwinds, while cheap valuations already reflect at least a portion of these economic drags. NR is a key hedge against inflation, geopolitical and China reopening risks.
Risk Assets	FIXED INCOME	HIGH YIELD **6% overweight**	11%	5%	High yield remains our biggest tactical overweight. We expect default rates to rise off of record lows but remain below the long-term average given: 1) strong credit fundamentals that support issuers' ability to pay; and 2) a benign maturity schedule. Combined with an improved high yield market quality and income yield of ~8%, we find high yield attractive.
Risk-Control Assets	FIXED INCOME	INVESTMENT GRADE **6% underweight**	28%	34%	Investment grade fixed income is our largest underweight. Barring a significant economic downturn, the magnitude of any longer term rate decline should be limited and potentially more constructive for risk asset returns. We prefer credit over term (interest rate) risk, especially as rate volatility remains high.
Risk-Control Assets	FIXED INCOME	INFLATION LINKED **Equal-weight**	5%	5%	We are equal-weight inflation-linked bonds on the basis that central banks have the tools and perceived willingness to contain inflation, but that this is mostly reflected in valuations and the path back toward target levels may prove difficult.
Risk-Control Assets	FIXED INCOME	CASH **2% overweight**	4%	2%	The opportunity cost of holding cash has narrowed with short-term interest rates around 4%. Having some cash on hand is warranted for yield and dry powder for opportunities that arise.
		TACTICAL RISK POSITION: **Neutral risk positioning**			We are underweight equities with a bias for developed markets, overweight high yield at the expense of investment grade, and in favor of NR (portfolio hedge) and cash (tactical optionality). We are neutral risk as we await more clarity on inflation, the central bank reaction function and economic growth risks, hopeful that in aggregate they will allow for better sentiment than in 2022.

*TAA = Tactical Asset Allocation.
** SAA = Strategic Asset Allocation.
These recommendations, based on the Global Policy Model, do not include alternatives. We believe strategic holdings in both private investments and hedge funds can assist in increasing portfolio efficiency. However, we do not make tactical recommendations on these asset classes due to the strategic nature of the investments.

MACRO THEME REVIEW

Moderating commodities prices could bring down headline inflation but continued tight U.S. labor markets suggest core inflation may be harder to tame.

Our 2023 outlook includes a review of the long-term capital market assumption themes published in our Five-Year Outlook. These themes drive our "forward-looking, historically aware" approach to strategic asset allocation. They also inform our tactical one-year outlook and asset allocation positioning. We provide a broad narrative of how our themes are progressing below, while Exhibit 3 details the status of each theme individually.

This past year was an acute reminder of how macro trends can conspire to wreak havoc on financial markets. Stubbornly high inflation — originally thought to be "transitory" — led to reactive central banks attempting to get back "ahead of the curve" by raising rates at a pace not seen in decades. Higher interest rates, in turn, led to growing fears of a global economic recession. Ironically, the U.S. economy's resistance to recession so far has only caused more central bank tightening and more financial market weakness.

Our "big three" themes — outlining our long-term outlook on growth, inflation and monetary policy — remain in play. As the name implies, **Slow Growth Transitions** are playing out slowly. And, in and of itself, that has been a problem for global economic growth — see China's slow move from pandemic to endemic or the uncertainty from the slow move from globalization to regionalization. Meanwhile, **Inflation Recalibration** has proven a complex task. Moderating commodities prices could bring down headline inflation but continued tight U.S. labor markets suggest core inflation may be harder to tame. Overall, while moderating inflationary pressures may warrant a pause in tightening in early-to-mid 2023, a reversal in monetary policy — much less a move back toward pre-2022 monetary policy settings — is unlikely. This is the view expressed by our **Monetary Drought** theme, wherein investors should not count on a return to the zero interest rate policy and quantitative easing flood of the past decade anytime soon.

EXHIBIT 3: HOW OUR INVESTMENT THEMES ARE PLAYING OUT

CMA Theme	What was said:	What we have seen:
Slow Growth Transitions	Slow transitions — pandemic to endemic; globalization to regionalization; and fossil fuels to renewables — represent economic challenges for a global economy already facing debt and demographic headwinds. Slow transitions will likely lead to continued slow growth.	Growth continues to be constrained globally, with some regions arguably already in recession and others on the precipice. China's pandemic-to-endemic transition continues to materially impact the outlook for global economic demand.
Inflation Recalibration	Automation and digitization are still impactful disinflationary forces, but may take time to overcome the recent shocks of stressed global supply chains, tight commodity markets and depressed labor supply. Recalibration will likely take much of the five-year horizon.	Inflation concerns have come down modestly. Supply chains have continued to heal and commodity prices have mostly returned to levels prior to the Russian invasion (though still a tight market), but labor markets remain resilient — the "fly-in-the ointment" for central banks.
Monetary Drought	The post-Global Financial Crisis monetary flood has evaporated — and the next five years may bring much drier conditions. The past couple years of quasi-modern monetary theory policy — partially responsible for high inflation — will unlikely repeat soon.	Central banks have shown a willingness to endure financial market weakness so long as inflation remains a problem. With inflation finally showing moderation, we may be in store for a central bank "pause" — but not likely a reversal in policy.
Regional Rebuilding Blocs	Globalization is evolving into regional systems driven by security needs — both economic and military. While this economic deglobalization should move slowly, we think decisions on whether — or how best — to deglobalize portfolios will come more quickly.	Recent legislation (e.g., U.S. CHIPS Act, European Chips Act) exemplifies regions investing in self capabilities to reduce external dependencies in critical industries. The same is happening at the corporate level, with indications that Apple is looking to reduce its dependence on China.
Green Transition Still a Go	The rising costs and insecurity of energy supplies have led policymakers to prioritize meeting energy demand in the near term even if it means increasing carbon emissions. But, over the medium term, climate initiatives remain an important consideration.	The green transition has been temporarily slowed by "all energy sources on deck" efforts and energy security concerns, but medium-term support for the transition has been boosted by Europe's move away from Russian gas and the U.S.'s passage of the Inflation Reduction Act.
Not So Negative	Higher interest rates — including a move out of negative territory for Europe and Japan — bring investors closer to positive real (after inflation) cash returns. Good for economic functioning (and savers), but likely a headwind for risk asset valuations.	Global negative yielding debt is down to ~$1 trillion (2% of total investment grade debt) and real rates are rising (though still negative in Europe and Japan). Equity valuations have fallen, partly to reflect these higher opportunity costs.

GROWTH & INFLATION

Tighter monetary policy and a global growth slowdown combined with the easing of pressures in energy markets and supply chains are starting to push inflation down.

GROWTH OUTLOOK

The 2023 global growth outlook cannot be disconnected from what held back growth in 2022: the war in Ukraine, China's COVID-19 struggles, high inflation and tighter monetary policy. We expect all of these factors to remain relevant in 2023, and as a result we have a cautious growth outlook. The U.S. economy has a bit more growth momentum than the rest of the world, but it still faces the severe headwind of higher interest rates. And even the vaunted U.S. consumer is vulnerable with a lower savings rate, a cooling labor market and negative real wage growth. While we expect below-trend growth, we think a significant downturn will be avoided. Europe may not be so lucky given headwinds from higher energy prices and interest rates, as well as slower global growth. Still, sizeable fiscal stimulus should help keep a recession relatively shallow. The U.K. is expected to fare a little worse due to the fallout of its mini-budget crisis, more pernicious inflation dynamics and continuing Brexit headwinds.

The situation in Japan is marginally better than in Europe as it doesn't face restrictive interest rates, but it does feel the sting of higher energy prices and slower global growth. Here too fiscal stimulus is a support, but we don't expect it will be enough to push growth above trend. China's growth outlook is particularly hard to assess. Stringent zero-Covid policies combined with regulatory tightening weighed on 2022 growth. For 2023, the Chinese government will likely be more focused on delivering robust results, but there are a lot of question marks regarding its ability to deliver. COVID-19 is unlikely to be easily managed and any reopening will likely happen in fits and starts. Similarly, the property sector is unlikely to bounce back quickly now that consumer confidence has been badly damaged. Overall, we anticipate positive but modest growth in China.

INFLATION OUTLOOK

The world is still in the midst of a huge inflationary surge due to big increases in prices of energy, food, goods and housing. At the same time, the inflationary dynamics are starting to change. Tighter monetary policy and a global growth slowdown combined with the easing of pressures in energy markets and supply chains are starting to push inflation down. We expect U.S. inflation to continue to trend lower, although labor market strength could lead to inflation proving a bit more durable than markets expect. We expect European inflation to drift below market expectations, but note it is very sensitive to energy prices. Inflation in the U.K. will be somewhat stickier but should still decline to levels similar to Europe. For Japan, we expect inflation to creep back down to a relatively healthy level. Finally, we expect China's inflation to stay relatively low and rangebound given the difficult balancing act ahead for its government.

EXHIBIT 4: GROWTH AND INFLATION SLOWDOWN

Economic growth risks are tilted to the downside, but so is the inflation trajectory.

Key Metrics / **Northern Trust Outlook**

	Real GDP (%)		CPI (%)		Growth	Inflation
	2022	2023	2022	2023	2023	2023
	Actual	*Consensus*	*Actual*	*Consensus*		
U.S.	1.8	0.4	8.1	4.3	Disappoints	Over
Europe	3.2	-0.1	8.5	5.9	Disappoints	Under
China	3.3	4.9	2.2	2.3	Disappoints	Under

Source: Northern Trust Asset Management, Bloomberg consensus forecasts. Growth of gross domestic product (GDP) and headline Consumer Price Index (CPI) inflation are year-over-year. Northern Trust outlook is relative to current market expectations: Growth is either "Surprises" or "Disappoints" and inflation is either "Over" or "Under". Data as of November 30, 2022.

MONETARY & FISCAL POLICY

We expect rate hikes to slow down meaningfully before central bank policy rates reach "plateau" levels.

MONETARY POLICY OUTLOOK

Monetary policy has been in overdrive with central banks across the developed world (ex-Japan) tightening much more than initially expected. In just one year, the Federal Reserve is likely to have delivered more than 4% in cumulative rate hikes — something it hasn't done in over 40 years. The Bank of England (BOE) has delivered 3% in cumulative rate hikes, and the European Central Bank (ECB) 2%. Concerted tightening of this scale underscores the inflation challenge facing monetary policymakers globally. However, central banks are now closing in on or exceeding their so-called neutral rates, and the lagged impact of rate hikes is slowing economic growth. For 2023, we expect policy rate hikes to slow down meaningfully before reaching "plateau" levels. Once there, central banks will take a forward-looking and data-dependent stance with inflation and labor market dynamics taking center stage. Given the severity of the inflation challenge to date, we think there is a high bar for rate-cut pivots.

For the Fed, we expect 50-75 basis points (bps) of rate hikes in 2023. At 5.0%, we expect monetary policy will be considered sufficiently tight, allowing the Fed to pause and reflect on incoming data. The market is pricing in rate cuts in the back half of 2023 — we think this is unlikely unless the U.S. economy experiences a deeper recession than expected. On the ECB, we expect it to pause once its deposit rate hits 2.0-2.5%. The eurozone is probably already in recession and the inflationary pressures in Europe are more narrow than in the U.S. That gives the ECB room to focus on second-round effects in wages and growth instead of the current headline inflation rate. The BOE has strongly signaled that it won't hike rates as much as the markets are discounting. The growth outlook is weak and interest-rate sensitive sectors like housing are already under severe pressure. We expect another four to five 25-basis-point rate hikes at the most. The Bank of Japan has stood by its highly accommodative stance and Japanese interest rates across the yield curve remain firmly anchored close to zero. We don't expect that to change even though the functioning of the bond market is now severely hamstrung. We anticipate China's central bank will continue to ease monetary policy to support domestic economic growth.

FISCAL POLICY OUTLOOK

We expect the U.S. fiscal drag relative to pandemic-era stimulus will continue as divided government limits the prospect for major spending bills. In Europe the picture is more mixed. Although pandemic support has ended, energy support schemes equate to fiscal stimulus worth 3.8% of gross domestic product in the eurozone alone, and the release of NextGeneration EU funds continues as well. Even with the fiscal support, however, the net impact on growth from higher energy prices is still negative. The same applies to Japan, where the blow is cushioned but not blocked.

EXHIBIT 5: POLICY PLATEAUS

We expect rate hikes to pause in the first half of 2023, with inflation dictating the duration of the plateaus.

Key Metrics

	Central Bank Rate (%)		Fiscal Deficit (%)	
	2022	2023	2022	2023
	Actual	*Consensus*	*Actual*	*Consensus*
U.S.	4.50	4.65	-4.4	-4.5
Europe	2.50	2.90	-3.9	-3.6
China	4.30	4.30	-5.8	-4.8

Northern Trust Outlook

	Monetary Policy	Fiscal Policy
	2023	2023
U.S.	More restrictive	Drag
Europe	Less restrictive	Boost
China	Less restrictive	Boost

Source: Northern Trust Asset Management, Bloomberg consensus forecasts. Central bank rates: Federal Reserve target rate (upper bound); European Central Bank refinancing rate; People's Bank of China one-year lending rate. Northern Trust outlook is relative to current market expectations: Monetary policy is either "More restrictive" or "Less restrictive" and fiscal policy is either "Boost" or "Drag" (in regards to its economic growth impact). Data as of November 30, 2022.

INTEREST RATES

- Interest rate volatility was very elevated in 2022 as the strength of inflation caught many off guard, including central bankers who were forced to respond.
- We expect the bulk of the increase in interest rates is behind us and note that the pace at which inflation falls will largely determine the rate path from here.
- We have warmed up to duration risk, but we maintain a neutral bias given limited upside and ongoing interest rate volatility — we prefer credit risk (see next page).

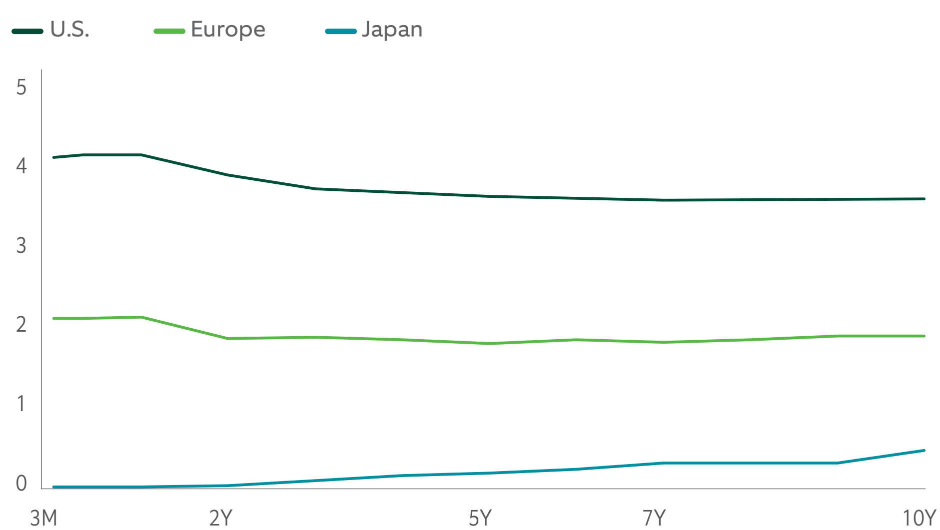
The upward trend of short-term rates that began to crystallize toward the end of 2021 gained steam early in 2022 as investors digested the inflationary implications of the Ukraine war. Central banks put on their hawkish hats in response to the ensuing inflation surge. The substantial increase in central bank policy rates, roll-off of balance sheets and hawkish communication from central bankers lifted short-end rates to decade highs from levels at or below zero. As expected terminal central bank policy rates increased, so too did longer term yields. The widespread central bank focus on containing inflation meant bringing down demand in line with supply. Recessionary alarm bells began to ring, which capped the increase in longer term yields relative to short-term rates. Overall, 2022 was marked by elevated interest rate volatility, particularly at the short end, and we now enter 2023 with higher rates and flatter (in many cases inverted) curves.

As noted on the prior pages, central banks have likely executed the vast majority of tightening and the degree to which policy rates have room to run — or not — in 2023 will depend on the balance of inflation and growth. We expect this balance will mean still-more restrictive monetary policy in the U.S. (more durable inflation, more economic supports) than outside of the U.S. (less broad-based inflation, more imminent growth risks). As such, non-U.S. interest rates have likely peaked, with potentially even modest downside risk in some areas. Treasury yields will likely move slightly higher from here but remain rangebound thereafter as labor market strength supports the economy and makes the Fed hesitant to reverse course. While we see less room for Treasury yields to increase in 2023, we do not expect a deep recessionary environment that would likely be required to move rates materially lower. So while we are warming up to duration risk given higher starting interest rates, we maintain a neutral bias heading into 2023 given an expectation for rangebound interest rates and the potential for ongoing rate volatility.

EXHIBIT 6: RANGEBOUND

We think the market is overestimating the degree to which U.S. interest rates will decline.

Market Yield Curve Forecasts (% one-year forward rate)



Source: Northern Trust Asset Management, Bloomberg. German yields, often cited as the euro area benchmark, are used as a proxy for Europe. One-year forward rates as of December 5, 2022.

CREDIT MARKETS

- As was the case in 2021, credit risk was (slightly) less risky than interest rate risk — as high yield once again outperformed investment grade debt.
- With interest rates now reset at higher levels, 2023 should get investment grade fixed income returns back into the black, but other asset classes look more attractive.
- High yield continues as our highest conviction tactical overweight — supported by solid yields and decent fundamentals (even in the face of a shallow recession).

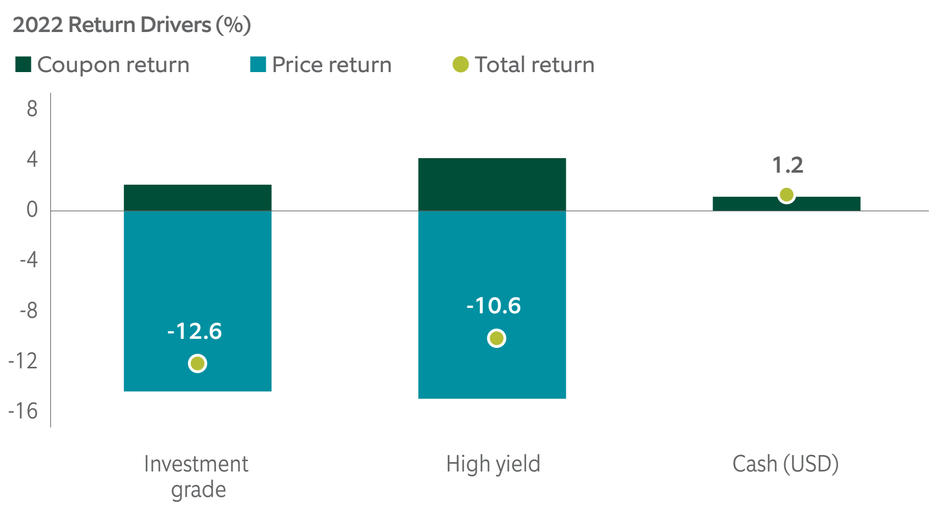
Fixed income returns in 2022 were negatively impacted by elevated inflation and interest rate volatility. In an effort to cool the economy, the Fed engaged in the fastest set of rate hikes on record. Last year's optimism around economic normalization vanished as a recessionary backdrop became the expectation, providing little support for any risk taking. It was a year in which asset prices were tied to economic data releases related to inflation and unemployment. The dual threat of a global coordinated central bank hiking campaign alongside the specter of low future growth led to a very difficult year for effectively every asset class. Notably, broad-based increases in commodities, better-than-expected earnings, a consumer that continues to prove resilient, and the slowest capital markets activity since the Global Financial Crisis led to high yield performing quite well on a relative basis, while investment grade was battered due to its high exposure to interest rates. Strong corporate balance sheets and pricing power allowed the corporate default rate to remain at levels well below the long-run average.

The rise in Treasury yields has created an opportunity set in fixed income that has not been attainable outside of periods of economic crisis. High income combined with still favorable corporate resiliency support our outlook for credit. We think high yield's stable credit fundamentals and low default rates — albeit trending back toward the long-term average from a record low — will support the majority of capital structures. The high yield market's quality level is at historically high levels and, in this context, current income levels continue to provide value. Global investors continue to search for assets that provide income and serve as a hedge for interest rate volatility, which should continue to support high yield valuations. Our favorable view on high yield is reinforced by advantageous sector composition and a benign maturity schedule.

Our outlook for investment grade is more favorable than in past years given the rise in yields. We believe Treasury rates will remain rangebound and investment grade credit spreads will remain near current levels. Our base case of improving supply chain conditions, a resilient consumer and some moderation of currently high interest rate volatility should benefit credit valuations of investment grade bonds. Amid a highly uncertain macroeconomic landscape, we continue to find value in fixed income, with high yield providing appealing total returns. We expect investment grade's income potential, with likely negligible default risk, will continue to attract investors as the macroeconomic data becomes more clear in 2023.

EXHIBIT 7: HIGH YIELD OVER INVESTMENT GRADE

We expect better returns out of high yield and investment grade in 2023, with high yield outperforming again.



Source: Northern Trust Asset Management, Bloomberg (BBG). 2022 total returns through November 30, 2022. Proxies: investment grade - BBG U.S. Aggregate; high yield - BBG High Yield 2% Issuer Capped; cash - BBG U.S. Treasury Bills 1-3 months.

EQUITIES

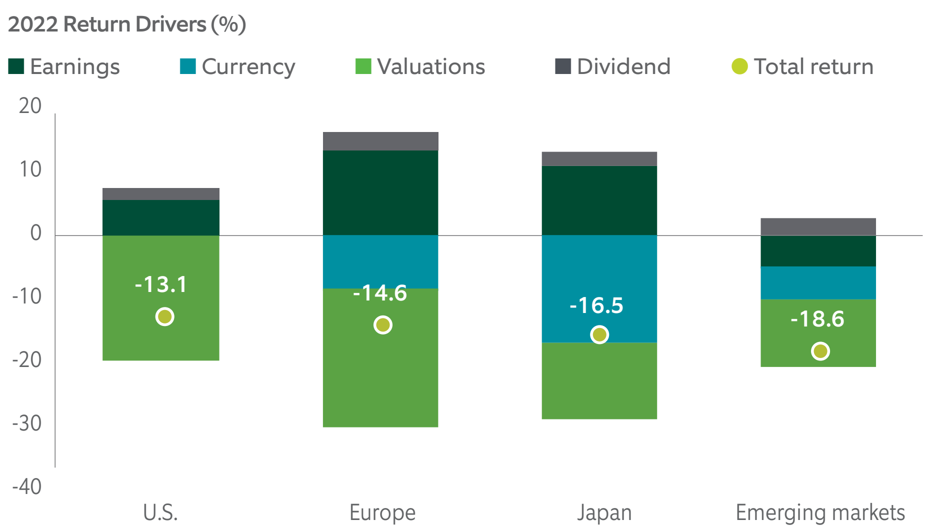
- 2022 represented a valuation reset of global equities in anticipation of a weakening of economic growth and earnings and acknowledgement of higher interest rates.
- U.S. growth stocks had capitalized structurally low interest rates into valuations over the last several years, which was unwound as rates moved in 2022.
- In aggregate we sit underweight emerging market equities and equal-weight across developed market equities; sentiment should improve as we move into 2023.

The year 2022 was very challenging for global equities. Significantly higher and more durable levels of inflation prompted a much more significant monetary policy response as central banks sought to quell demand. This created two headwinds for equities: 1) Higher interest rates are negative for stocks as future cash flows are discounted at a higher interest rate, thus bringing down equity valuations; 2) Central banks seeking to bring balance to supply and demand by curtailing demand via tighter financial conditions has reduced growth expectations and materially increased the risk of recession. U.S. stocks were hurt disproportionately by the interest rate environment, as U.S. rates rose more significantly and the U.S. is overweighted to growth stocks, which are more exposed to that discounting of cash flows as more of the value of growth companies is in the future. European equities proved somewhat resilient against a challenging economic backdrop, while emerging markets lagged on the greater sensitivity to higher food and energy prices, the strong dollar and, most importantly, the significant negative economic consequences of China's zero-Covid strategy and crackdown on large public companies.

Looking ahead, consistent with our view of a downside skew to the potential macroeconomic outcomes, we see some additional downside risk to corporate fundamentals as well. This will likely be balanced against an improving sentiment backdrop as certain catalysts are realized throughout the year, including a plateau of central bank policy rates, continued improvement in inflation, and (hopefully) a realization that a possible recession will be relatively shallow and short. So, while we think fundamentals get worse before they get better as the full weight of the cumulative effect of tighter financial conditions is felt, we think equity investors may be willing to "look across the valley" of weak fundamentals if it appears short-lived. We enter the year neutral-weighted in the U.S. and developed ex-U.S. markets, while remaining underweight emerging markets. We acknowledge the potential for China to emerge from its zero-Covid policy in 2023, but expect it will be bumpy, uneven and prone to setbacks. With longer term structural challenges around demographics, real estate and deglobalization firmly in place, we enter the year cautiously positioned in emerging markets.

EXHIBIT 8: DEVELOPED MARKETS OVER EMERGING

Valuations should be less of a headwind in 2023 — we think developed markets will do better than emerging markets again.



Source: Northern Trust Asset Management, Bloomberg. 2022 returns through November 30, 2022. Proxies: U.S. - S&P 500; Europe - MSCI Europe; Japan - MSCI Japan; emerging markets - MSCI Emerging Markets.

REAL ASSETS

- Real assets continued to provide diversification in a year where diversification was dear; natural resources provided especially commendable (and positive) returns in a down year.
- A quantitative review of 2022, based on our proprietary model, shows all real assets exhibited returns beyond that explained by exposure to major risk factors — especially natural resources and listed infrastructure.
- We have reasserted an overweight to natural resources given the solid fundamental outlook and the way in which natural resources can act as a hedge against an emerging market equities rebound.

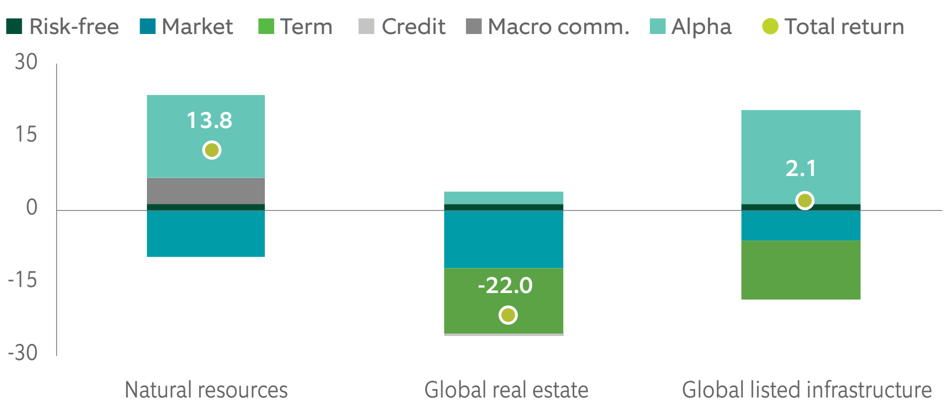
Real assets — notably natural resources (NR) and listed infrastructure (LI) — brought some stability to the diversified portfolio in a year where diversifying asset classes were hard to find. In 2022, NR bucked the broader downward trend in financial markets with a 13.8% return (as of November 30) while LI also provided positive returns at 2.1% (the only other major asset class able to make that claim in 2022 was cash with a 1.2% return). Indeed, we believe these asset classes really showed their worth as those that can actually benefit from higher inflation (especially when driven by commodity prices) and geopolitical risks (especially when those geopolitical risks concern commodity-producing countries). Global real estate (RE) did not provide the same diversification benefits — down 22.0% — as the asset class has less inflation exposure than NR and LI and was hit harder by its interest rate exposure.

As documented in our five-year outlook, we spend a lot of time understanding the factor exposures found in real assets. All real assets have significant equity exposure and are, therefore, exposed to some of the same macro forces that challenge our equity outlook. Global real estate and listed infrastructure also have notable interest rate exposure — adding somewhat to performance uncertainty given still-elevated interest rate volatility. That said, global real estate is an asset class to keep an eye on — as any sustained period of steady-to-falling interest rates should lead to solid gains given how negative sentiment has gotten within the real estate space. NR has an acute exposure to commodity spot prices — as one would expect — but that exposure was not the only reason for its 2022 outperformance. Per Exhibit 9, NR and LI exhibited returns beyond that explained by exposure to the major risk factors in our model (alpha). Continued strong fundamentals (persistent cash flows, tight commodity markets, stronger balance sheets) and still-attractive valuations mean NR will continue to play an important role in the portfolio — both as a hedge against lingering inflation but also as a better way than emerging market equities to play a quicker-than-expected China reopening. From a tactical asset allocation perspective, we have reasserted an overweight to NR for the reasons stated above. But we enter 2023 at strategic levels in LI and RE as we watch for a true peak in interest rates.

EXHIBIT 9: FINDING DIVERSIFICATION

Natural resources seized the day in 2022. We think it will play an important role in 2023 as well.

2022 Return Drivers (%)



Source: Northern Trust Asset Management, Bloomberg. Regressions calculating factor exposure (beta) run from December 31, 2002 to March 31, 2022. 2022 total returns through November 30, 2022. Proxies: global listed infrastructure - S&P Global Infrastructure; natural resources - S&P Global Natural Resources; global real estate - MSCI ACWI IMI Core Real Estate.

Glossary of terms: Risk-free is the return from cash, proxied by 3-Month Treasury Bills. **Market** is the return premium associated with taking on equity market risk, as opposed to investing only in the risk-free asset. **Term** is the return premium associated with taking on maturity risk; that is, of investing in longer term bonds. **Credit** is the return premium associated with taking on credit risk by investing in higher yielding bonds rather than investment grade Treasury bonds. **Macro commodity** is the return premium associated with commodity spot exposure. **Alpha** is risk-adjusted outperformance.

CONCLUSION

Financial markets will have to balance the immediacy of disappointing global growth against the backdrop of greater certainty on central bank policy, a reduction in interest-rate volatility and the potential of a return to growth later in the year.

There were very few places to hide in 2022. High and persistent inflation drove central banks to rapidly and significantly tighten financial conditions, threatening economic growth and corporate profits. Equities were hit by the threat of recession and the impact of higher interest rates on valuations, while fixed income suffered from higher rates and wider credit spreads. Bonds failed to offer their typical diversification benefit as the source of greater economic risks was rising interest rates. The period of the last ~40 years of declining/low inflation taught us that bond yields fall when economic risks are building, creating a “hedge” for risk assets. Such was not the case in 2022.

Markets were clearly caught off guard by the environment that unfolded in 2022. The 10-year Treasury yield started the year at just 1.5%, the Fed funds rate was at zero and expected to rise only modestly, and U.S. equities were over 21 times forward earnings expectations. Such a starting point left the market vulnerable to the very unexpected outcome with respect to inflation. Central banks, while late, acted aggressively in 2022 to combat the inflationary environment unfolding around the world. Anchored longer term inflation expectations reflect the market’s confidence in the tools and resolve central bankers have to bring inflation under control, albeit with material economic costs.

Looking ahead, most global central banks have entered or soon will enter restrictive levels on short-term interest rates, the long end of the curve has reset toward levels more consistent with long-run expectations, and equity valuations have returned to levels approximating fair value, or even below in some regions. While we still see risks for the economy and corporate profits skewed to the downside, the setup for sentiment shifting more favorably in 2023 has improved. Central banks are approaching a plateau in short-term rates and inflation is trending lower. The full weight of the cumulative effect of higher rates has yet to be felt in the economy, but the health of consumer, corporate and financial institution balance sheets provide reason to believe a recession should be shallow and short-lived.

Financial markets will therefore have to balance the immediacy of disappointing global growth against the backdrop of greater certainty on central bank policy, a reduction in interest-rate volatility and the potential of a return to growth later in the year. That balancing act won’t be easy because our base case is for a recession in Europe, better-than-even odds of a recession in the U.S., and continued struggles in emerging markets. Even more, we think inflation will struggle to get back to central bank targets, keeping some or perhaps several at their plateau longer than market expectations. Nonetheless, it is important to respect the forward-looking nature of financial markets and clear and decisive signs that inflation has been tamed could trigger a positive turn in sentiment even when growth is still weak. We will be watching labor markets closely for those signs as we expect they will act as the main battleground for the debate around the outlook for inflation.

How helpful was this paper?

CAPITAL MARKET EXPERTISE

Every year, Northern Trust's Capital Market Assumptions Working Group develops forward-looking, historically aware forecasts for global economic activity and financial market returns — which drive our five-year asset class return expectations and inform our asset allocation decisions.

All of this comes together in the form of our long-term strategic asset class allocation suggestions, which are used by institutional and individual investors worldwide.

FOR MORE INSIGHTS	Go to **northerntrust.com/1YearOutlook**

Indexes used in Exhibit 1 are: cash - Bloomberg (BBG) U.S. Treasury Bills 1-3 Months; municipal bonds - BBG Municipal Bond; investment grade bonds - BBG U.S. Aggregate; TIPS - BBG U.S. Treasury Inflation Notes; high yield bonds - BBG U.S. High Yield 2% Issuer Cap; emerging market debt - J.P. Morgan GBI-EM Global Diversified Composite; U.S. equities - MSCI U.S. IMI; developed ex-U.S. equities - MSCI World Excluding U.S. IMI; emerging market equities - MSCI Emerging Markets IMI; natural resources - S&P Global Natural Resources; global real estate - MSCI ACWI IMI Core RE; global listed infrastructure - S&P Global Infrastructure.

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