Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

MARCH 1, 2023 (ANALYSIS DATE DECEMBER 31, 2022)

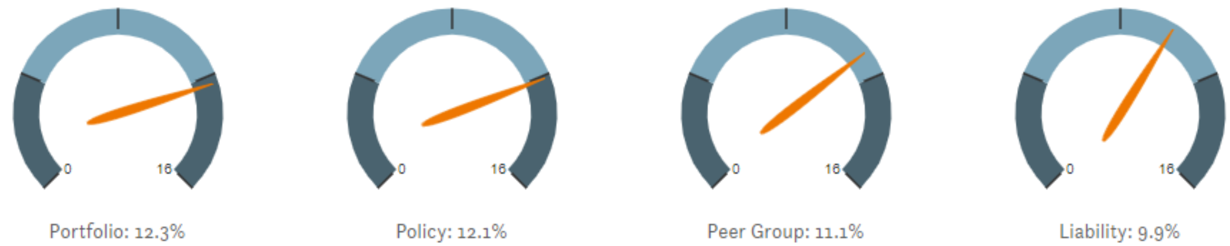
San Jose Federated Retirement Plan – Investment Committee

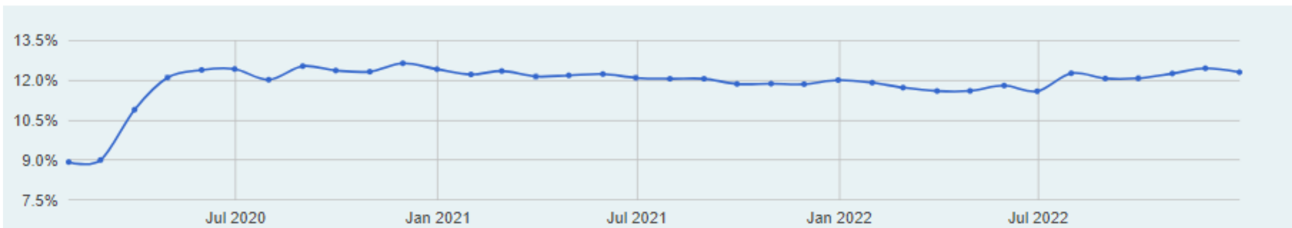
Quarterly Risk Summary

Summary

- Total risk remains elevated at 12.3%
- High utilization of passive strategies (≈ 60%) in public markets keeps overall relative and active risk low
- The portfolio and policy benchmark perform similarly in both historic drawdown and stressed scenarios
- Capital allocations with respect to size and country allocation, two main public equity risk drivers, are close to San Jose's custom benchmark allocations.
- Style factors are typically a large driver of active risk. We do not observe any large active style factor exposures in the portfolio.

Portfolio volatility

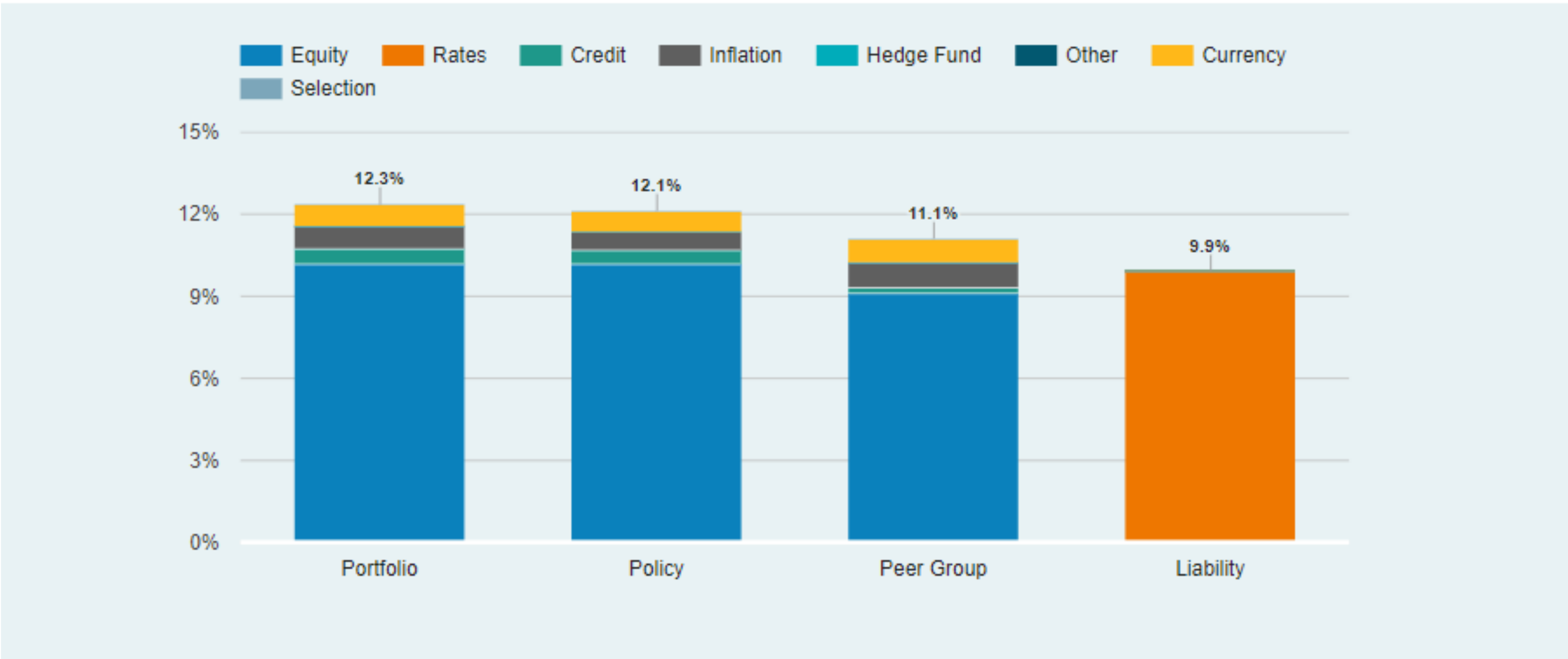




Portfolio volatility is very slightly elevated versus policy.

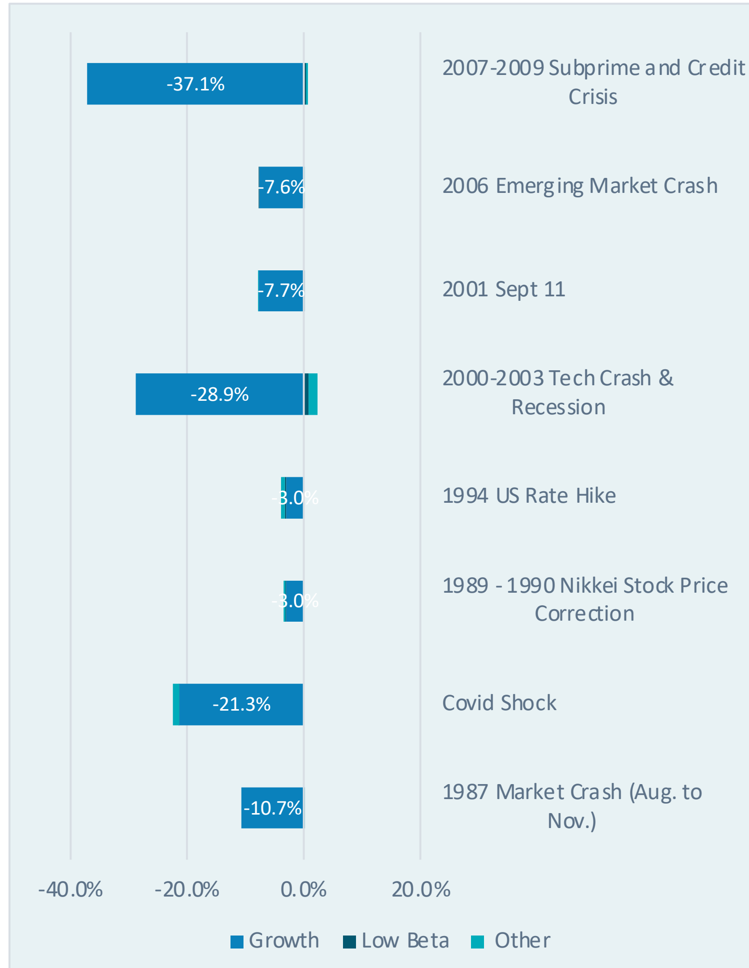
Over 90% of portfolio volatility is coming from growth assets.

Risk factor decomposition



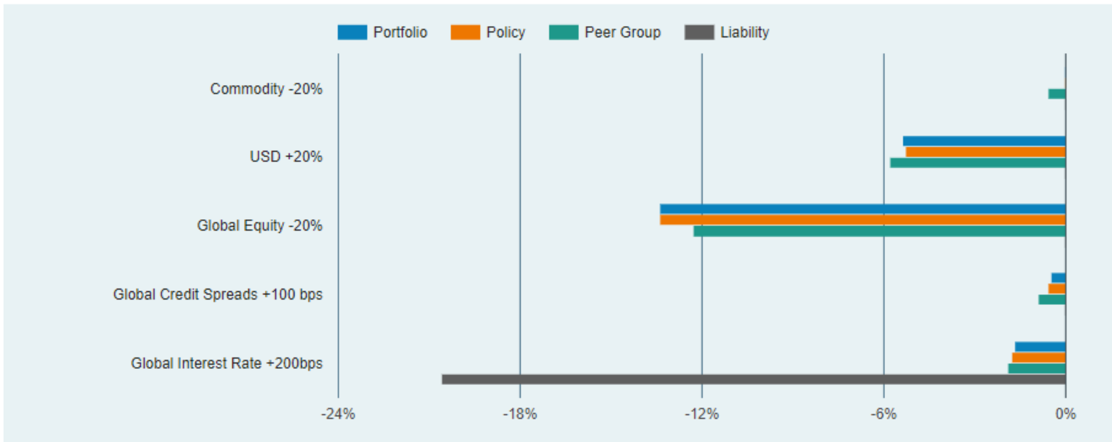
While equity factors are the dominant source of risk in the portfolio, currency, inflation, and credit factors contribute to overall risk

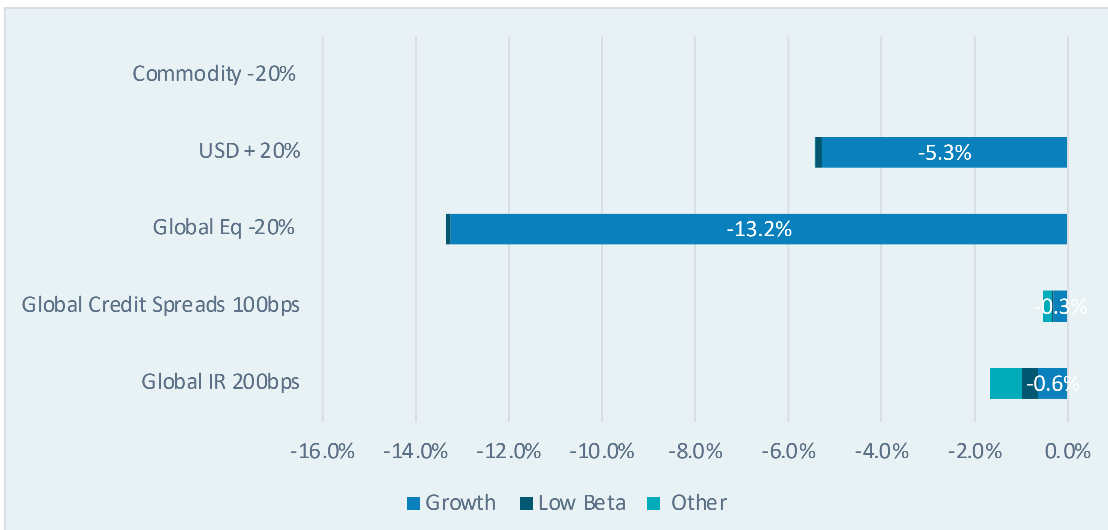
Historical scenarios



Portfolio performs like the policy in most historic scenarios

Stress tests



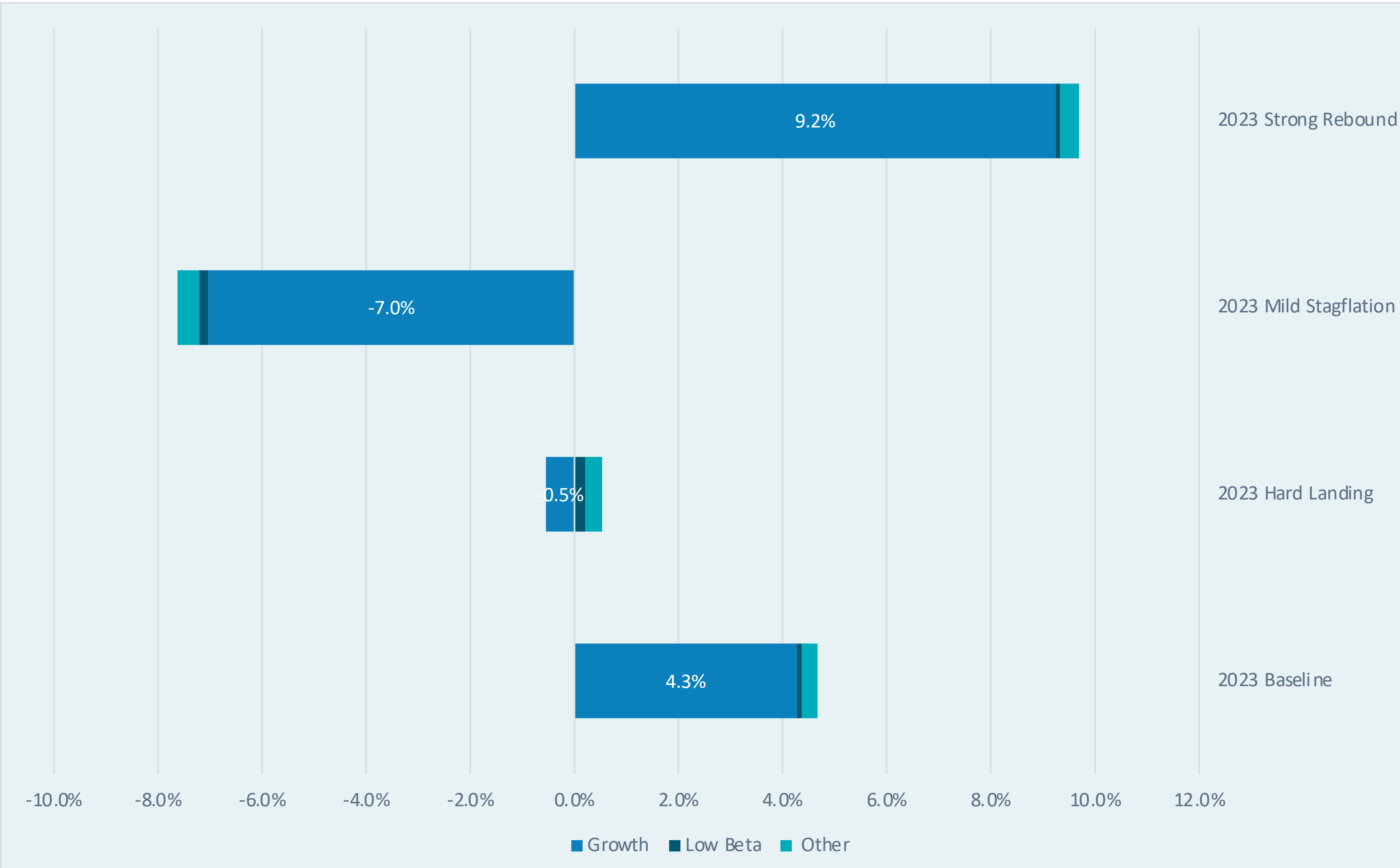


Portfolio is most sensitive to changes in equities and currency markets

Portfolio is less exposed to interest rate risk and credit spread risk

Stress tests are conducted using uncorrelated shocks.

2023 Market Uncertainty

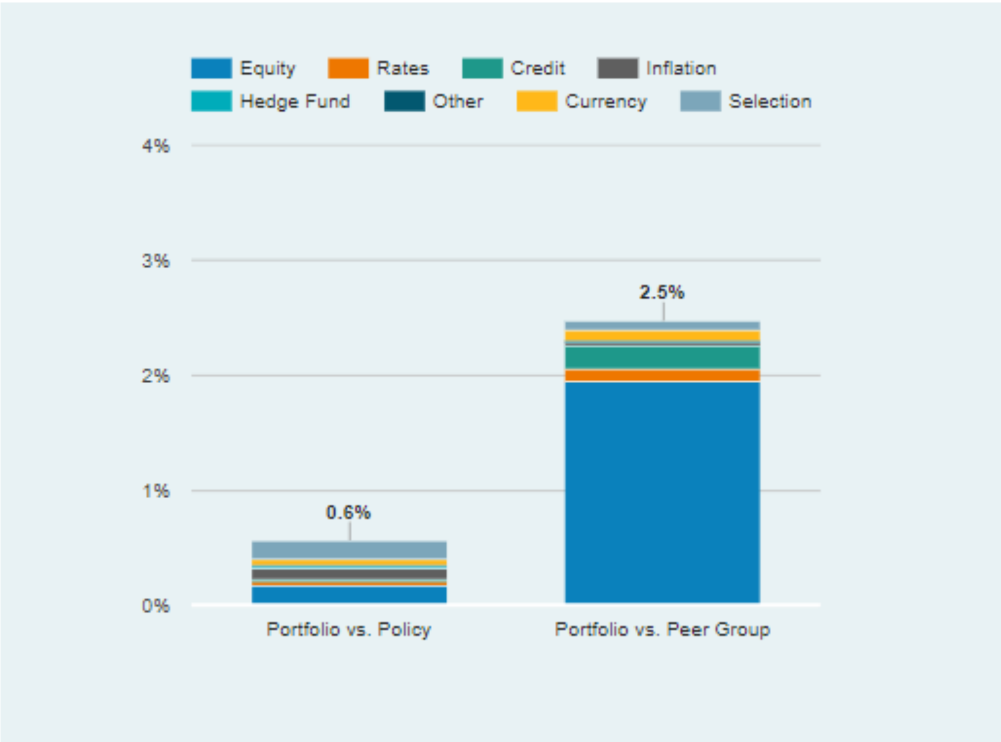


Worst inflation scenario is Stagflation (high inflation, recession or very low growth)

Fed's success at balancing inflation reduction with minimizing growth impact will not be evident for likely year or more

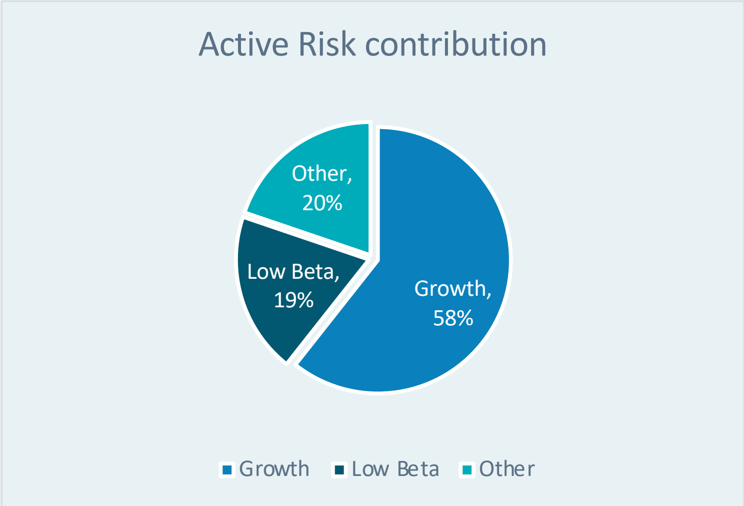
Source: BarraOne

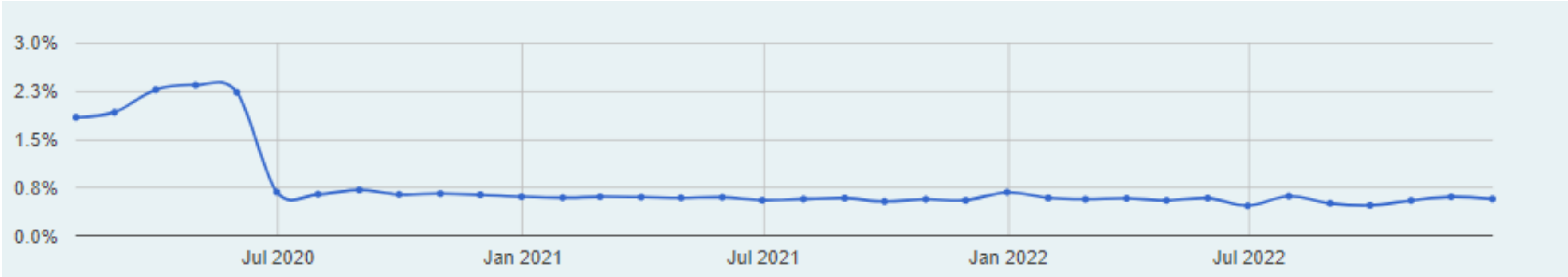
Active risk factor decomposition



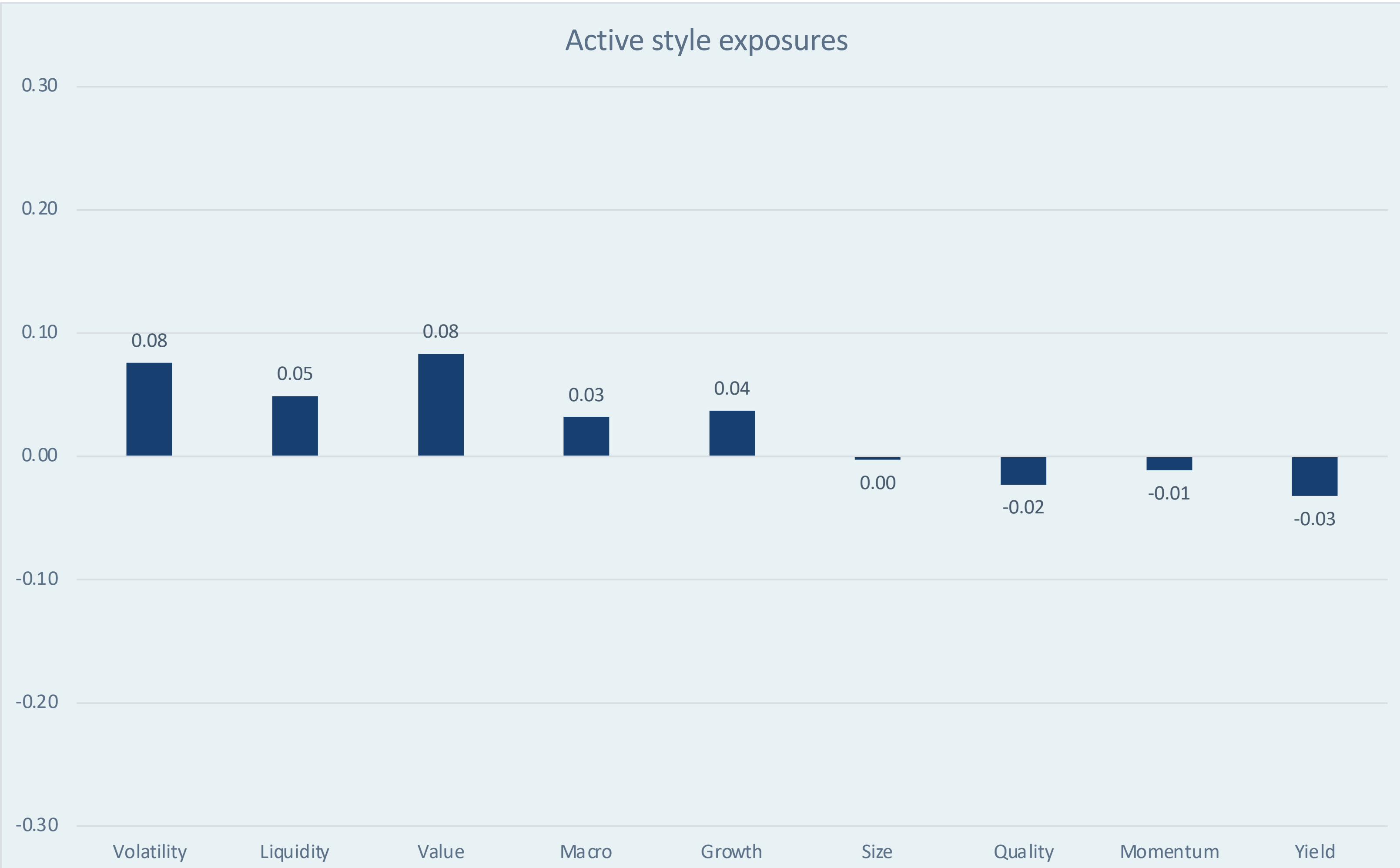
Active risk (or tracking error) provides insight into amount of excess performance we expect to see in portfolio.

Active risk profile has shifted to reflect more 'beta' versus idiosyncratic exposures





Equity factor exposures



The largest active style factor exposures are Volatility and Value.

Values greater than 0.2 are generally considered significant

Appendix

Style factor descriptions

Style Factor	Description	Intrepretation
Size	Captures the return differences between large-cap stocks and small-cap stocks	A positive exposure indicates large capitalization. A negative exposure indicates small capitalization.
Value	Explains the return component attributable to a stock's book-to-price ratio, and earnings yield.	A positive exposure indicates an undervalued stock. A negative exposure indicates an overvalued stock.
Yield	Explains the return component attributable to a stock's dividend yield	A positive exposure indicates a higher dividend yield. A negative exposure indicates a lower dividend yield.
Momenturm	Explains the return differences of stocks based on their relative performance over the trailing 6-12 months	A positive exposure indicates a high medium-term momentum (good recent performance). A negative exposure indicates a low medium-term momentum (poor recent performance)
Quality	Captures common variation in stock returns due to differences in the level of company leverage	A positive value indicates high leverage. A negative value indicates low leverage
Volatility	Explains returns associated with high volatility stock	A positive exposure indicates a high volatility. A negative exposure indicates a low volatility.
Liquidity	Describes return differences of stocks based on their relative trading activity	A positive exposure indicates a high liquidity. A negative exposure indicates a low liquidity.
Growth	Describes return differences of stocks based on their prospects for sales or earnings growth	A positive exposure indicates a high historical/predicted growth. A negative exposure indicates a low historical/predicted growth.
Macro	Describes return differences of stocks based on sensitivity to commodities (Oil/Gold) and foreign exchange rates	A positive exposure indicates high sensitivity to macro factors. A negative exposure indicates low sensitivity to these factors.

Navigating 2023 market uncertainty

The macroeconomic landscape for 2023 is shrouded in uncertainty following a tumultuous 2022. The path and influence of central banks' monetary tightening are unclear, and while energy prices have dropped, there are still questions about energy supply and geopolitical tensions. We have laid out four scenarios for investors to gauge the potential impact on their portfolios.

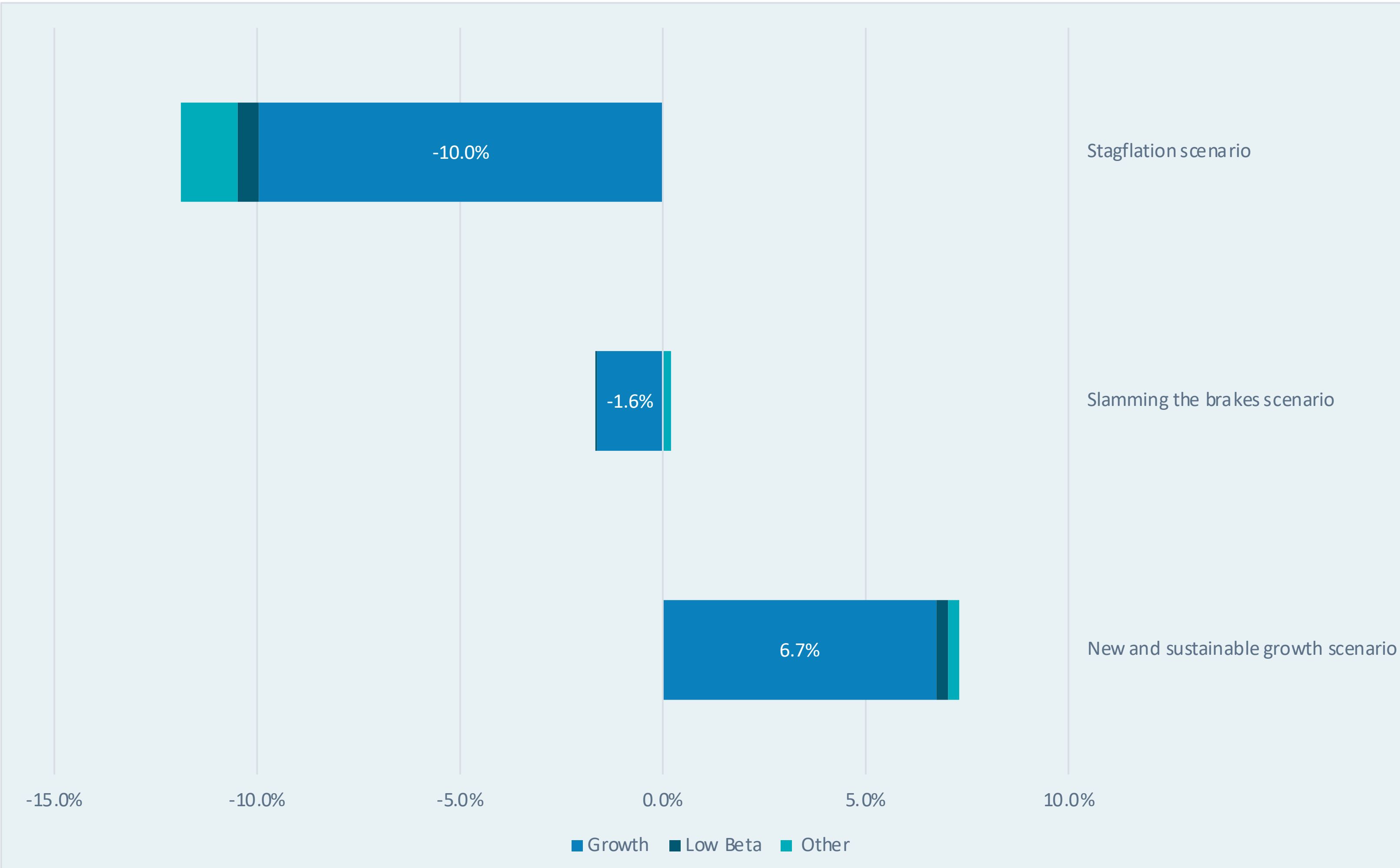
Baseline: Interest rates remain high as inflation stays elevated in 2023. Economic growth in the U.S. is weak but slightly positive, while there is a mild recession in Europe. No additional global downside risks materialize. The U.S. dollar slightly depreciates.
Hard landing: Monetary policy effectively curbs inflation, and the Federal Reserve maintains its credibility, at the cost of a U.S. recession in 2023. The Fed's pivot in response to the recession weakens the U.S. dollar significantly.
Mild stagflation: Central-bank policy does not efficiently tame inflation, eroding central banks' credibility, and inflation becomes entrenched. High prices and interest rates weigh on growth for an extended period. The U.S. dollar strengthens, putting pressure on emerging-market economies.
Strong rebound: Inflation is under control and falls more than economists' consensus expectation, while economic growth surprises on the upside. Current global headwinds get resolved and supply-chain issues ease.

Changes in market expectations have highlighted there is significant uncertainty surrounding portfolio outcomes in 2023

		Baseline	Hard landing	Mild stagflation	Strong rebound
Inflation	USD BEI 2Y	-15 bps	-50 bps	110 bps	0 bps
	EUR BEI 2Y	-20 bps	-55 bps	95 bps	-10 bps
Nominal yields	USD TSY 2Y	-25 bps	-90 bps	125 bps	0 bps
	USD TSY 10Y	-10 bps	-60 bps	80 bps	15 bps
	EUR TSY 2Y	-15 bps	-50 bps	100 bps	0 bps
	EUR TSY 10Y	-10 bps	-30 bps	60 bps	20 bps
Equity	US	6%	-2%	-10%	12%
	Europe	4%	-2%	-10%	8%
	China	10%	-5%	-10%	20%
	India	8%	-5%	-2.50%	20%
	US growth	6%	-5%	-25%	15%
Credit spreads	US IG	0 bps	20 bps	30 bps	-25 bps
Currency	EUR	2%	7%	-7%	5%
	JPY	5%	15%	-5%	10%

Source: MSCI

Fed policy and the threat of stagflation



Worst inflation scenario is Stagflation (high inflation, recession or very low growth)

Fed's success at balancing inflation reduction with minimizing growth impact will not be evident for likely year or more

Source: BarraOne

Fed policy and the threat of stagflation

Soft Landing: Assumes that much of the ongoing inflation is caused by the booming economy of the past year — a positive demand shock — as a result of easing pandemic restrictions and government stimulation. If the Federal Reserve upholds its strong stance on stabilizing inflation by gradually hiking interest rates, and perhaps more important, consumers and corporations believe that this inflation stability is the path ahead, then inflation could ease without the need for aggressive monetary tightening, potentially enabling robust economic growth. If this scenario plays out, equity markets could regain some ground and Treasury yields may drop moderately.

Slamming the brakes: Depicts a scenario where a supply-side shock prevails due to high energy prices and continuing supply-chain issues, which further increase inflation and dampen economic activity. As inflation climbs further, policymakers decisively tighten monetary policy in a quest to extinguish inflation quickly, which could further slow economic growth in the short term but avoid long-term economic damage.

Stagflation: Considers a similar starting point as the "Slamming the brakes" scenario, with a supply shock leading to higher inflation and slower growth. However, in this scenario central banks' actions are too little or too slow, allowing inflation to run hotter for longer than it had in the past two decades. This could lead to a loss of central banks' credibility, whereby consumers and corporations adjust their long-term inflation expectations, which in turn disrupt long-term economic growth. In this most-feared scenario reminiscent of the early 1980s, the equity-bond correlation might turn positive, reversing the hedge they have offered for most of the last two decades.

Scenario	Soft landing	Slamming the brakes	Stagflation
BEI-Rate Shocks (basis points)	Two-year: -110	Two-year: -130	Two-year: +320
	10-year: -20	10-year: -30	10-year: +180
Nominal yields(basis points)	Two-year: -80	Two-year: +30	Two-year: +30
	10-year: -30	10-year: -60	10-year: +250
US Credit-Spread Shocks (basis points)	Investment Grade: -20	Investment Grade: +5	Investment Grade: +35
	High Yield: -40	High Yield: +15	High Yield: +250
US Equity Return (nominal)	+14%	-3%	-16%
Oil prices	-10%	-25%	+40%

Source: MSCI

Changes in market expectations have highlighted there is significant uncertainty in how inflation and monetary policy may evolve

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