RBC Global Asset Management

RBC GAM long-term capital market assumptions

2023 update

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Financial markets were ravaged in 2022 as valuations suddenly retraced from extremes, setting up the conditions for improved return potential for a wide range of asset classes going forward.

Last year marked one of the worst periods on record for financial markets in terms of the depth and breadth of declines in asset prices globally. The rapid and coordinated tightening of monetary conditions everywhere hurt an unusually broad range of investments, with the biggest declines occurring in segments of the market most sensitive to changes in interest rates. Government bonds suffered their biggest drop since the 1980s and the world's major equity-market indices fell precipitously into bear markets (Exhibit 1). Although last year was painful for investors and a variety of near-term risks remain, the scale of adjustment that we've seen in interest rates and asset prices last year erased much of the overvaluation that existed at the beginning of 2022 and reset interest rates to levels not seen since before the 2008 global financial crisis. With that re-pricing now behind, financial markets today are meaningfully more appealing to investors and, as forecasters looking forward, we find ourselves more constructive on the outlook for investment returns across a broad range of asset classes over a time horizon measured in decades.

Exhibit 1: Asset performance

Calendar year total returns

2014	2015	2016	2017	2018	2019	2020	2021	2022
30% REITS	5% Growth	25% Small Cap	31% Emerging Markets	0% Aggregate Bonds	31% Value	32% Growth	40% REITS	23% Commodities
13% Large Cap	2% REITS	18% Mid Cap	26% Developed Markets	-1% Growth	31% Large Cap	25% Gold	39% Commodities	0% Gold
13% Value	1% Large Cap	17% Value	26% Growth	-1% TIPS	30% Growth	18% Large Cap	31% Growth	-5% Value
12% Growth	0% Aggregate Bonds	12% Emerging Markets	21% Large Cap	-2% Gold	29% REITS	15% Emerging Markets	29% Large Cap	-12% TIPS
8% Mid Cap	0% Developed Markets	11% Commodities	15% Value	-4% Large Cap	24% Mid Cap	12% Mid Cap	27% Small Cap	-13% Aggregate Bonds
6% Aggregate Bonds	-2% TIPS	11% Large Cap	14% Mid Cap	-6% REITS	23% Small Cap	11% Small Cap	25% Value	-14% Mid Cap
6% Small Cap	-2% Small Cap	8% Gold	13% Small Cap	-8% Small Cap	22% Developed Markets	11% TIPS	23% Mid Cap	-15% Developed Markets
4% TIPS	-4% Mid Cap	8% REITS	12% Gold	-9% Value	20% Emerging Markets	9% Developed Markets	12% Developed Markets	-16% Small Cap
0% Emerging Markets	-4% Value	6% Growth	6% REITS	-12% Mid Cap	18% Gold	7% Aggregate Bonds	6% TIPS	-18% Emerging Markets
-2% Gold	-11% Gold	5% TIPS	4% Commodities	-14% Commodities	16% Commodities	1% Value	1% Emerging Markets	-18% Large Cap
-6% Developed Markets	-16% Emerging Markets	3% Aggregate Bonds	4% Aggregate Bonds	-15% Developed Markets	8% Aggregate Bonds	-5% REITS	-2% Aggregate Bonds	-26% REITS
-33% Commodities	-34% Commodities	1% Developed Markets	3% TIPS	-15% Emerging Markets	8% TIPS	-24% Commodities	-4% Gold	-29% Growth

Note: as of December 2022. Performance shown in U.S. dollars based on the following ETF tickers: large cap (SPY), mid cap (MID), small cap (IJR), growth (IUSG), value (IUSV), emerging markets (VWO), developed markets (VEA), aggregate bonds (AGG), REITS (VNQ), commodities (GSG), TIPS (TIP), gold (GLD).
Source: Piper Sandler

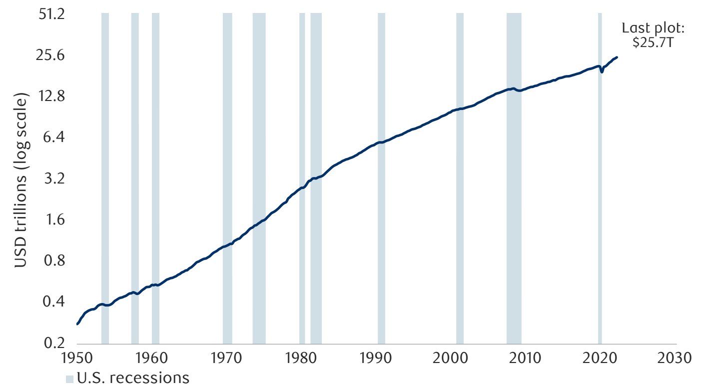
Highly volatile financial markets make forecasting a difficult exercise, particularly in the near-term, but taking a step back and looking at the bigger picture we observe durable and consistent longer term trends that provide comfort in making predictions over longer horizons. Although there have been 15 recessions in the last 70 years, U.S. nominal GDP has risen in what seems a nearly uninterrupted fashion and the downturns barely register on a multi-decade time frame (Exhibit 2). The stock market is much more volatile than the economy, but here too we observe similar long-lasting trends. Exhibit 3 plots the S&P 500 Index alongside its earnings per share dating back to 1950. Over this period there have been 8 bear markets defined by peak-to-trough declines exceeding 20% and yet the stock market has still managed to deliver impressive gains of around 10% annualized on a total return basis. To be clear, every single recession and bear market in history has been followed by a recovery that more than restored any losses through those downturns. Over very long horizons, it should be no surprise that the economy will from time to time encounter recessions and that financial assets will suffer losses. In the context of a longer term view, we think little importance should be placed on trying to time these precisely.

With these long-term trends in mind, and using a collection of four distinct models, RBC GAM's Long-Term Expected Returns Committee (LTERC) generates capital market assumptions spanning the next 10, 20 and 30 year periods (Exhibit 4). Each of the four models in our framework takes a different approach, using their own inputs and methodologies but with a common goal of arriving at multi-decade return forecasts for various asset classes. Details of these models are beyond the scope of this paper, but one point of common ground across the models is that the starting point of the forecast is critical to ultimate returns. While long-term trends and predictions about the future tend to move glacially, financial markets can swing wildly from year to year or even month to month. The massive moves we have seen in many markets over the past year have had meaningfully positive impact on our return forecasts for the decades ahead.

Last year's financial market turmoil stemmed from the sudden and substantial increase in interest rates on the back of unacceptably high inflation. Consumer prices rose at their fastest pace in four decades, in part due to pandemic-related challenges, and also due to Russia's

Exhibit 2: U.S. nominal GDP

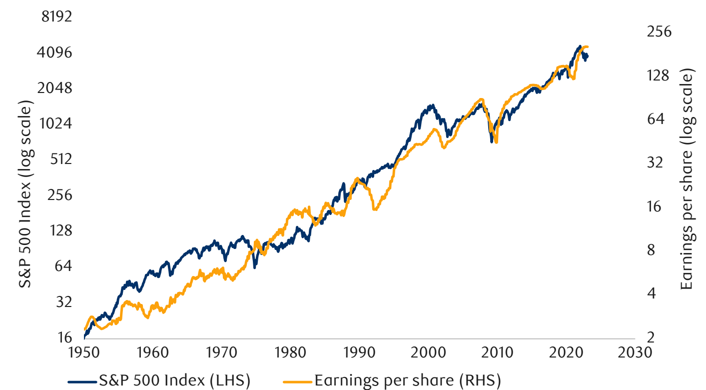
U.S. dollars, seasonally adjusted annual rate (SAAR)



Note: as of September 30, 2022. Source: Bureau of Economic Analysis

Exhibit 3: S&P 500 Index

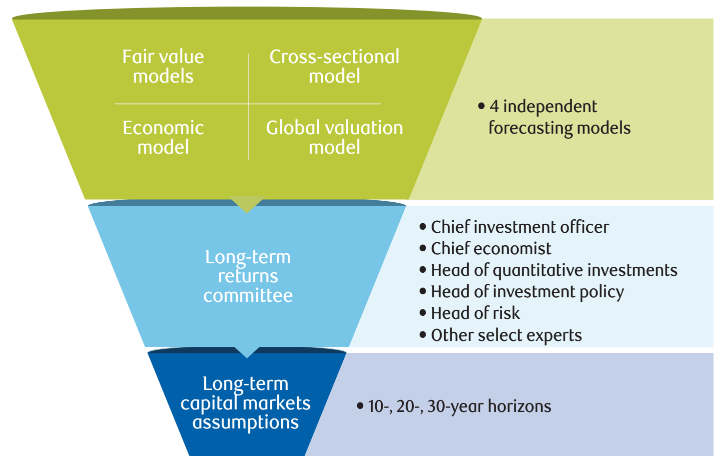
Monthly data



Note: as of January 18, 2022. Source: Bloomberg

Exhibit 4: Long-term expected returns committee

Multi-model comprehensive approach



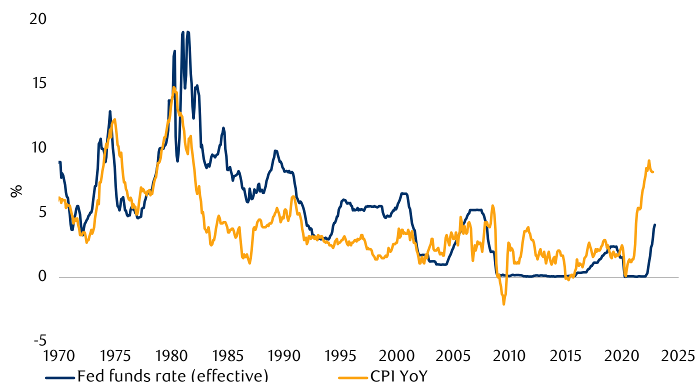
Source: RBC GAM

invasion of Ukraine which further disrupted supply chains and energy prices in particular. In response, central banks around the world simultaneously embarked on their most aggressive tightening cycle since the 1970s, featuring several jumbo-sized interest rate hikes in quick succession (Exhibit 5). In the U.S., the fed funds rate soared 425 basis points in less than a year and interest rates are now situated at their highest level since the onset of the 2008/2009 Global Financial Crisis.

The massive surge in interest rates has fundamentally altered the investing landscape for all asset classes, and especially for fixed-income investors. At the start of 2022, fixed-income investors were being offered 0% on cash, 1.5% on U.S. 10-year Treasuries, 2.4% on investment grade bonds and 4.5% on high-yield bonds (Exhibit 6). These yields were at or near historic lows due to a combination of extremely accommodative central bank policy and heightened complacency among the investors. Roll forward to early 2023 and these numbers have leaped to 4.3%, 3.5%, 5.1% and 8.2%, respectively. Yields are much more appealing and, interestingly, are now right in line with their average levels of the past 30 years.

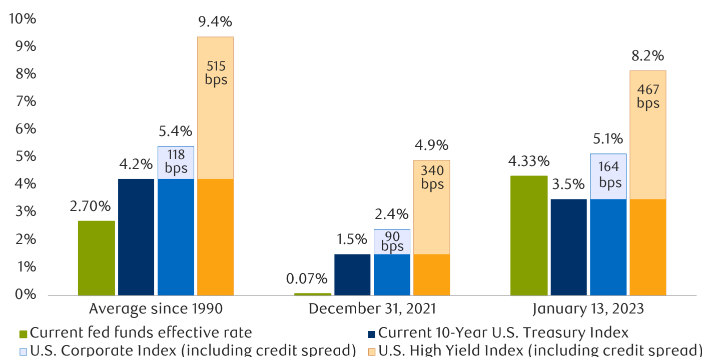
This improved starting point for interest rates is critical in establishing a forecast over the very long term. A quick rule of thumb to formulating a simple yet fairly effective forecast is to use the current yield-to-maturity of a bond. Exhibit 7 plots the relationship between 10-year Treasury yields and actual realized returns over the subsequent 10 years dating all the way back to 1910. The correlation between the two lines is almost perfect, suggesting that today's yield-to-maturity on 10-year Treasuries is a good approximation for what investors will receive by buying and holding 10-year bonds for the next decade. Last year, this forecast would have been 1.5% annualized, meaning a $10,000 investment in 10-year Treasuries at the beginning of 2022 would have grown to $11,605 by 2032. But fast forward one year, and the listed yield of 3.5% would mean a $10,000 investment could stand to turn into $14,105 by 2033, a marked boost. Although this example is highly simplified, it illustrates the importance of the current yield in generating a forecast. This notion extends, with a variety of nuances, to other areas of fixed income including investment grade and high-yield bonds, where return potential has also improved.

Exhibit 5: Inflation and Fed funds rate history



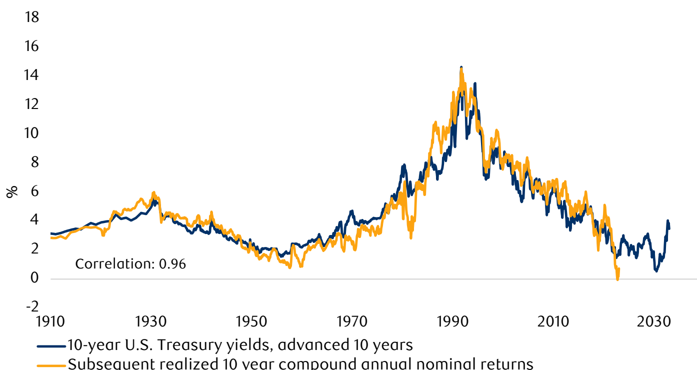
Note: as of December 31, 2022. Source: Bloomberg, RBC GAM

Exhibit 6: Yield to maturity



Note: current spread as of January 13, 2023. Shaded areas within the bars indicate the yield spread versus the U.S. 10-year Treasury bond yield. Source: ICE BofA, RBC GAM

Exhibit 7: U.S. 10-year Treasury note and returns



Note: as of January 13, 2023. Source: Deutsche Bank, Haver Analytics, RBC CM, RBC GAM

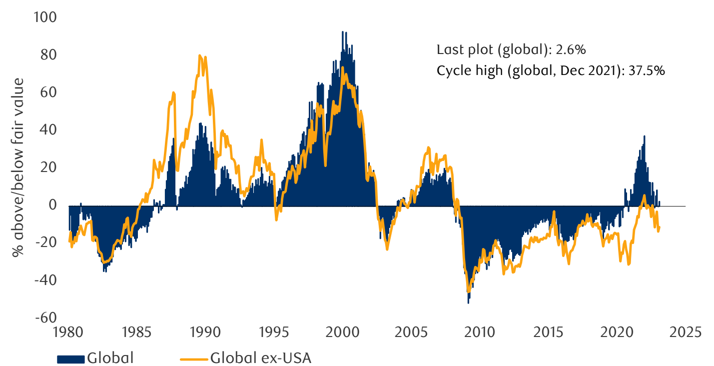
Equities, too, have undergone a massive valuation adjustment and expected returns have increased as a result. Global equities began 2022 at nearly 40% above our modelled estimate of fair value, but last year's plunge in the world's major stock markets pulled that measure down close to 0% – i.e. stocks are now trading in line with fair value (Exhibit 8). Furthermore, if we exclude the U.S. equity market, which remains one of the more expensive markets in the world, stocks are trading a 10% *discount* to fair value. As a result, the extreme overvaluation in stocks that existed at the start of last year has been erased and stocks outside the U.S. have become especially appealing on this basis.

Equity-market valuation is highly useful in predicting returns over extended time horizons. Shiller's Cyclically-Adjusted P/E ratio (CAPE) is one such valuation measure that was popularized for its strong relationship with S&P 500 returns over 10-year periods (Exhibit 9). The chart, which plots Shiller's CAPE in blue alongside 10-year returns for the S&P 500 in orange (on an inverted scale), clearly demonstrates the benefit of purchasing stocks at attractive valuations. Returns tend to be higher when stocks were cheaper (i.e. lower CAPE) at the date of the initial investment, and returns tend to be lower for positions established at points when stocks were more expensive (i.e. higher CAPE). In fact, at the start of 2022 when the CAPE was near 35x, this measure would have suggested paltry returns for the S&P 500 of just 2% per year over the subsequent decade. While we won't be able to verify the accuracy of that forecast for another 9 years, the bear market of 2022 significantly altered the prediction. At the time of this writing, the CAPE at around 25x would be consistent with an 8% per year return forecast for the S&P 500 over the next 10 years.

To further stress the importance of valuations on return forecasts, our own fair value models combine valuations and earnings predictions to generate an expected level for equity markets far into the future. Here, too, we have seen large swings in forecasts, not because the final expected ending point for the market changed a lot, but because the starting point changed materially. Exhibits 10 and 11 plot our fair value models for the S&P 500 and the MSCI Europe. Two arrows are plotted on each chart, one beginning at September 2021 and one beginning at September 2022 and ending at the mid-point of the fair value channel in 20 years' time. The S&P 500 was more than one standard deviation above fair value in late 2021, reducing the scope of investment gains available to investors, but by late 2022

Exhibit 8: Global stock market composite

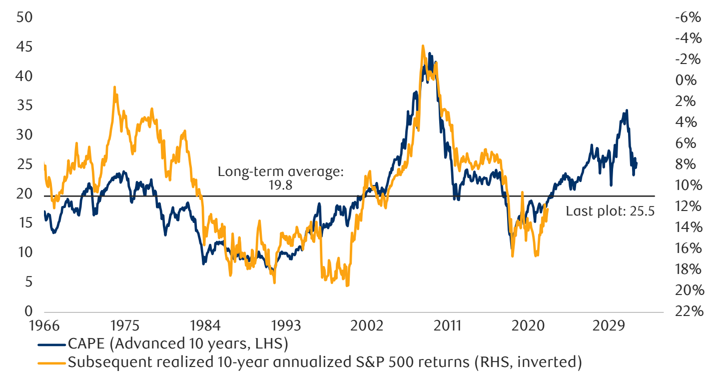
Equity market indexes relative to equilibrium



Note: as of January 18, 2023. Source: RBC GAM

Exhibit 9: Shiller's CAPE

Real S&P 500 Index / 10-year average of real EPS



Note: as of January 18, 2023. Source: Macrobond, Bloomberg, RBC GAM

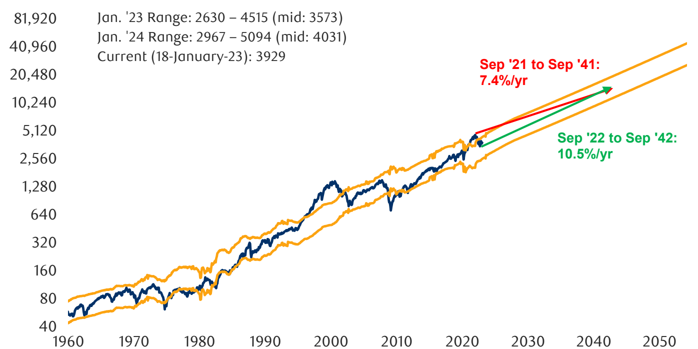
> "We encourage investors to revisit their plans on a regular basis to ensure that they remain on track to meet their long-term financial objectives."

and after more than a 20% drop in the S&P 500, stocks were trading closer to fair value and the slope of the expected path for the market steepened. Where markets trade at discounts to their fair values, such as Europe and other international markets, valuations end up being a tailwind, boosting returns given our expectation that markets ultimately will end up at their fair values over the very long term. For these reasons, our return forecasts tend to be higher in markets outside of the most expensive U.S. large-cap space.

Taken together, our capital market assumptions have been refreshed to reflect current and expected market conditions over the longer term. Exhibit 12 lists our latest forecasts for 10, 20, and 30 year horizons across a variety of asset classes. Compared to a year earlier, these return expectations have improved anywhere from 100 bps to 300 bps and in some cases even a bit more. We now look for low single digit returns for cash, mid-single digit returns on government and investment grade bonds, mid- to high-single-digit returns on high-yield bonds, and high-single-digit to low-double-digit returns for stocks. While we recognize that uncertainty is high and a wide range of outcomes is possible in the near-term, these forecasts are meant to be used as building blocks useful in long-term financial planning. We encourage investors to revisit their plans on a regular basis to ensure that they remain on track to meet their long-term financial objectives. While 2022 was difficult year for many investors, we are of the view that markets endured a painful yet welcome transition, shifting the financial landscape away from extreme valuations and low-return potential toward a more normal and encouraging environment on a go-forward basis.

Exhibit 10: S&P 500 equilibrium

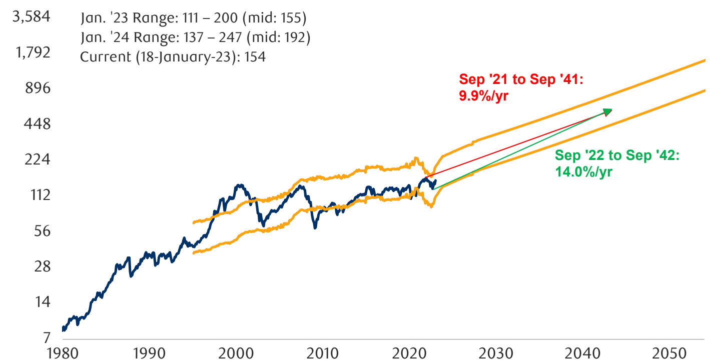
Normalized earnings & valuations



Source: RBC GAM

Exhibit 11: MSCI Europe equilibrium

Normalized earnings & valuations



Source: RBC GAM

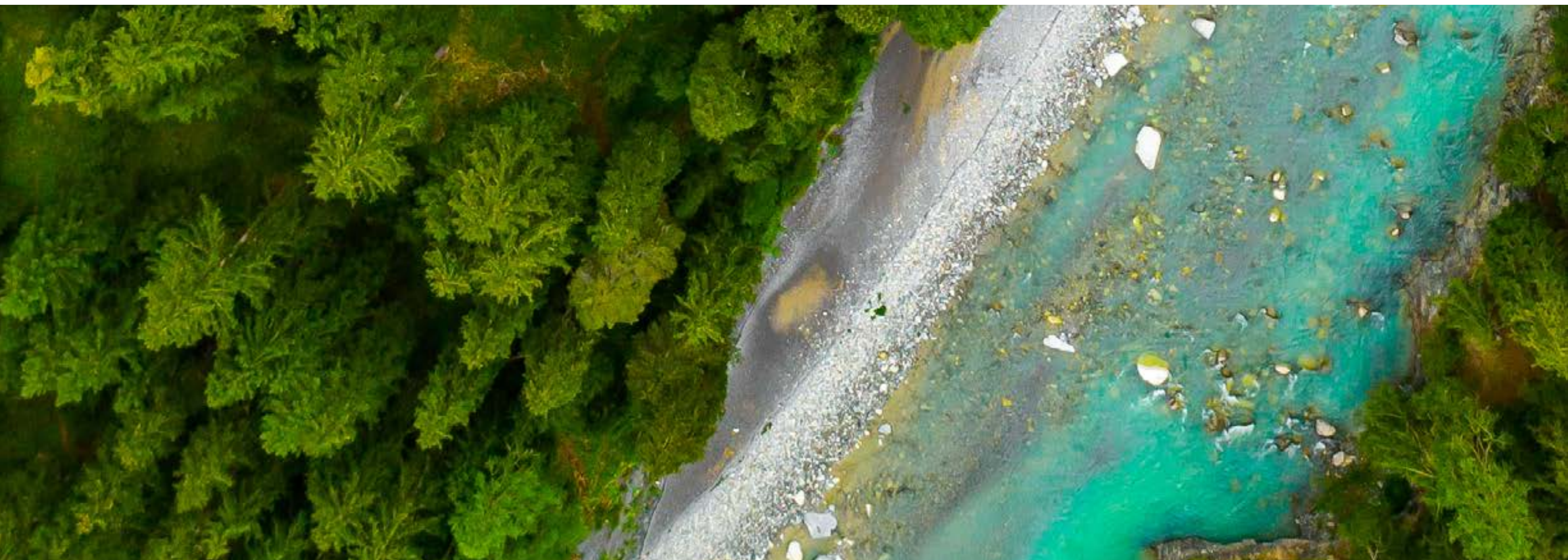


Exhibit 12: Asset assumptions

Annualized return expectation

		As of Sept. 2021	As of Sept. 2022		As of Sept. 2021	As of Sept. 2022		As of Sept. 2021	As of Sept. 2022	
Fixed Income	**Reference Index**	**10-year ER (%)**	**10-year ER (%)**	**Change**	**20-year ER (%)**	**20-year ER (%)**	**Change**	**30-year ER (%)**	**30-year ER (%)**	**Change**
US Cash	Citigroup (1 M) Treasury Bill (LOC)	1.80	3.10	1.30	2.05	3.05	1.00	2.15	3.05	0.90
CDN Cash	DEX 30 Day T-Bill	1.35	2.75	1.40	1.55	2.65	1.10	1.60	2.65	1.05
GBP Cash	United Kingdom 1-Month Bond Yield	1.85	3.10	1.25	2.00	2.95	0.95	2.05	2.90	0.85
Euro Cash	BBG Barclays Euro T-Bills 0-3 Months TR	0.80	1.65	0.85	1.00	1.65	0.65	1.10	1.70	0.60
Japan Cash	FTSE Japanese Yen Euro Deposit (1 M) (LOC)	0.35	0.30	-0.05	0.25	0.20	-0.05	0.40	0.35	-0.05
EM Cash	JP Morgan ELMI+ USD	2.80	4.00	1.20	2.80	3.95	1.15	2.75	3.95	1.20
CDN Provincial Bonds	FTSE Canada Universe Provincial Bond (CAD)	2.30	4.60	2.30	2.65	4.25	1.60	2.80	4.20	1.40
CDN Federal Bonds	FTSE Canada Federal Bond Index	1.75	3.75	2.00	2.10	3.60	1.50	2.25	3.60	1.35
CDN Government Bonds	DEX Government Bonds	2.05	4.20	2.15	2.40	3.90	1.50	2.55	3.90	1.35
CDN Corporate Bonds	DEX Corporate Bonds	3.10	5.15	2.05	3.40	4.85	1.45	3.50	4.80	1.30
CDN Universe Bonds	DEX Universe	2.35	4.45	2.10	2.65	4.20	1.55	2.80	4.15	1.35
US Government Bonds	BofAML US Gov 1-10 Yr USD	2.00	4.35	2.35	2.45	4.15	1.70	2.65	4.15	1.50
US Corporate Bonds	BofAML US Corp 1-10 Yr USD	3.25	5.80	2.55	3.75	5.50	1.75	3.95	5.45	1.50
UK Government Bonds	BofAML 1-10 Yr Gilts GBP	1.50	4.30	2.80	2.20	4.00	1.80	2.45	3.90	1.45
UK Corporate Bonds	BofAML 1-10 year Corp GBP	2.90	6.15	3.25	3.35	5.80	2.45	3.50	5.75	2.25
Euro Government Bonds	Iboxx Eurozone Sovereigns EUR	1.20	3.55	2.35	1.70	3.15	1.45	1.90	3.10	1.20
Euro Corporate Bonds	Iboxx Eurozone Corporates EUR	2.25	5.05	2.80	2.60	4.65	2.05	2.70	4.60	1.90
HSBC Asian Local Bond Index LCL	HSBC Asian Local Bond Index LCL	0.00	0.80	0.80	0.00	0.80	0.80	0.00	0.80	0.80
Citi WGBI	Citi WGBI LCL	1.50	4.10	2.60	1.80	3.35	1.55	1.95	3.30	1.35
HY Bonds	BofAML HY Master II USD	4.45	7.35	2.90	4.95	7.10	2.15	5.15	7.05	1.90
EM Bonds	JPM EMBI Global Diversified TR USD	4.25	6.70	2.45	4.50	6.00	1.50	4.65	5.85	1.20
Global Bonds	Barcap Global Agg Bond Index (USD)	2.25	4.80	2.55	2.70	4.45	1.75	2.90	4.40	1.50
Equities		**10-year ER (%)**	**10-year ER (%)**		**20-year ER (%)**	**20-year ER (%)**		**30-year ER (%)**	**30-year ER (%)**	
CDN Equities	TSX Composite	6.70	9.40	2.70	7.25	8.70	1.45	7.20	8.45	1.25
US Equities	S&P 500 TR USD	4.75	7.85	3.10	6.55	8.00	1.45	7.15	8.10	0.95
US Mid Caps	S&P 400 TR USD	7.20	11.55	4.35	7.75	9.90	2.15	7.60	9.15	1.55
US Small Caps	S&P 600 TR USD	6.80	11.90	5.10	8.40	10.55	2.15	8.50	10.00	1.50
UK Equities	FTSE AllSh TR GBP	8.75	11.25	2.50	8.25	9.60	1.35	7.75	8.75	1.00
Europe Equities ex UK	MSCI Europe ex UK LCL	7.20	9.85	2.65	7.55	9.05	1.50	7.25	8.25	1.00
Asian Equities	MSCI AC Asia Pac LCL	4.70	7.75	3.05	5.40	6.45	1.05	5.60	6.20	0.60
Japan Equities	Nikkei 225 Average PR JPY	5.75	7.60	1.85	4.95	6.10	1.15	4.65	5.45	0.80
Australian Equities	S&P/ASX 200 TR AUD	5.25	8.35	3.10	6.35	8.10	1.75	6.65	8.00	1.35
Developed Markets (World)	MSCI World LCL	5.55	8.30	2.75	6.65	8.00	1.35	6.90	7.85	0.95
EM equities	MSCI EM USD	8.80	11.50	2.70	9.70	10.55	0.85	7.50	8.70	1.20
EAFE Equities	MSCI EAFE LCL	6.45	9.00	2.55	6.70	7.95	1.25	6.55	7.40	0.85

Notes: asset assumptions as of September 30, 2022.

1. Fixed income indices may have compositional differences which could impact the comparability of return expectations between regions.
2. Fewer of our models contribute to forecasts for U.S. small cap and U.S. mid cap equities and, as a result, less breadth of information is contained in these figures as compared to other asset classes.
3. History suggests that asset valuations at the onset of an investment holding period have a meaningful impact to subsequent realized returns over long horizons. The sharp decline in global stock markets and the surge in bond yields in 2022 significantly reduced valuations and boosted return potential on a go-forward basis. As a result, our long-term return expectations for fixed income and equities have increased from a year ago.

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