RBC Global Asset Management

The Global Investment Outlook

RBC GAM Investment Strategy Committee

FALL 2022

The RBC GAM Investment Strategy Committee

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The RBC GAM Investment Strategy Committee consists of senior investment professionals drawn from all areas of RBC GAM. The Committee regularly receives economic and capital markets related input from internal and external sources. Important guidance is provided by the Committee's regional equity advisors (North America, Europe, Asia, Emerging Markets) and from the Global Fixed Income & Currencies sub-committee. From this, the Committee builds a detailed global investment forecast looking one year forward.

The Committee's view includes an assessment of global fiscal and monetary conditions, projected economic growth and inflation, as well as the expected course of interest rates, major currencies, corporate profits and stock prices.

From this global forecast, the RBC GAM Investment Strategy Committee develops specific guidelines that can be used to manage portfolios.

These include:

The recommended mix of cash, fixed income instruments, and equities.

The recommended global exposure of fixed income and equity portfolios.

The optimal term structure for fixed income investments.

The suggested sector and geographic make-up within equity portfolios.

The preferred exposure to major currencies.

Results of the Committee's deliberations are published quarterly in *The Global Investment Outlook*.

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Executive summary

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Extremely high inflation is jeopardizing four decades of central-bank credibility, and aggressive monetary tightening featuring jumbo-sized rate hikes has triggered broad-based declines in asset prices. Meanwhile, the global economy is slowing, and the path forward for the economy and markets hinges largely on whether/when price stability will be restored.

Downgrading economic forecasts again, risk of recession is elevated

The global economy is grappling with a variety of challenges. Central banks are hiking interest rates aggressively, inflation is extremely high and geopolitical tensions have led to an energy crisis in Europe. Other risks include China's troubled real-estate market, U.S. politics and the lingering effects of the pandemic. Extending the pattern of the past several quarters, the economy continues to slow and we have further downgraded our growth forecasts for the year ahead. We estimate the odds of recession at 70% in North America, with an even greater likelihood in the U.K and Eurozone. Should a recession materialize, we expect it to be of middling size and duration in the U.S. and for the economy to recover at a moderate pace thereafter. The situation is expected to be meaningfully worse in Europe and the U.K. as both regions face a spike in natural-gas prices due to Russia's war on Ukraine. For the developed world, we now forecast moderate economic growth of 2.3% in 2022, followed by just 0.3% in 2023. In emerging markets, we look for 2.8% growth in 2022 followed by an improvement to 3.8% in 2023. These figures are relatively weak by emerging-market standards and the recovery in 2023 would occur because headwinds to China's growth are expected to fade somewhat by next year.

Unacceptably high inflation appears to have peaked

There are a variety of reasons to think that inflation may have peaked and be headed toward meaningfully lower readings. Over the past year, there have been four major contributors to inflation and all of these have begun to turn. Supply-chain challenges are being resolved, commodity prices have slipped, fiscal stimulus has faded and monetary policy has flipped from easing to aggressive tightening. Moreover, our inflation-peaking scorecard reveals that the majority of inputs and signals have now reversed, suggesting inflation probably crested in June. Although there are risks that inflation could reassert itself if the pandemic flares or geopolitical tensions intensify, we anticipate substantially lower inflation in 2023. We look for U.S. inflation to fall to 3.5% by the end of 2023, while readings in the U.K. could remain more problematic given particularly high natural-gas prices and surging wage demands that have led to a wave of strikes.

U.S. dollar is extremely expensive, temporarily supported by extraordinary factors

The U.S. dollar has rallied strongly this year, gaining broadly against both developed- and emerging-market currencies. A relatively hawkish U.S. central bank, the uncertain financial-market outlook and softening global economic growth have all played roles in driving both a stronger greenback and foreign-exchange markets in general. The greenback now stands above its March 2020 highs and is extremely overvalued by most measures. In our view, the currency should weaken over the medium term, but extraordinary factors may lend further support for the rest of this year. On a 12-month horizon, we remain more constructive on the Canadian dollar and Japanese yen than we are on the euro, pound or U.S. dollar.

Central banks are committed to fighting inflation, even at the expense of the economy

While there is good reason to think inflation is already headed lower, the unpredictable nature of inflation in the post-pandemic era suggests it may be difficult for the U.S. Federal Reserve (Fed) to claim victory until inflation actually starts falling decidedly toward the 2% target. With the labour market in solid shape, the Fed can afford to be aggressive with monetary tightening. Our models suggest that the fed funds rate could rise as high as 6% from the current 2.25%-2.50% given conditions for growth, inflation and the labour market. As a result, the pressure will likely remain to the upside on rates and pricing in the futures market suggests that short-term rates could rise to 4% sometime in the first half of 2023.

Bonds extend sell-off, valuation risk diminishes

Rapidly rising interest rates have caused further declines in global government-bond prices, but we believe that any further losses will likely be limited. The World Government Bond Index (WGBI) hedged to U.S. dollars lost 10.1% between January and August, or 13% from its peak in 2020, and has erased all of the gains generated since late 2018. With the massive increase in bond yields so far this year, the acute valuation risk that existed across major developed-world sovereign-bond markets has been greatly alleviated. Our model for 10-year Treasuries suggests that government bonds have likely priced in much, or even most, of what is needed to properly reflect current and expected inflation and real interest rates. Assuming that the inflation spike subsides as we forecast, our model suggests the U.S. 10-year yield should be positioned near 3.5% in five years, not far from where it is at the time of writing. We therefore think that bond investors are more likely to keep their coupons and that the risk of fixed-income capital losses has meaningfully diminished since the start of the year.

Equities dinged by falling valuations, earnings outlook faces headwinds

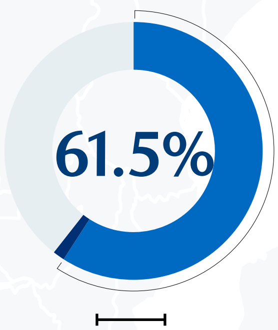
Stocks encountered significant volatility during the quarter as the fluctuating outlook for interest rates and inflation impacted valuations and a more challenging outlook for earnings came into view. The S&P 500 Index had fallen as much as 24% from its all-time high in June and almost all of this year's decline in stocks has come from shrinking valuations due to rising inflation and bond yields. As a result of the worldwide drawdown in stocks, the entire excess valuation that existed in our composite of global equity markets has been erased. Within the composite, U.S. equities remain slightly above our estimate of fair value, but stocks in other regions look more appealing. Although stocks are more reasonably priced, the focus is shifting to corporate profits which remain well above their long-term trend and may soon encounter headwinds from slowing economic growth, especially if a recession were to materialize.

Asset mix – positioning closer to a neutral stance

The macroeconomic environment is highly uncertain and we believe that the range of potential outcomes for markets continues to be especially wide. There are pathways to positive outcomes and falling valuations in both stocks and bonds have improved the return potential over the longer term. However, we remain concerned about the short-term outlook as the risk of a recession is elevated and the future path for inflation remains uncertain. The last eight months were especially difficult for balanced investors as both stocks and bonds moved lower. We acknowledge that both asset classes could continue to be adversely affected in the near term by unacceptably high inflation, although this is not our base-case scenario. At today's higher yield levels, bonds offer a much better ballast for stocks in the event of an economic downturn. Last quarter, we took advantage of the rise in U.S. 10-year yields above 3.0% to add 1.5% to our fixed-income position, sourced from both cash and stocks. Over the longer term, we continue to believe that stocks will outperform bonds, so we are maintaining a slight underweight in bonds and overweight in stocks. Reflecting our cautious stance, however, our positions are much closer to a strategic neutral setting than they've been in the past. For a balanced global investor, we currently recommend an asset mix of 61.5 percent equities (strategic neutral position: 60 percent) and 37.5 percent fixed income (strategic neutral position: 38 percent), with the balance in cash.

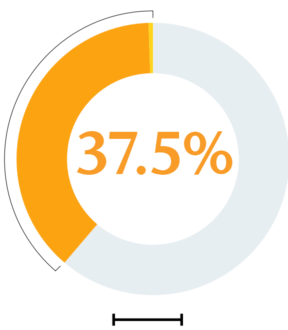
Recommended asset mix

Equities



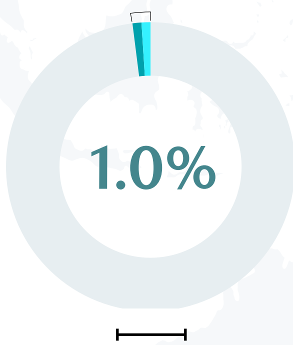
Strategic neutral position:
60 percent

Fixed income



Strategic neutral position:
38 percent

Cash



Strategic neutral position:
2 percent

Economic & capital markets forecasts

Economic forecast (RBC GAM Investment Strategy Committee)

	United States		Canada		Europe		United Kingdom		Japan		China		Emerging markets*	
	Fall 2022	Change from Summer 2022	Fall 2022	Change from Summer 2022	Fall 2022	Change from Summer 2022	Fall 2022	Change from Summer 2022	Fall 2022	Change from Summer 2022	Fall 2022	Change from Summer 2022	Fall 2022	Change from Summer 2022
Real GDP														
2021A	5.67%		4.56%		5.37%		7.44%		1.71%		8.42%		7.45%	
2022E	1.80%	(0.80)	3.40%	(0.10)	2.50%	N/C	3.50%	(0.10)	1.30%	0.50	2.90%	(1.40)	2.79%	(0.51)
2023E	0.30%	(1.10)	0.30%	(0.80)	(0.50%)	(1.40)	(0.20%)	(1.00)	1.00%	(0.20)	5.00%	0.30	3.77%	0.07
CPI														
2021A	4.69%		3.40%		2.60%		2.59%		(0.23%)		0.86%		3.08%	
2022E	8.30%	0.60	7.00%	0.50	7.50%	0.40	9.40%	1.10	2.10%	N/C	2.30%	(0.40)	5.23%	(0.54)
2023E	3.50%	0.60	3.20%	0.40	3.30%	0.90	6.70%	3.40	1.60%	0.40	2.40%	(0.50)	3.38%	(0.41)

A = Actual E = Estimate *GDP Weighted Average of China, India, South Korea, Brazil, Mexico and Russia.

Targets (RBC GAM Investment Strategy Committee)

	August 2022	Forecast August 2023	Change from Summer 2022	1-year total return estimate* (%)
Currency markets against USD				
CAD (USD–CAD)	1.31	1.19	N/C	10.6
EUR (EUR–USD)	1.01	1.13	(0.03)	10.2
JPY (USD–JPY)	138.97	118.00	N/C	13.4
GBP (GBP–USD)	1.16	1.28	(0.07)	9.4
Fixed income markets				
U.S. Fed Funds Rate	2.38	3.50	0.75	0.0
U.S. 10-Year Bond	3.19	3.00	0.25	4.9
Canada Overnight Rate	2.50	3.50	1.00	0.0
Canada 10-Year Bond	3.12	2.75	0.15	6.3
Eurozone Deposit Facility Rate	0.00	1.50	1.50	0.0
Germany 10-Year Bund	1.54	1.50	1.00	1.9
U.K. Base Rate	1.75	3.00	1.00	0.0
U.K. 10-Year Gilt	2.80	2.75	0.50	3.3
Japan Overnight Call Rate	(0.04)	(0.10)	N/C	0.0
Japan 10-Year Bond	0.23	0.25	N/C	(0.0)
Equity markets				
S&P 500	3955	4200	(200)	7.8
S&P/TSX Composite	19331	19900	(1600)	6.2
MSCI Europe	139	150	(3)	11.4
FTSE 100	7284	7750	(30)	10.7
Nikkei	28092	29750	1700	8.1
MSCI Emerging Markets	994	1050	(50)	9.0

*Total returns are expressed in local currencies with the exception of MSCI Emerging Markets whose return is expressed in USD. Source: RBC GAM

Recommended asset mix

Asset mix – the allocation within portfolios to stocks, bonds and cash – should include both strategic and tactical elements. Strategic asset mix addresses the blend of the major asset classes offering the risk/return tradeoff best suited to an investor's profile. It can be considered to be the benchmark investment plan that anchors a portfolio through many business and investment cycles, independent of a near-term view of the prospects for the economy and related expectations for capital markets. Tactical asset allocation refers to fine tuning around the strategic setting in an effort to add value by taking advantage of shorter-term fluctuations in markets.

Every individual has differing return expectations and tolerances for volatility, so there is no "one size fits all" strategic asset mix. Based on a 40-year study of historical returns[1] and the volatility[2] of returns (the range around the average return within which shorter-term results tend to fall), we have developed five broad profiles and assigned a benchmark strategic asset mix for each. These profiles range from very conservative through balanced to aggressive growth. It goes without saying that as investors accept increasing levels of volatility, and therefore greater risk that the actual experience will depart from the longer-term norm, the potential for returns rises. The five profiles presented below may assist investors in selecting a strategic asset mix best aligned to their investment goals.

Each quarter, the RBC GAM Investment Strategy Committee publishes a recommended asset mix based on our current view of the economy and return expectations for the major asset classes. These weights are further divided into recommended exposures to the variety of global fixed income and equity markets. Our recommendation is targeted at the Balanced profile where the benchmark (strategic neutral) setting is 60% equities, 38% fixed income, and 2% cash.

A tactical range of +/- 15% around the benchmark position allows us to raise or lower exposure to specific asset classes with a goal of tilting portfolios toward those markets that offer comparatively attractive near-term prospects.

This tactical recommendation for the Balanced profile can serve as a guide for movement within the ranges allowed for all other profiles.

The value-added of tactical strategies is, of course, dependent on the degree to which the expected scenario unfolds.

Regular reviews of portfolio weights are essential to the ultimate success of an investment plan as they ensure current exposures are aligned with levels of long-term returns and risk tolerances best suited to individual investors.

Anchoring portfolios with a suitable strategic asset mix, and placing boundaries defining the allowed range for tactical positioning, imposes discipline that can limit damage caused by swings in emotion that inevitably accompany both bull and bear markets.

[1]**Average return**: The average total return produced by the asset class over the period 1982 – 2022, based on monthly results.

[2]**Volatility**: The standard deviation of returns. Standard deviation is a statistical measure that indicates the range around the average return within which 2/3 of results will fall into, assuming a normal distribution around the long-term average.

Global asset mix

	Benchmark policy	Allowable range	Fall 2021	New Year 2022	Spring 2022	Summer 2022	Fall 2022
Cash	**2.0%**	0.0% – 15.0%	2.5%	3.0%	2.0%	1.5%	**1.0%**
Bonds	**38.0%**	23.0% – 53.0%	33.5%	33.5%	34.0%	36.0%	**37.5%**
Stocks	**60.0%**	45.0% – 75.0%	64.0%	63.5%	64.0%	62.5%	**61.5%**

Note: Effective June 1, 2020, we reset our strategic neutral positions to reflect long-lasting changes in economy and capital markets' dynamics. Boosting strategic neutral equity exposure by 5% and reducing fixed income by same amount in our reference balanced portfolio.

Regional allocation

Global bonds	WGBI* August 2022	Allowable range	Fall 2021	New Year 2022	Spring 2022	Summer 2022	Fall 2022
North America	**47.7%**	37.7% – 57.7%	39.7%	46.1%	39.4%	48.7%	**45.2%**
Europe	**35.2%**	25.2% – 45.2%	41.0%	42.5%	41.7%	39.0%	**40.2%**
Asia	**17.1%**	7.1% – 27.1%	19.3%	11.5%	18.9%	12.4%	**14.6%**

Global equities	MSCI** August 2022	Allowable range	Fall 2021	New Year 2022	Spring 2022	Summer 2022	Fall 2022
North America	**70.4%**	60.4% – 80.4%	66.8%	67.8%	68.9%	68.8%	**70.0%**
Europe	**13.8%**	3.8% – 23.8%	16.2%	15.5%	14.9%	15.4%	**14.0%**
Asia	**7.5%**	0.0% – 17.5%	8.4%	8.2%	7.9%	7.9%	**8.1%**
Emerging markets	**8.3%**	0.0% – 18.3%	8.6%	8.6%	8.3%	7.9%	**7.9%**

Our asset mix is reported as at the end of each quarter. The mix is fluid and may be adjusted within each quarter, although we do not always report on shifts as they occur. The weights in the table should be considered a snapshot of our asset mix at the date of release of the Global Investment Outlook.

Global equity sector allocation

	MSCI** August 2022	RBC GAM ISC Summer 2022	RBC GAM ISC Fall 2022	Change from Summer 2022	Weight vs. benchmark
Energy	4.65%	6.60%	6.65%	0.05	143.0%
Materials	4.07%	4.62%	2.77%	(1.85)	68.1%
Industrials	10.05%	10.02%	10.85%	0.83	108.0%
Consumer discretionary	11.41%	9.12%	11.41%	2.29	100.0%
Consumer staples	7.49%	8.71%	8.49%	(0.22)	113.3%
Health care	13.32%	15.37%	15.32%	(0.05)	115.0%
Financials	13.18%	13.55%	11.78%	(1.76)	89.4%
Information technology	22.54%	21.61%	23.54%	1.93	104.4%
Communication services	7.31%	6.40%	5.81%	(0.59)	79.5%
Utilities	3.11%	2.06%	2.11%	0.05	67.9%
Real estate	2.86%	1.93%	1.26%	(0.68)	44.0%

*FTSE World Government Bond Index. **MSCI World Index. Source: RBC GAM Investment Strategy Committee

At RBC GAM, we have a team dedicated to setting and reviewing the strategic asset mix for all of our multi-asset solutions. With an emphasis on consistency of returns, risk management and capital preservation, we have developed a strategic asset allocation framework for five client risk profiles that correspond to broad investor objectives and risk preferences. These five profiles range from Very Conservative through Balanced to Aggressive Growth.

Very Conservative

Asset class	Bench-mark	Range	Last quarter	Current recommendation
Cash & Cash Equivalents	2%	0-15%	1.0%	1.0%
Fixed Income	73%	68-88%	71.5%	72.5%
Total Cash & Fixed Income	75%	60-90%	72.5%	73.5%
Canadian Equities	10%	0-20%	11.0%	10.5%
U.S. Equities	8%	0-18%	8.6%	8.4%
International Equities	7%	0-17%	7.9%	7.6%
Emerging Markets	0%	0%	0.0%	0.0%
Total Equities	25%	10-40%	27.5%	26.5%

	Return	Volatility
40-year average	8.0%	4.9%
Last 12 months	-10.3%	7.9%

Very Conservative investors will seek income with maximum capital preservation and the potential for modest capital growth, and be comfortable with small fluctuations in the value of their investments. This portfolio will invest primarily in fixed-income securities, and a small amount of equities, to generate income while providing some protection against inflation. Investors who fit this profile generally plan to hold their investment for the medium to long term.

Conservative

Asset class	Bench-mark	Range	Last quarter	Current recommendation
Cash & Cash Equivalents	2%	0-15%	1.0%	1.0%
Fixed Income	58%	43-83%	56.5%	57.5%
Total Cash & Fixed Income	60%	45-75%	57.5%	58.5%
Canadian Equities	13%	3-23%	13.8%	13.4%
U.S. Equities	15%	5-25%	15.7%	15.4%
International Equities	12%	2-22%	13.0%	12.7%
Emerging Markets	0%	0%	0.0%	0.0%
Total Equities	40%	25-55%	42.5%	41.5%

	Return	Volatility
40-year average	8.4%	6.1%
Last 12 months	-10.0%	8.7%

Conservative investors will pursue modest income and capital growth with reasonable capital preservation, and be comfortable with moderate fluctuations in the value of their investments. The portfolio will invest primarily in fixed-income securities, with some equities, to achieve more consistent performance and provide a reasonable amount of safety. The profile is suitable for investors who plan to hold their investment over the medium to long term.

Balanced

Asset class	Bench-mark	Range	Last quarter	Current recommendation
Cash & Cash Equivalents	2%	0-15%	1.0%	1.0%
Fixed Income	38%	23-53%	36.5%	37.5%
Total Cash & Fixed Income	40%	25-55%	37.5%	38.5%
Canadian Equities	15%	5-25%	15.6%	15.3%
U.S. Equities	25%	15-35%	25.8%	25.5%
International Equities	15%	5-25%	16.1%	15.8%
Emerging Markets	5%	0-15%	5.0%	4.9%
Total Equities	60%	45-75%	62.5%	61.5%

	Return	Volatility
40-year average	8.8%	7.7%
Last 12 months	-10.1%	9.5%

The **Balanced** portfolio is appropriate for investors seeking balance between long-term capital growth and capital preservation, with a secondary focus on modest income, and who are comfortable with moderate fluctuations in the value of their investments. More than half the portfolio will usually be invested in a diversified mix of Canadian, U.S. and global equities. This profile is suitable for investors who plan to hold their investment for the medium to long term.

Growth

Asset class	Bench-mark	Range	Last quarter	Current recommendation
Cash & Cash Equivalents	2%	0-15%	1.0%	1.0%
Fixed Income	23%	8-38%	21.5%	22.5%
Total Cash & Fixed Income	25%	10-40%	22.5%	23.5%
Canadian Equities	18%	8-28%	18.6%	18.2%
U.S. Equities	30%	20-40%	30.7%	30.5%
International Equities	19%	9-29%	20.2%	19.9%
Emerging Markets	8%	0-18%	8.0%	7.9%
Total Equities	75%	60-90%	77.5%	76.5%

	Return	Volatility
40-year average	9.0%	9.5%
Last 12 months	-10.1%	10.2%

Investors who fit the **Growth** profile will seek long-term growth over capital preservation and regular income, and be comfortable with considerable fluctuations in the value of their investments. This portfolio primarily holds a diversified mix of Canadian, U.S. and global equities and is suitable for investors who plan to invest for the long term.

Aggressive Growth

Asset class	Bench-mark	Range	Last quarter	Current recommendation
Cash & Cash Equivalents	2%	0-15%	1.0%	1.5%
Fixed Income	0%	0-15%	0.0%	0.0%
Total Cash & Fixed Income	2%	0-17%	1.0%	1.5%
Canadian Equities	29%	19-39%	29.3%	29.0%
U.S. Equities	38%	28-48%	37.9%	37.9%
International Equities	20%	10-30%	21.0%	20.9%
Emerging Markets	11%	1-21%	10.8%	10.7%
Total Equities	98%	83-100%	99.0%	98.5%

	Return	Volatility
40-year average	9.5%	11.9%
Last 12 months	-9.3%	11.7%

Aggressive Growth investors seek maximum long-term growth over capital preservation and regular income, and are comfortable with significant fluctuations in the value of their investments. The portfolio is almost entirely invested in stocks and emphasizes exposure to global equities. This investment profile is suitable only for investors with a high risk tolerance and who plan to hold their investments for the long term.

Capital markets performance

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The U.S. dollar gained against other major currencies during the quarter ended August 31, 2022, fueled by a combination of aggressive U.S. interest-rate hikes, volatile financial markets and slowing economic momentum. The U.S. dollar appreciated 8.5% against the British pound, 7.9% against the Japanese yen, 6.8% against the euro and 3.8% against the Canadian dollar. Sterling had the worst decline as the Bank of England lagged the U.S. Federal Reserve (Fed) in raising interest rates given the U.K. economy's outsized exposure to higher energy prices and highest current-account deficit in 50 years. The yen weakened as Japanese investors flocked to higher-returning assets overseas, especially U.S. Treasuries. Europe's problems are plentiful and include the war in Ukraine, an energy crisis and political uncertainty. As a result, the euro was down sharply against the U.S. dollar. The Canadian dollar held up relatively well against the greenback as the Bank of Canada kept pace with the Fed in raising interest rates to combat elevated inflation. The loonie was also supported by high commodity prices, especially energy, stock-market outperformance and a current-account surplus. Over the one-year period, the U.S. dollar strengthened 26.3% against the yen, 18.3% against sterling, 17.5% against the euro and 4.1% against the Canadian dollar.

Global fixed-income markets posted losses in the latest quarter in U.S.-dollar terms. Bond investors were hit by broad U.S.-dollar strength, rising bond yields, stubbornly high inflation and related central-bank efforts to snuff it out. The FTSE U.S. Government Bond Index fared best with a 2.0% decline, compared with a 9.8% drop for the FTSE European Government Bond Index, the worst-performing index. The yield on the 10-year Treasury bond ended the period at 3.19%, up from 2.84% the previous quarter, and fluctuated within a range of 2.51% and 3.50% as investors wrestled with uneasiness about inflation and the economy. Over the 12-month period, all major benchmark indexes recorded double-digit declines, with the FTSE European Government Bond Index's 28.3% tumble measured in U.S. dollars being the worst. The Barclays Capital Aggregate Bond Index dropped the least, with an 11.5% fall.

All major equity markets declined during the quarter amid an abundance of investor angst about rising consumer prices, increasing borrowing costs and decelerating economic growth. U.S. stocks performed best in this environment, with the S&P 500 Index falling 3.9% and sinking as much as 23.5% from its January all-time high. Most of the downturn in stocks was due to falling valuations in response to rising interest rates and moderating investor confidence, as corporate profit forecasts have remained resilient.

German stocks experienced the biggest losses as the MSCI Germany Index plunged 17.1% in U.S.-dollar terms, reflecting energy-related difficulties facing the country's industry-heavy economy. Over the one-year period, performance ranged from a loss of 35.0% for the MSCI Germany Index to a 7.2% decline in the S&P/TSX Composite Index, all in U.S. dollars.

U.S. stock performance was similar across market capitalizations in the latest quarter as the S&P 500, S&P 400 and S&P 600 indexes lost between 2.9% and 3.9%. Growth stocks regained some lost ground on value stocks, as investors valued dependable earnings growth in an economic slowdown, and valuation concerns were alleviated by the notion that inflation may be peaking. The Russell 3000 Growth Index was down 1.4% while the Russell 3000 Value Index lost 5.5%. All 11 global equity sectors recorded declines. The Consumer Discretionary sector performed best with 0.9% drop while receding commodity prices brought the Materials sector down 15.0%. Over a one-year time frame, only two sectors recorded gains: the Energy sector, with a 54.0% return, and the Utilities sector, which rose 0.4%. The Communication Services had the biggest decline at 34.1%.

Exchange rates
Periods ending August 31, 2022

	Current USD	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)
USD–CAD	1.3134	3.83	3.86	4.10	(0.45)	1.01
USD–EUR	0.9951	6.83	13.21	17.49	3.03	3.45
USD–GBP	0.8608	8.47	16.46	18.35	1.56	2.17
USD–JPY	138.9250	7.92	20.71	26.28	9.35	4.79

Note: all changes above are expressed in US dollar terms

Canada fixed income markets
Periods ending August 31, 2022

	USD					CAD		
Fixed income markets: Total return	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)	3 months (%)	1 year (%)	3 years (%)
FTSE Canada Univ. Bond Index TR	(4.80)	(14.61)	(14.75)	(2.17)	(0.51)	(1.15)	(11.26)	(2.61)

U.S. fixed income markets
Periods ending August 31, 2022

	USD					CAD		
Fixed income markets: Total return	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)	3 months (%)	1 year (%)	3 years (%)
FTSE U.S. Government TR	(2.01)	(10.95)	(11.76)	(2.02)	0.53	1.75	(8.14)	(2.46)
BBg U.S. Agg. Bond Index TR[1]	(2.01)	(10.75)	(11.52)	(2.00)	0.52	1.74	(7.89)	(2.44)

Global fixed inxome markets
Periods ending August 31, 2022

	USD					CAD		
Fixed income markets: Total return	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)	3 months (%)	1 year (%)	3 years (%)
FTSE WGBI TR	(5.10)	(16.09)	(18.45)	(4.79)	(1.69)	(1.46)	(15.11)	(5.22)
FTSE European Government TR	(9.78)	(24.44)	(28.33)	(8.24)	(4.40)	(6.32)	(25.39)	(8.66)
FTSE Japanese Government TR	(8.08)	(20.06)	(24.03)	(10.83)	(4.87)	(4.56)	(20.92)	(11.23)

Canada equity markets
Periods ending August 31, 2022

	USD					CAD		
Equity markets: Total return	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)	3 months (%)	1 year (%)	3 years (%)
S&P/TSX Composite	(9.46)	(10.64)	(7.18)	9.25	7.03	(5.99)	(3.38)	8.75
S&P/TSX 60	(9.73)	(11.03)	(6.26)	9.77	7.78	(6.27)	(2.42)	9.27
S&P/TSX Small Cap	(12.51)	(13.29)	(10.97)	8.57	3.32	(9.15)	(7.32)	8.08

U.S. equity markets
Periods ending August 31, 2022

	USD					CAD		
Equity markets: Total return	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)	3 months (%)	1 year (%)	3 years (%)
S&P 500 TR	(3.88)	(16.14)	(11.23)	12.39	11.82	(0.20)	(7.59)	11.88
S&P 400 TR	(2.92)	(13.58)	(10.37)	10.58	8.71	0.80	(6.70)	10.08
S&P 600 TR	(3.80)	(14.74)	(12.12)	10.40	8.65	(0.11)	(8.52)	9.90
Russell 3000 Value TR	(5.51)	(10.00)	(6.49)	8.95	7.77	(1.88)	(2.66)	8.46
Russell 3000 Growth TR	(1.38)	(23.13)	(19.44)	13.95	14.23	2.40	(16.14)	13.43
NASDAQ Composite Index TR	(1.99)	(24.07)	(21.99)	14.98	13.98	1.77	(18.80)	14.46

Note: All rates of return presented for periods longer than 1 year are annualized. [1] Bloomberg U.S. Agg. Bond Index TR. Source: RBC GAM

Global equity markets
Periods ending August 31, 2022

	USD					CAD		
Equity markets: Total return	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)	3 months (%)	1 year (%)	3 years (%)
MSCI World TR *	(5.53)	(17.78)	(15.08)	8.77	7.85	(2.19)	(11.99)	8.25
MSCI EAFE TR *	(9.28)	(19.57)	(19.80)	2.39	1.63	(6.07)	(16.89)	1.90
MSCI Europe TR *	(11.38)	(22.05)	(21.57)	2.22	1.23	(8.24)	(18.72)	1.73
MSCI Pacific TR *	(5.62)	(14.90)	(16.68)	2.57	2.27	(2.28)	(13.65)	2.07
MSCI UK TR *	(10.55)	(10.77)	(7.66)	2.74	1.45	(7.38)	(4.30)	2.24
MSCI France TR *	(10.70)	(22.43)	(20.47)	2.36	2.30	(7.54)	(17.57)	1.87
MSCI Germany TR *	(17.09)	(31.65)	(34.96)	(3.30)	(3.92)	(14.15)	(32.59)	(3.77)
MSCI Japan TR *	(5.13)	(17.87)	(18.96)	2.31	1.97	(1.77)	(16.01)	1.82
MSCI Emerging Markets TR *	(6.49)	(17.49)	(21.80)	2.74	0.59	(3.18)	(18.96)	2.24

Global equity sectors
Periods ending August 31, 2022

	USD					CAD		
Sector: Total return	3 months (%)	YTD (%)	1 year (%)	3 years (%)	5 years (%)	3 months (%)	1 year (%)	3 years (%)
Energy TR *	(7.60)	34.79	54.02	12.44	7.12	(4.33)	59.62	11.89
Materials TR *	(15.02)	(16.98)	(15.45)	8.98	5.48	(12.01)	(12.37)	8.46
Industrials TR *	(3.88)	(17.90)	(17.18)	5.65	4.99	(0.48)	(14.17)	5.14
Consumer discretionary TR *	(0.89)	(24.92)	(20.56)	9.47	9.75	2.62	(17.67)	8.94
Consumer staples TR *	(2.44)	(8.85)	(4.11)	4.66	5.13	1.01	(0.62)	4.15
Health care TR *	(6.03)	(12.97)	(11.02)	10.36	8.86	(2.71)	(7.78)	9.83
Financials TR *	(8.17)	(15.52)	(13.51)	6.35	3.76	(4.93)	(10.36)	5.84
Information technology TR *	(4.11)	(25.23)	(20.17)	17.36	17.04	(0.72)	(17.27)	16.79
Communication services TR*	(8.81)	(28.79)	(34.11)	2.67	3.34	(5.58)	(31.71)	2.17
Utilities TR *	(3.66)	(2.93)	0.41	5.69	6.28	(0.25)	4.06	5.18
Real estate TR *	(6.36)	(18.64)	(14.95)	0.61	3.41	(3.04)	(11.86)	0.12

* Net of taxes. Note: all rates of return presented for periods longer than 1 year are annualized. Source: Bloomberg/MSCI

Economic outlook
Abating inflation, awaiting recession

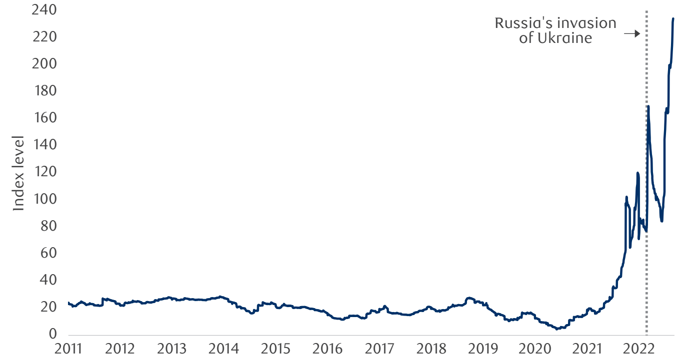
Eric Lascelles
Chief Economist
RBC Global Asset Management Inc.

The global economy remains in the grip of several malevolent trends. Inflation is still far too high, central banks continue to drive interest rates briskly upward, economic growth continues to decelerate, and a recession remains likely across most of the developed world. The outlook has deteriorated further in the EU and U.K. as natural-gas prices spike on withheld Russian supply (Exhibit 1). Geopolitical worries have also increased as Taiwan joins Ukraine on the list of hotspots.

But there are also important pockets of improvement providing a welcome, if incomplete, offset. Crucially, inflation has eased slightly in North America, and the four main drivers of high inflation should theoretically continue to abate.

Similarly, although measures of economic confidence have collapsed and measures of intentions to spend, invest and hire have fallen significantly, the pace of economic activity itself has decelerated only slightly (Exhibit 2). It is likely that this mismatch is simply a function of timing, but perhaps a hidden reservoir of economic resilience exists.

Exhibit 1: Natural-gas prices in Germany surged amid Russian threats



Note: As of 08/30/2022. Source: Intercontinental Exchange, Macrobond, RBC GAM

Exhibit 2: Economy sliding toward downturn

Confidence	Intentions	Activity
Extremely weak • Consumer • Business	**Weak/weakening** • Consumer spending • Business investment • Hiring	**Starting to weaken** • Consumer spending • Hiring • Housing • Inventories

Source: RBC GAM as at 07/22/2022

From a financial-market perspective, caution arguably remains appropriate: inflation is not yet fully tamed, further monetary tightening awaits and a recession would likely trigger a decline in corporate earnings and valuations. But the worst-case scenario, where inflation becomes structurally stuck at an extremely high level, has become materially less likely.

Forecasts continue to tumble

The combination of higher fuel costs, higher food costs and higher interest rates has cratered consumer confidence around the world (Exhibit 3). The fastest rise in nominal wages in years can't mask the reality that inflation-adjusted wages are falling sharply (Exhibit 4). Accordingly, consumers now profess little appetite for big-ticket items (Exhibit 5) and have expressed a general distaste for spending in this high-inflation environment. Elevated household wealth should, fortunately, provide a partial buffer against difficult economic conditions.

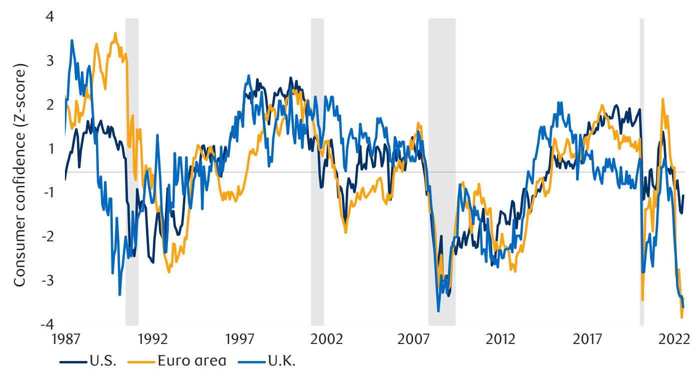
Financial conditions have tightened significantly over the past year (Exhibit 6). Business expectations have accordingly soured (Exhibit 7), with capital-expenditure plans retreating and hinting of layoffs to come (Exhibit 8).

From a public-sector perspective, a significant if underappreciated fiscal drag persists, even after accounting for a smattering of new spending initiatives in China, the U.S. and Europe. Simply put, governments are spending less than their massive outlays in 2020 and 2021. The Chinese economy, long the biggest driver of global economic growth, is hobbled by a range of factors that prevent it from generating its usual support for the global economy – a subject tackled in more detail later.

To be sure, not all is sour in the world. Let us not forget that pandemic-motivated restrictions, which caused the deepest recession of the past century, are now mostly gone. Supply chains are also beginning to improve, inflation appears to be starting to fall and the price of oil is off its summer peak.

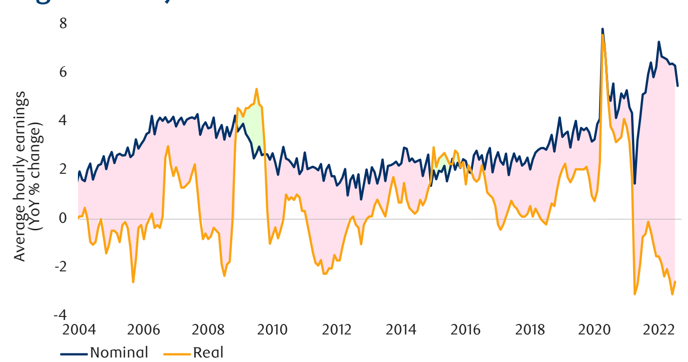
For several quarters, our forecasts have anticipated not just an economic deceleration but a likely recession. This has translated into below-consensus GDP growth forecasts. We have further downgraded the growth outlook for the year ahead in light of the high probability of recession (Exhibit 9). For the developed world as a whole, we now anticipate

Exhibit 3: Consumer confidence has fallen sharply



Note: As of Aug 2022. Shaded area represents U.S. recession. Source: The Conference Board, European Commission (DG ECFIN), GfK UK, University of Michigan, Macrobond, RBC GAM

Exhibit 4: Real wage growth in U.S. has dropped significantly

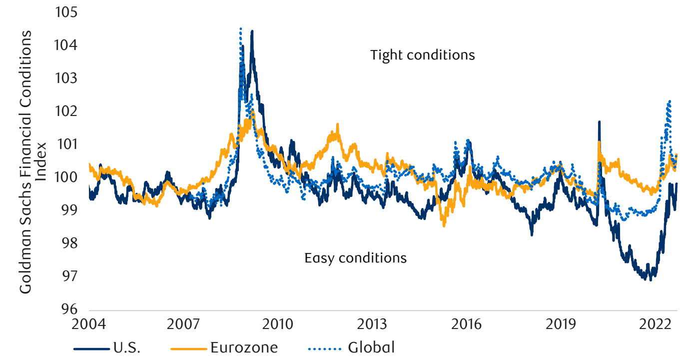


Note: Nominal earnings as of Aug 2022, real earnings as of Jul 2022. Average hourly earnings of production and non-supervisory employees. Source: U.S. BLS, Macrobond, RBC GAM

Exhibit 5: U.S. consumers – not a good time to purchase large durable household goods

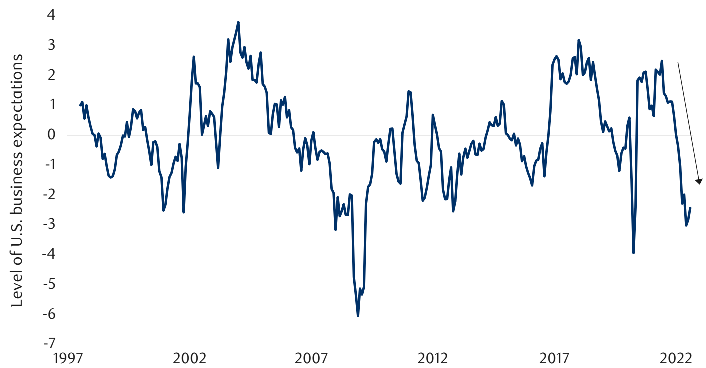
Note: As of Jul 2022. Source: University of Michigan, Macrobond, RBC GAM

Exhibit 6: Global financial conditions tightened significantly



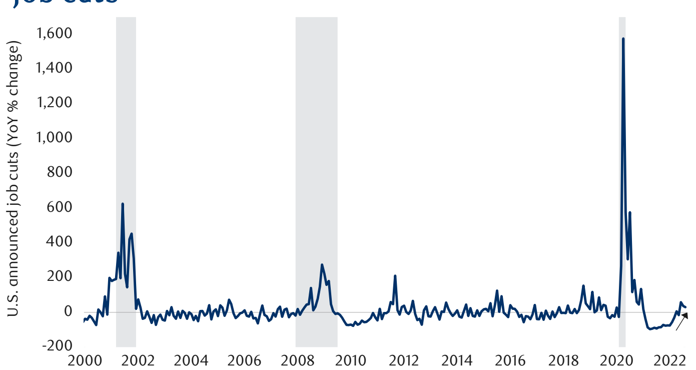
Note: As of 9/5/2022. Source: Goldman Sachs, Bloomberg, RBC GAM

Exhibit 7: U.S. business expectations have fallen



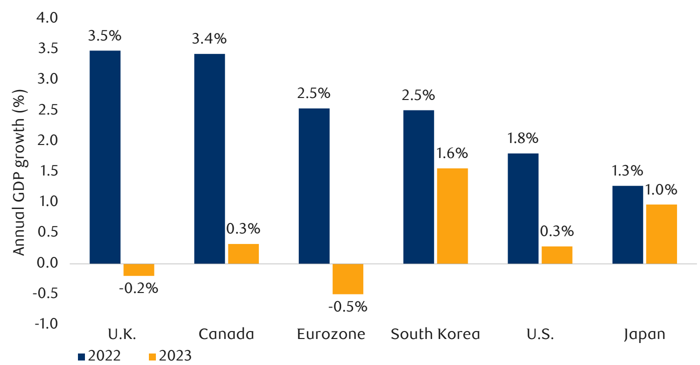
Note: As of Aug 2022. Principal component analysis using NFIB optimism and business conditions outlook, ISM Manufacturing and Services new orders, and The Conference Board CEO expectations for economy. Source: The Conference Board, ISM, NFIB, Macrobond, RBC GAM

Exhibit 8: U.S. companies are announcing more job cuts



Note: As of Aug 2022. Source: Challenger, Gray & Christmas, Inc., Macrobond, RBC GAM

Exhibit 9: RBC GAM GDP forecast for developed markets



Note: As of 09/01/2022. Source: RBC GAM

modest economic growth of 2.3% in 2022, followed by a bare 0.3% in 2023 (recall that an economy need not shrink across an entire year for a recession to transpire).

Emerging economies are expected to record weak economic growth in both 2022 and 2023. The 2022 outlook is exceptionally weak (+2.8%), whereas 2023 is projected to be somewhat less meagre (+3.8%). The recovery is entirely because China's growth headwinds should be slightly less fierce in 2023. Emerging-market economies are generally more adversely affected than developed economies by higher food prices, rising interest rates and a strong U.S. dollar (Exhibit 10).

> "A recession remains likely over the coming year for most of the developed world."

Assessing recession odds

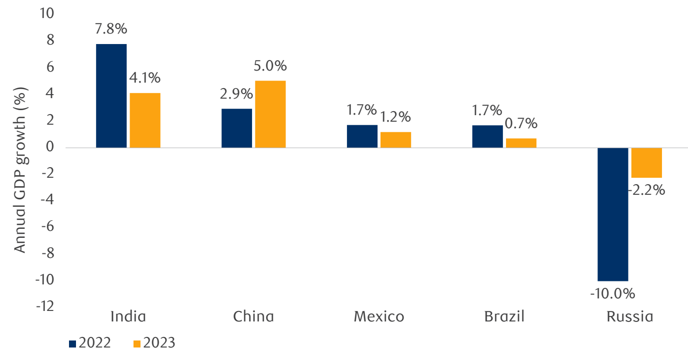
A recession remains likely over the coming year for most of the developed world. The probability in the U.S. and Canada is in the realm of 70%, with an even greater likelihood in the U.K. and Eurozone.

A slight majority of the U.S. recession indicators we monitor are now signalling recession (Exhibit 11). If one includes metrics that appear to be on the cusp of signalling recession, it is the vast majority of the indicators. To illustrate, of the three key recession indicators that examine the slope of different portions of the yield curve, one spread has inverted and thus signals recession, while the other two have not yet inverted but are seemingly racing toward that conclusion (Exhibit 12).

Our U.S. business-cycle scorecard has similarly leapt forward, advancing from a "mid cycle" reading a quarter ago (albeit with strong hints of "late cycle), to an "end of cycle" reading today (Exhibit 13). This phase is normally just a brief way station before recession. This business cycle is running at about four times the pace of the prior cycle.

Although metrics of real economic activity – actual spending, rather than mere surveys – have remained fairly resilient so far, the housing sector has not been so lucky (Exhibit 14). Housing is the most interest-rate-sensitive sector of the economy, and is clearly now suffering as interest rates rise. The business-inventory cycle has also

Exhibit 10: RBC GAM GDP forecast for emerging markets



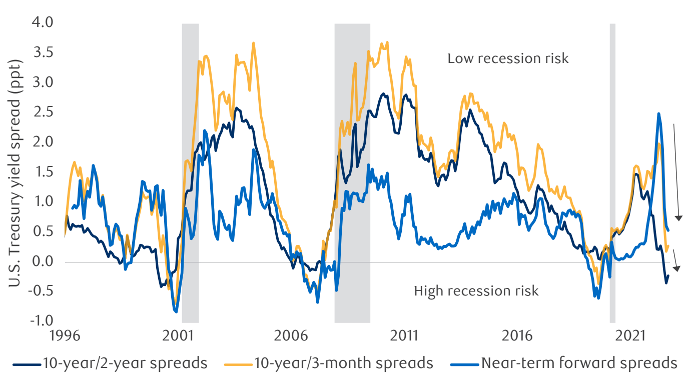
Note: As of 09/01/2022. Source: RBC GAM

Exhibit 11: Recession signals

Signal	Indicating U.S. recession?
2yr-10yr curve inverts	Yes
Inflation spike	Yes
Oil shock	Yes
Google "recession" news trend	Yes
RBC GAM recession model	Yes
Jobless claims jump	Yes
Monetary tightening cycle	Likely
Duncan Leading Indicator falls	Maybe
Financial conditions tighten	Maybe
NY Fed 3m-10yr curve inverts	No, but getting very close
Fed short-term curve inverts	No, but getting very close

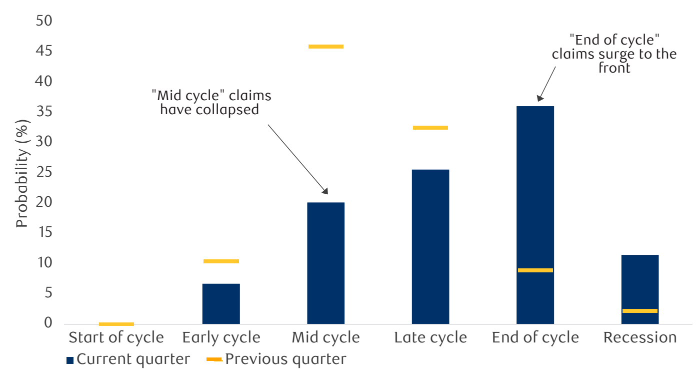
Note: As at 08/31/2022. Analysis for U.S. economy. Source: RBC GAM

Exhibit 12: Yield-curve indicators suggest rising recession risks



Note: As of 9/2/2022. Near-term forward spread measured as forward rate of 3-month Treasury bill six quarters from now minus spot 3-month Treasury yield. Shaded area represents recession. Source: Engstrom and Sharpe (2018). FEDS Notes. Washington: Board of Governors of the Federal Reserve System, Bloomberg, Haver Analytics, RBC GAM

Exhibit 13: U.S. business-cycle score card



Note: As at 08/05/2022. Calculated via scorecard technique by RBC GAM. Source: RBC GAM evidently turned, with companies now fretting about bulging warehouses – another classic precursor to recession.

Curiously, labour markets have so far remained fairly resilient. While there are hints of a turn in the labour market, with jobless claims a little higher and hiring intentions somewhat lower, the pace of hiring has not been seriously interrupted so far. The sector merits close watching, as even a slight increase in the unemployment rate has historically provided a strong recession signal (Exhibit 15).

Should a recession transpire, we anticipate fairly standard dimensions: in the U.S., an average-sized 1.75- percentage-point peak-to-trough decline in output, a recession duration of two to three quarters, and a subsequent recovery that proceeds at a moderate clip – distinctly unlike the blink-and-you-missed-it recession at the start of the pandemic (Exhibit 16).

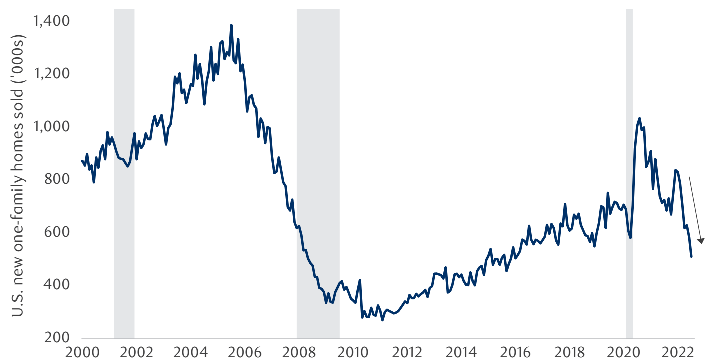
The situation is set to be considerably worse in Europe and the U.K. Both jurisdictions are faced with startlingly high natural-gas bills due to Russia's war on Ukraine. The winter may be worse yet as heating needs rise.

Amid all of this recession talk, it is crucial to flag two things for a proper perspective. First, recessions are merely temporary disturbances: growth always resumes thereafter, and usually with some vigour.

Second, any recession that unfolds could be a useful one in a number of ways. It should:

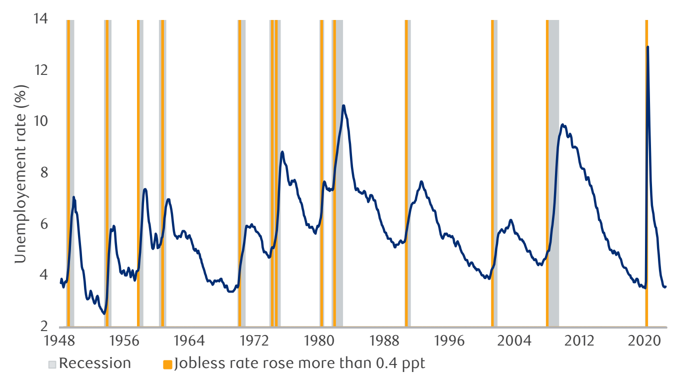
- Enduringly tame inflation, thus permitting prosperity to rise in the decades to come.
- Snap demand and economic activity back to sustainable levels from present overheated readings.
- Reduce undesirable housing-market excesses.
- Teach a lesson to central bankers about the error of applying too much monetary stimulus for too long, thereby reducing the risk that the error is repeated, and in so doing preventing ultra-low interest rates from distorting debt markets and economic decision-making in the future.

Exhibit 14: U.S. new-home sales decline as Fed ramps up rate hikes



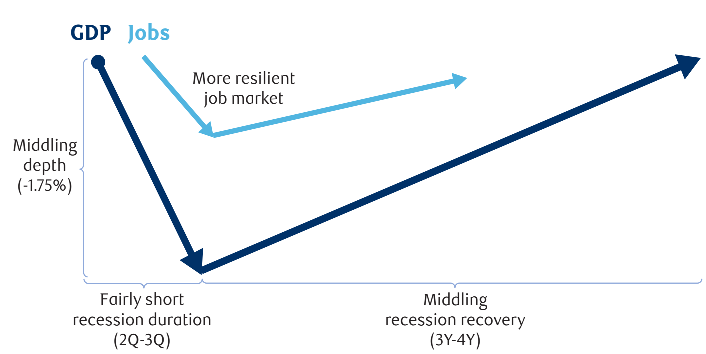
Note: As of Jul 2022. Shaded area represents recession. Source: U.S. Census Bureau, Macrobond, RBC GAM

Exhibit 15: Not much room for cooling the economy without triggering a recession



Note: As of Aug 2022. Unemployment rate is 3-month moving average. Source: Bureau of Labor Statistics, NBER, Haver Analytics, RBC GAM

Exhibit 16: Recession scenario assumptions



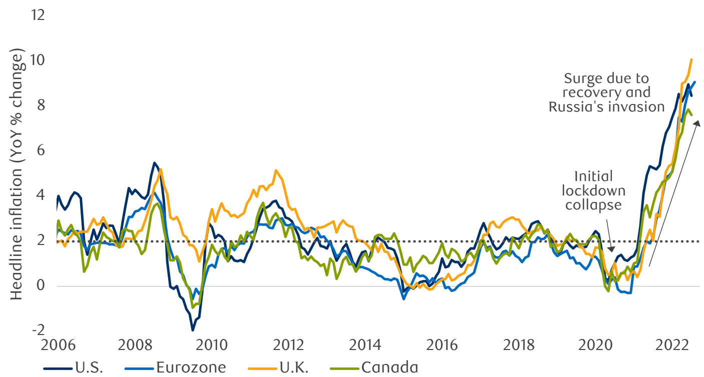
Note: As at 08/30/2022. Source: RBC GAM

Inflation peaks

High inflation remains the central macroeconomic problem in the world today (Exhibit 17). Elevated and volatile inflation has a corrosive effect on purchasing power, makes planning for the future difficult, and is the prime motivation for central-bank rate hikes that are so deleterious to economic growth.

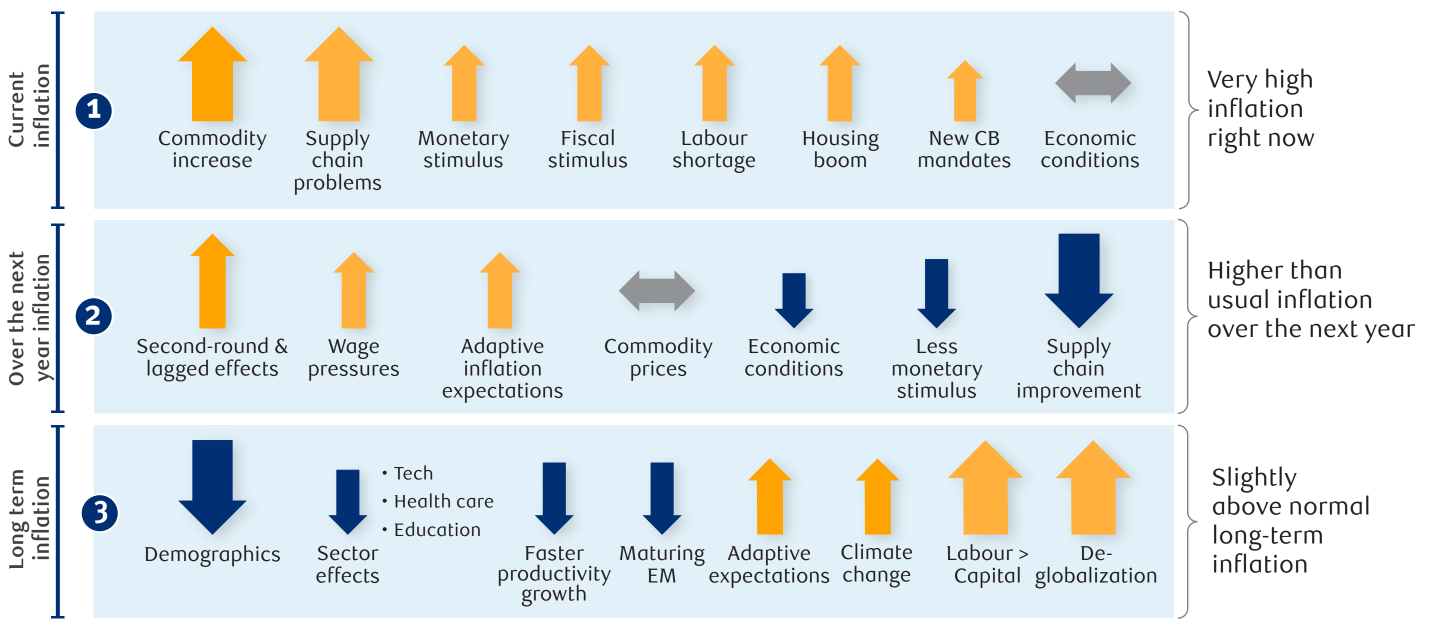
Inflation has been heightened by an unusually large and powerful number of forces (Exhibit 18). The great majority of these have provided an upward force over the past year, driving the annual inflation rate to its highest reading in decades. The four most important have arguably been supply-chain problems, a commodity shock, monetary stimulus and fiscal stimulus.

Exhibit 17: Inflation at multi-decade high in major economies



Note: Canada, U.K., and U.S. as of Jul 2022, Eurozone as of Aug 2022. Source: Bureau of Labor Statistics, Office for National Statistics, Statistics Canada, Statistical Office of the European Communities, Haver Analytics, RBC GAM

Exhibit 18: Inflation to become less high over next year



NNote: As at 08/30/2022. Source: RBC GAM

Exhibit 19: U.S. inflation-peaking scorecard

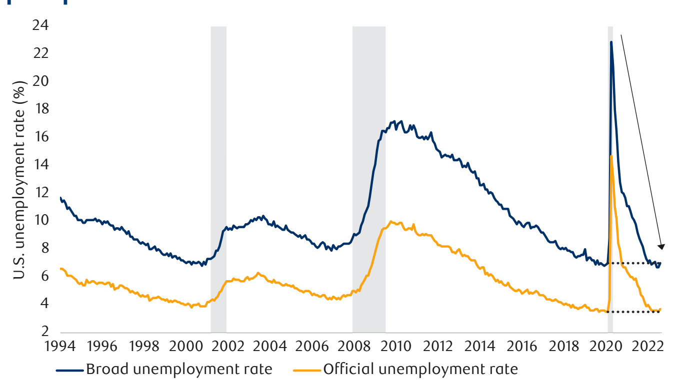
		Inflation turning lower?		
		Yes	Maybe	No
Thematic drivers	Supply chain			
	Monetary policy			
	Commodity shock			
	Fiscal policy			
	Wages			
	Inflation breadth			
Aggregate measures	Headline CPI			
	Core CPI			
	Breadth - Median CPI			
	Breadth - Trimmed-mean CPI			
	PPI			
	Real-time inflation			
	Google trends inflation			
Inflation cross-section	Pandemic-boom goods			
	Services			
	Crude oil			
	Food			
	Home prices			
Expectations	Market: inflation expectations			
	Consumer: inflation expectations			
	Business: inflation is biggest problem			
	Business: plans to raise prices			
	Consensus inflation forecast			
Total		12	5	6

Note: As at 08/22/2022. "Turning" identified using mix of M/M and Y/Y methodologies. "Pandemic-boom goods" is used vehicles + sports vehicles (including bicycles). Source: RBC GAM

Crucially, however, recent inflation readings have begun to flatten out or even to decline. Our inflation-peaking scorecard reveals that the majority of inputs and signals have now turned, suggesting peak inflation probably occurred in June (Exhibit 19).

Happily, there is reason to think inflation may de-intensify further over the coming year. Of the four biggest drivers of high inflation, all have turned to varying degrees. This is to say, supply-chain constraints are ebbing, the commodity shock has eased for most raw materials, monetary stimulus is vanishing with haste, and fiscal stimulus has now turned into fiscal restraint. Each of these claims is discussed in more detail in subsequent sections. An economic slowdown should also make the economy materially less tight, removing an important inflation pressure (Exhibit 20).

Exhibit 20: U.S. unemployment rates return to pre-pandemic levels



Note: As of Aug 2022. Broad unemployment rate defined as U-6 unemployment rate. Shaded area represents recession. Source: BLS, Macrobond, RBC GAM

This doesn't promise that inflation woes are permanently over. While it is more likely than not that inflation moderates from here, it will probably be a gradual and fitful affair, and there is no guarantee that geopolitical complications do not create another commodity shock, that a more malicious wave of COVID-19 doesn't snarl supply chains again, or that fiscal policy doesn't become substantially more generous as policymakers respond to the economic slowdown and high energy bills.

There are also second-round inflation drivers to consider. These include the sheer breadth of inflation, which raises the risk that inflation pressures become self-sustaining. Additionally, one might imagine that tight labour markets and the rapid wage growth they enable could keep inflation kindled.

But these risks are less persuasive than they first seem. Despite the breadth of inflation, the most intense inflation comes from a handful of categories that do appear to be turning, or set to turn. There is also evidence that wage pressures are beginning to turn lower (Exhibit 21).

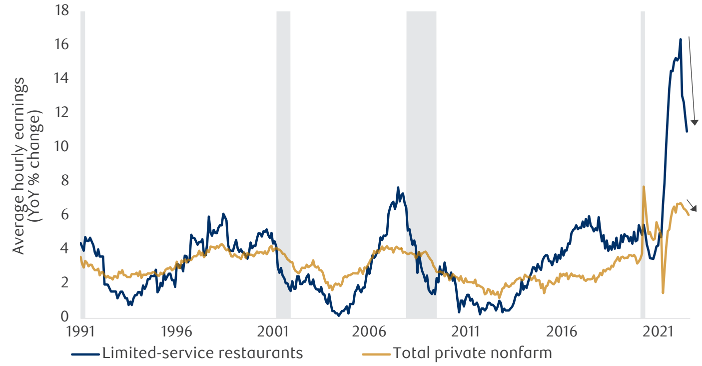
As such, over the medium run, we anticipate substantially lower but still elevated inflation in 2023 (Exhibit 22). The U.K. may struggle with inflation for longer given that rising natural-gas costs are being passed more fully through to British consumers, and given a particular surge in labour walkouts.

Financial markets agree that inflation should become less intense over time, as market-based inflation expectations have fallen substantially (Exhibit 23). The inflation expectations of households and businesses are also beginning to peak and decline, but further time is needed before the average person is fully persuaded.

Problems in the supply chain ease

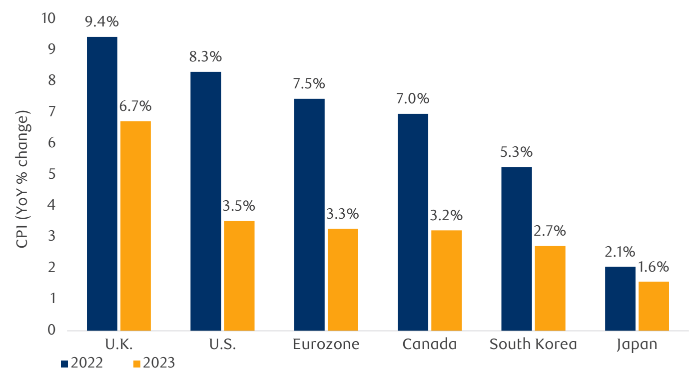
Supply-chain problems mounted last year as demand roared back once pandemic restrictions eased, whereas supply struggled to ramp up at the same rate. Simultaneously, consumers demonstrated a greater preference for goods over services, putting an even greater strain on the production and distribution of goods. In our estimation, these supply-chain issues were the single greatest contributor to the scourge of high inflation.

Exhibit 21: Wage growth of U.S. low-skilled workers decelerating



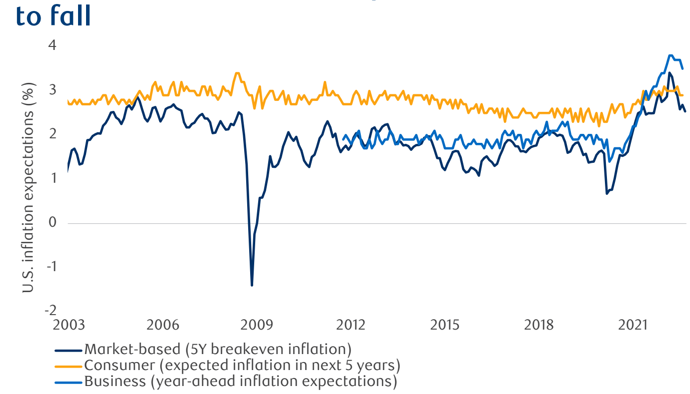
Note: Limited-service restaurants as of Jul 2022, total private nonfarm as of Aug 2022. Source: BLS, Macrobond, RBC GAM

Exhibit 22: RBC GAM CPI forecast for developed markets



Note: As of 09/01/2022. Source: RBC GAM

Exhibit 23: U.S. inflation expectations have started to fall



Note: Market-based expectations as of 09/02/2022, survey-based consumer and business expectations as of Aug 2022. Source: Federal Reserve Bank of Atlanta, Federal Reserve Board, University of Michigan Surveys of Consumers, Haver Analytics, RBC GAM

Fortunately, those supply-chain issues are now palpably easing (Exhibit 24). The cost of shipping goods has declined nicely, the time ships must wait to unload in ports has fallen, and particularly acute shortages have been significantly resolved, as for example the availability of computer chips used in car production. Furthermore, companies are no longer trying to rebuild inventories.

Manufacturers report becoming much less worried about supplier deliveries and are also much less concerned about high input costs (Exhibit 25).

Beneath the surface, some of this improvement can be attributed to consumer preferences shifting back toward a more normal balance of goods versus services, though there continues to be room for goods demand to ease and services demand to strengthen (Exhibit 26).

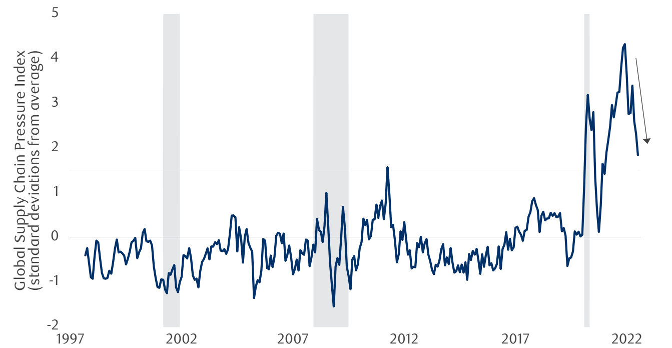
It will still be some time before supply-chain discombobulations are fully resolved, and repeated Chinese lockdowns and ongoing Russian sanctions slow the rate of recovery. But, on balance, supply chains are likely to continue improving, helping to restore a normal rate of inflation.

Commodity shock selectively fades

Commodity prices have also been a powerful driver of high inflation, spurred on by the unexpectedly rapid revival of demand after the initial phase of the pandemic, and more recently by supply concerns as sanctions were applied to Russia's resource exports.

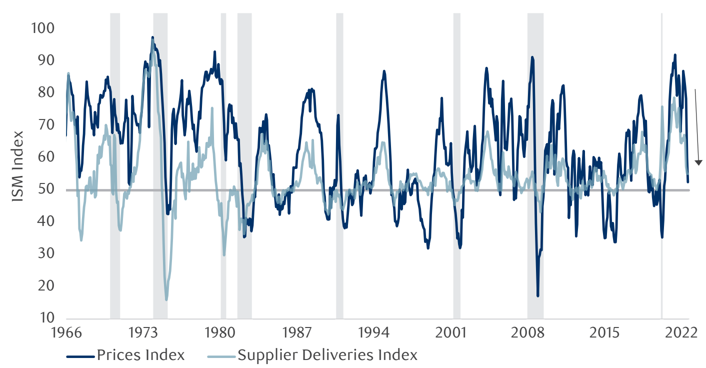
> "All that is truly needed for commodity-driven inflation to abate is for commodity prices to stop rising, rather for them to fall significantly further."

Exhibit 24: Global supply-chain pressure has eased but is still elevated



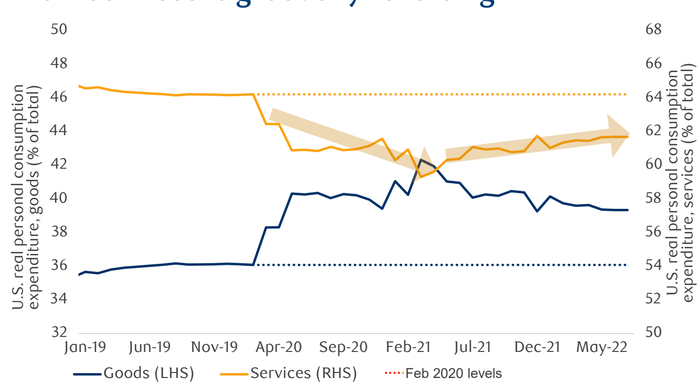
Note: As of Jul 2022. Shaded area represents U.S. recession. Source: Gianluca Benigno, Julian di Giovanni, Jan J. J. Groen, and Adam I. Noble, "A New Barometer of Global Supply Chain Pressures," Federal Reserve Bank of New York Liberty Street Economics; Macrobond, RBC GAM

Exhibit 25: Price increases and supplier deliveries normalized



Note: As of Aug 2022. Shaded area represents recession. Source: ISM, Macrobond, RBC GAM

Exhibit 26: U.S. consumer-spending shift to goods from services is gradually reversing



Note: As of Jul 2022. Source: Macrobond, RBC GAM

But, as projections for global economic demand have more recently been downgraded, commodity prices have reversed course. Some commodity markets have also recalibrated as Russia's output has either not been significantly impeded by sanctions (as with base metals) or its exports have been restricted less than expected – as with crude oil (Exhibit 27), and as Ukraine's reduced food production has proven less critical to global food stocks than initially feared (Exhibit 28).

A notable exception to this commodity reversal has been natural-gas prices, which have continued to soar in Europe as Russia ratchets down supplies. Inflation in Europe and the U.K., accordingly, has not yet necessarily peaked.

One can speak with least confidence about the extent to which the commodity price reversal will persist. In theory, a weakening global economy should drive commodity prices still lower. This is probably the best guess for the next year. But it should be conceded that prices already reflect at least part of this expected economic weakness, reducing the need for further price concessions; the war in Ukraine will likely continue for some time with the possibility of a further escalation of resource-limiting sanctions; fertilizer shortages today should crimp food production over the coming year; and, ultimately, commodity prices are notoriously volatile.

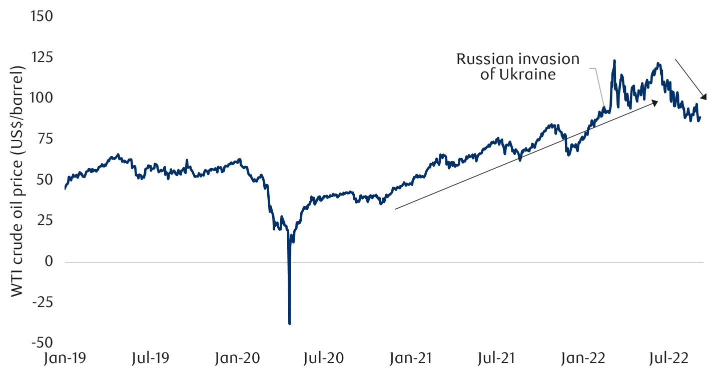
Fortunately, all that is truly needed for commodity-driven inflation to abate is for commodity prices to stop rising, rather for them to fall significantly further.

Policymakers atone for their errors

Policymakers have played an outsized role in supporting the economy over the past several years, rescuing untold households and businesses from difficult circumstances during the pandemic. They then maintained those policy supports for longer than was strictly advisable, contributing to the frothy economic conditions and feverish inflation of the past year. They are now seeking to atone for their policy sins.

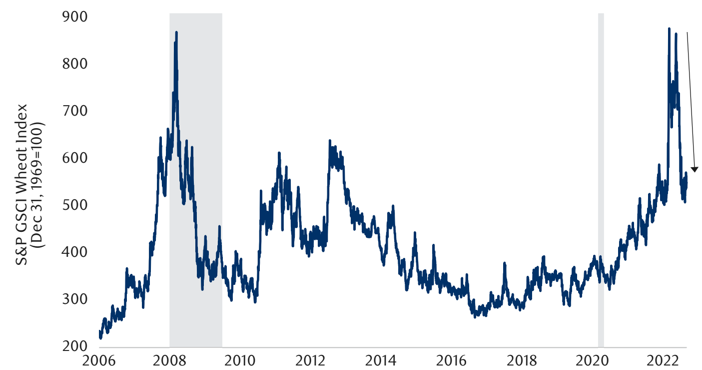
Central banks have acknowledged their initial underestimation of the persistence of inflationary forces, swinging into action with several percentage points of monetary tightening delivered many times more rapidly

Exhibit 27: Crude-oil prices are elevated but retreating



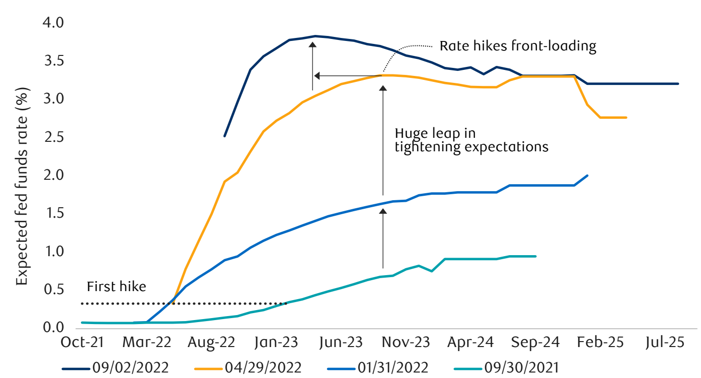
Note: As of 09/05/2022. Source: Macrobond, RBC GAM

Exhibit 28: Wheat prices retreat



Note: As of 09/04/2022. Shaded area represents U.S. recession. Source: S&P, Macrobond, RBC GAM

Exhibit 29: Market expectations of Fed hikes over time



Note: As of 09/02/2022. Source: Bloomberg, RBC GAM than usual. Major developed-world central banks have furthermore signaled that additional tightening is coming, with policy rates venturing to levels not seen in well over a decade (Exhibit 29). North American policy rates seem likely to settle at close to 4%, while rates set by the Bank of England (BOE) and European Central Bank (ECB) are on track to peak somewhat below this, but still in restrictive territory.

Even though the European economic outlook is worse than in North America, the BOE and the ECB feel compelled to tighten policy, less due to high natural-gas prices, which are outside of the control of monetary policy, and more because the region's currencies have depreciated sharply, providing a broad source of inflation pressures and prompting undesirable capital outflows.

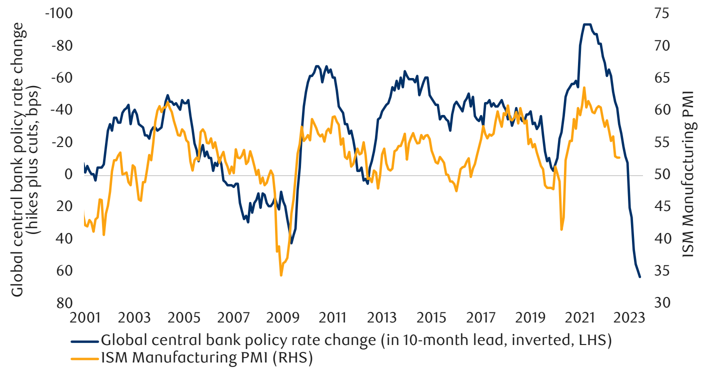
So far, the only major developed-world exception to this tightening trend has been the Bank of Japan, which remains tolerant of inflation running somewhat above 2% after several decades in which the country was cursed with inflation well below that level.

Usually, central banks begin to ease monetary policy when they detect hints of economic weakness. This time, however, the priority is restoring inflation to desired levels. As such, and unlike in the past several business cycles, central banks should not be viewed as a safety valve for minimizing short-term economic damage. The amount of monetary tightening already delivered is usually enough to force a contraction in manufacturing (Exhibit 30).

Of course, if inflation is clearly felled and the economy is suffering, some easing is then conceivable. But central banks will err on the side of too much tightening as opposed to too little.

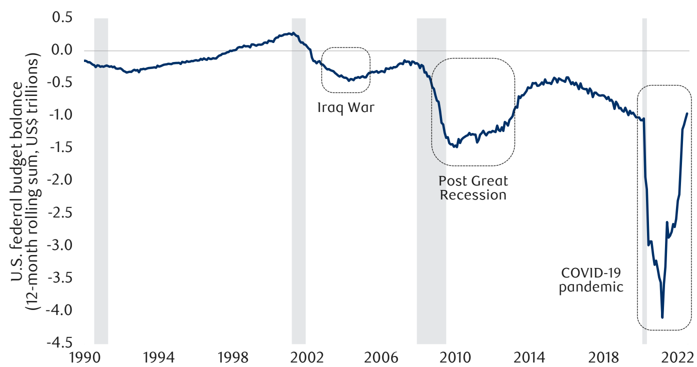
Fiscal policy was arguably even more generous than monetary policy in 2020 and 2021, but most of the special supports introduced then have expired. While we live in an era of big government, with politicians in many jurisdictions expanding the scope of fiscal spending, recent initiatives pale in comparison with those undertaken over the prior few years (Exhibit 31).

Exhibit 30: U.S. manufacturing set to slow as central banks tighten monetary policy

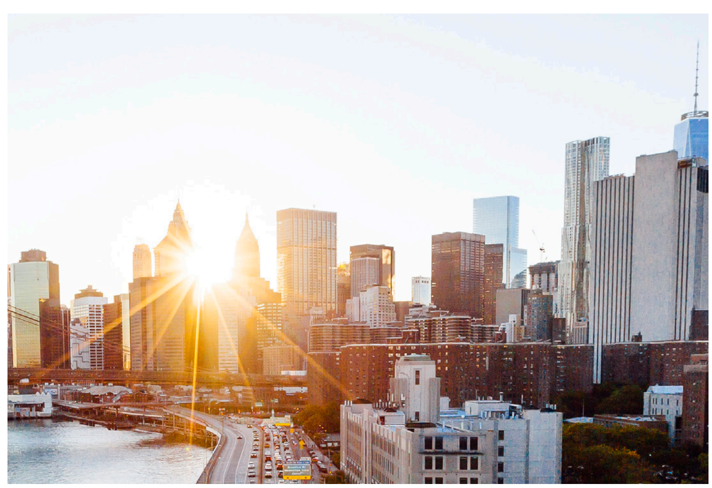


Note: As of Aug 2022. Sum of change in global central bank policy rates. Source: Macrobond, RBC GAM

Exhibit 31: U.S. fiscal drag occurs as deficit shrinks



Note: As of Jul 2022. Source: Macrobond, RBC GAM



Framed in an economic context, monetary policy and fiscal policy were spurring growth and inflation in 2020 and 2021, but are now exerting the opposite force.

China's challenges

For well over a decade, China has been the most important contributor to global economic growth. It is unlikely to relinquish that mantle anytime soon, but the country nevertheless faces myriad problems this year and next.

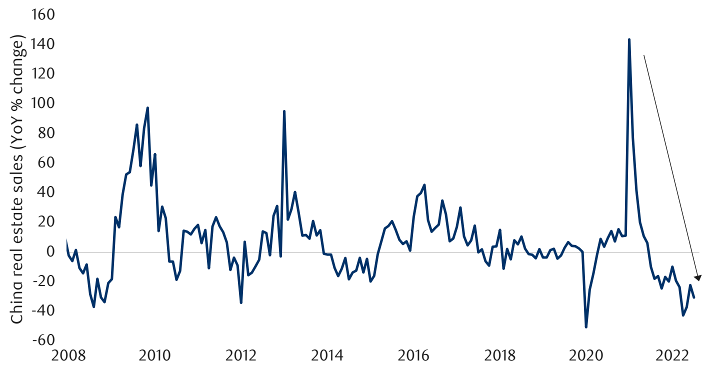
Nearly uniquely, the pandemic continues to rage inside China. Or, more precisely, there are very few infections in China, but the country's pursuit of a "zero-tolerance" policy has obliged it to repeatedly lock down major cities, damaging both production and consumption. The government recently locked down Chengdu, the capital of Sichuan province and home to 21 million people, and there are rumours that more restrictions are to come.

From a domestic perspective, China's economy continues to be dulled by a range of factors, including a crackdown on corporations, especially those in the area of technology; a fertility rate that remains well below the replacement rate even after childbearing restrictions were lifted; and a bloated housing sector that has yet to respond to policymakers' recent support (Exhibit 32).

The country's geopolitical situation is also complicated. China has allied itself with Russia over the war in Ukraine, which has been to the advantage of both nations. Russia furnishes China with resources and China provides a range of technological and other goods no longer available to Russia from the West. China has lately begun to assert its long-standing claims over Taiwan more forcefully, risking a military conflict. More generally, China continues to project itself more forcefully on the global stage now that it has become an economic goliath. With President Xi set to be appointed to an unprecedented third five-year term this fall, China is likely to remain more assertive in global affairs.

Finally, China has imported some economic challenges from the rest of the world. As a net resource importer, the country does not like the fact that commodity prices remain somewhat elevated. Further, as time passes, the world's outsized demand for goods is beginning to ebb in favour of services – to the disadvantage of China's large manufacturing base. Of arguably greatest relevance, the

Exhibit 32: China's real-estate market plunged under government reforms



Note: As of Jul 2022. Floor space sold monthly in square meters. Source: Haver Analytics, RBC GAM

prospect of a slowing global economy is not ideal for a country so geared to foreign demand.

As a result, it is prudent to expect China's economy to continue underperforming relative to its heroic pre-pandemic norm of 6% to 8% growth. Indeed, we expect just 2.9% growth in 2022, followed by an incomplete rebound to 5.0% growth in 2023 as pandemic restrictions are presumed to ease and the housing market stabilizes.

Turning from the base case outlook to risks, China is at an elevated risk of a housing crisis. Home affordability is very poor and investors have long ploughed a disproportionate share of their savings into the property sector. Now, housing activity is weakening and several major builders are embroiled in crisis with some probably insolvent. Some homebuyers have stopped mortgage payments after the construction of their apartments was halted by struggling builders.

But Chinese policymakers have a long history of deftly navigating the country out of impending debt crises and have already delivered interest-rate cuts and guaranteed some builder loans, with more in this vein likely to come. Still, the housing sector is not likely to be the driver of growth that it was over the prior two decades.

China cannot be said to be the central fulcrum of the global economy right now. Inflation and recessionary forces largely emanate from elsewhere. But as China grows less quickly, this imposes a further drag on global output.

Canadian rate sensitivity

The Canadian economic outlook is similar to that of the U.S. Growth is expected to continue decelerating across the remainder of 2022 and succumb to recession in the first half of 2023.

It should be conceded that Canada's consumer- and business-confidence metrics have not descended as far as in some countries, and similarly that the recent commodity boom has proven helpful to the resource-rich nation. But real-activity indicators nevertheless appear to be softening: monthly GDP and retail sales are both forecast to decline for the next month, and the trend rate of hiring has been poor.

Econometric modelling confirms our intuition that the Canadian economy is more vulnerable than the U.S. to rising interest rates and a slowing housing market. Canadian home prices have already fallen significantly across a broad range of local markets (Exhibit 33), unlike in the U.S.

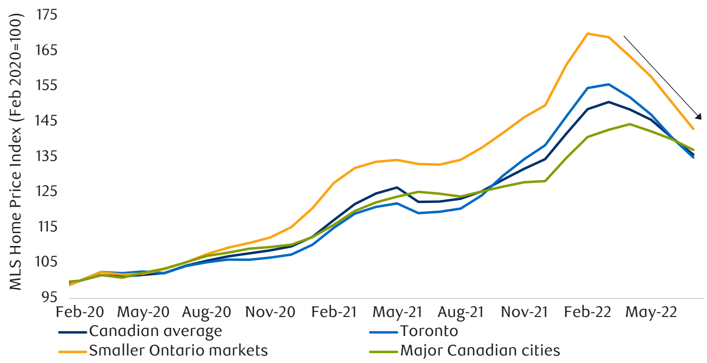
Risks to the base case view

In one important regard, the extent of macroeconomic uncertainty about the future is more limited than it first seems: if the economy starts to outperform, central banks will have to raise rates by more to achieve their inflationary goals, dampening subsequent growth; conversely, if the economy underperforms expectations, central banks will raise rates by less, supporting the economy. In both cases, a moderate recession would seem to await.

Still, there are plenty of risks that emanate from other places. Prominent downside risks include previously discussed scenarios such a Chinese housing crisis; a geopolitical crisis involving Taiwan; an escalation of the war in Ukraine; the risk that commodity prices – particularly energy – surge yet higher; and the possibility that economic weakness fails to tame inflation.

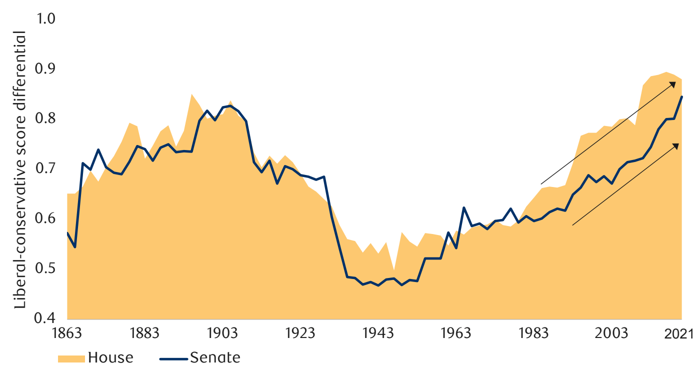
Heretofore undiscussed downside risks include the possibility that rising U.S. political polarization (Exhibit 34) eventually does economic damage via more extreme or volatile public policy, or via a loss of trust that increases the risk premium on U.S. assets and creates turbulence for transactions and contracts.

Exhibit 33: Home prices fall across Canada amid interest-rate hikes



Note: As of Jul 2022. Source: CREA, Macrobond, RBC GAM

Exhibit 34: U.S. Congress political polarization intensifies



Note: As of 08/07/2022. Measured as the difference between median scores for the Democratic and Republican members in the House of Representatives and Senate. Source: Voteview.com, RBC GAM

> "While recessions are inherently temporary conditions, they have historically had a significant adverse effect on financial markets."

It should also be acknowledged that COVID-19, which has mostly faded into the background from an economic standpoint, is likely to continue spinning off more virulent strains. Should one of these also prove to be materially more deadly, the economic damage could again become significant.

There are also upside risks to consider. It is possible that inflation is tamed without a recession, perhaps because struggling companies simply reduce the extent of their unfilled job openings rather than their head count (though, historically, job losses usually happen even when job openings are high before a recession – refer to Exhibit 35).

As the economy softens, commodity prices and supply-chain snarls could retreat more quickly than expected, presenting a more rapid inflation fix, and reducing how much central banks have to tighten. As a result, we flag a 25% chance of a soft landing – a scenario in which inflation is tamed without the economy having to descend into a recession. This scenario is arguably more likely than one in which the economy descends into recession without inflation being fixed.

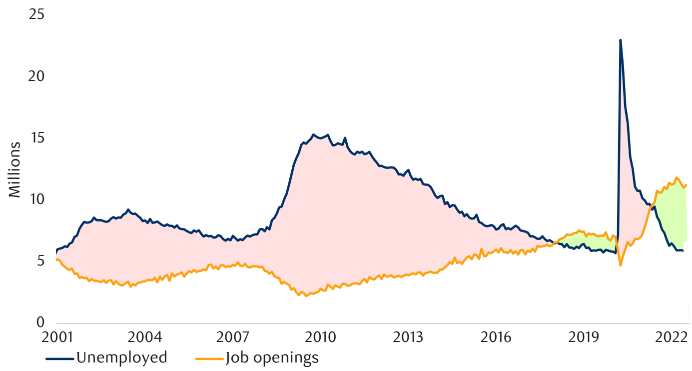
If the pandemic were to be fully extinguished or China change its pandemic policies after the country's fall election, China's economy would become considerably less hobbled. Similarly, if Chinese policymakers propose a bold and viable solution for the country's housing-market problems, a pathway would be created for faster Chinese economic growth.

Bottom line

In conclusion, the good news is that inflation fears have begun to fade as inflation itself starts to turn, and as the underlying drivers of inflation have seemingly reversed course. This is a major development, as high inflation has constituted the market's biggest fear over the past several quarters.

The bad news is that the economy continues to weaken, and remains on track for a recession given the many headwinds in place. While recessions are inherently temporary conditions, they have historically had a significant adverse effect on financial markets. We therefore remain fairly cautiously positioned from an investment risk-taking perspective until economic weakness has more fully manifested.

Exhibit 35: U.S. labor-market shortage – there are far more job openings than unemployed



Note: Unemployment as of Aug 2022, job openings as of Jul 2022. Source: BLS, Macrobond, RBC GAM

Market outlook

Central banks dig in on the fight against inflation

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Market volatility so far in 2022 can be explained by an unusually broad list of highly potent agents. The lingering pandemic and related shutdowns in China, Russia's invasion of Ukraine and the worsening energy crisis in Europe are all factors unsettling the environment for investors. Moreover, the economic expansion is mature, growth is slowing and the odds of recession sometime later this year or in early 2023 are elevated. But there is no doubt that the greatest single challenge for markets is inflation, now running at its fastest pace in 40 years and forcing central banks everywhere to respond aggressively.

Four decades of growing credibility for central banks is at stake if they fail to bring inflation back down toward their target levels within a politically acceptable time frame, even if that means bringing on economic pain. Acknowledging that monetary policy was behind the curve, jumbo-sized rate hikes in quick succession have been a feature of the current tightening cycle, and quantitative tightening (i.e. a reduction in central-bank balance sheets) has begun. Many central bankers, including the U.S. Federal Reserve Board (Fed) have also signaled further rates hikes are needed and that interest rates will likely stay higher for longer than investors had previously anticipated.

The intensifying fight against inflation and resulting massive increase in interest-rate expectations have arguably been the dominant force in market volatility so far this year. Bond yields have surged through 2022, rising again in the past quarter as investors priced in more monetary tightening. In June, the U.S. 10-year yield climbed to 3.50%, its highest level since 2011 and up from 1.5% at the start of the year, marking one of the worst ever periods for fixed-income returns (Exhibit 1). Rising discount rates also weighed heavily on equity-market valuations, particularly those of high-priced growth stocks. Global equity markets slipped into bear markets, down more than 20% from their peaks and although stocks retraced some of their losses in an impressive summer rally, they extended their declines over

Exhibit 1: U.S. 10-year government-bond yield

Note: as of August 31, 2022. Source : Bloomberg, RBC GAM the past three-month period (Exhibit 2). This year has been an especially difficult period for balanced investors, as both stocks and bonds have fallen in tandem given that the surge in interest rates triggered a broad re-pricing of financial assets.

With the economic expansion mature and the risk of recession high amid aggressive monetary tightening and valuations across many key markets still not at levels common to the beginning of sustained bull cycles, we are maintaining a conservatism approach to risk taking in our recommended asset mix for balanced investors. We recognize there are some pathways to good outcomes if inflation calms and interest-rate increases moderate. Moreover, the drop in asset valuations has boosted return potential over the longer term. But in the event that inflation doesn't come down as quickly as we expect or the economy falls into recession, corporate profits could be vulnerable and equity valuations could fall further. The range of potential outcomes remains unusually large and we have been shifting our asset mix closer to a neutral positioning as a result. Over the past quarter, we added 1.5 percentage points to our fixed-income exposure, narrowing our underweight in bonds, as valuation risk diminished and the U.S. 10-year yield rose above 3.0%. The move was sourced from cash and stocks. We continue to maintain a slight overweight in stocks given our view that they will likely outperform bonds over the longer term but, reflecting our cautious near-term view, have decreased equity exposure to a level that is smaller than at all prior points in the cycle. For a balanced global investor, we currently recommend an asset mix of 61.5 percent equities (strategic neutral position: 60 percent) and 37.5 percent fixed income (strategic neutral position: 38 percent), with the balance in cash.

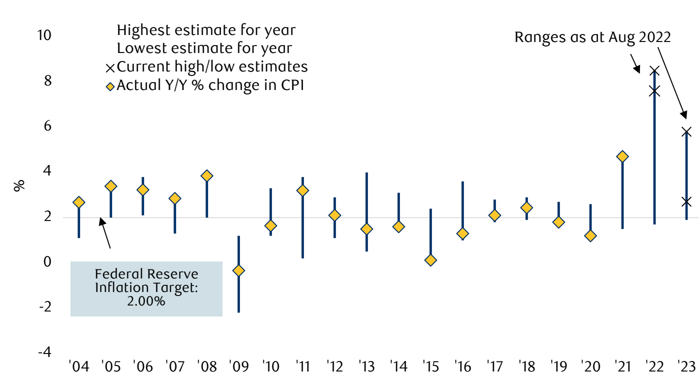
Strong labour market gives Fed clear runway to raise rates

Inflation has proven difficult to predict in the post-pandemic era. It may therefore be difficult to claim victory in the fight against inflation until actual data releases reveal a clear path toward the Fed's 2.0% target. Illustrating the scale of the inflation shock, Exhibit 3 plots the range of professional forecasters' expectations for CPI in each of the past 20 years. For 2022, economists' inflation forecasts have spanned a range of nearly 7 percentage points, representing a significant difference in opinion and the need to radically adjust forecasts as the year progressed. The current high and low forecasts, marked by the "X"'s on the bar for 2022, are now concentrated within a one-percentage-point range, but they are toward the upper end of what was thought to be possible for 2022. We haven't seen a dispersion this large in inflation forecasts in the chart's nearly 20-year history.

Exhibit 2: MSCI World Index
U.S. dollars

Note: MSCI World Index in U.S. dollars. As of August 31, 2022.
Source: Bloomberg, RBC GAM

Exhibit 3: United States
Inflation estimate dispersion

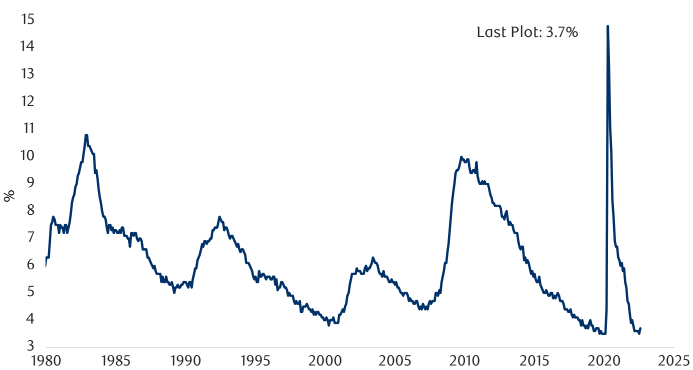


Source: Consensus Economics, RBC GAM

While forecasts for next year indicate a decline in inflation, uncertainty around the path for CPI remains extremely large with a range spanning 2% to 6%. The good news is that the unemployment rate, which is the second part of the Fed's dual mandate, sits near historic lows and allows the Fed to focus on inflation (Exhibit 4). Moreover, U.S. consumers are in solid shape, with record-high net worth and fixed financial obligations representing a relatively small share of their disposable income (Exhibit 5). In this environment, the Fed can afford to be more aggressive with monetary tightening and likely won't want to let its guard down until it has more clarity on the path for inflation.

Short-term interest-rate models suggest that interest rates could go much higher if inflation doesn't come down soon. Based on current inflation levels, GDP growth and employment, the Taylor Rule indicates that an appropriate fed funds rate is close to 6% versus the current 2.25%-2.50% range (Exhibit 6). Our own model suggests 5.3% is suitable, but notice the spike in the modelled equilibrium band (Exhibit 7). This spike is a result of the current inflation surge flowing through the model, and eventually dissipating, as we expect price pressures to moderate over the next year and beyond. What these models do show is that, if we are wrong on our thinking that inflation is set to decline, then

Exhibit 4: U.S. unemployment rate

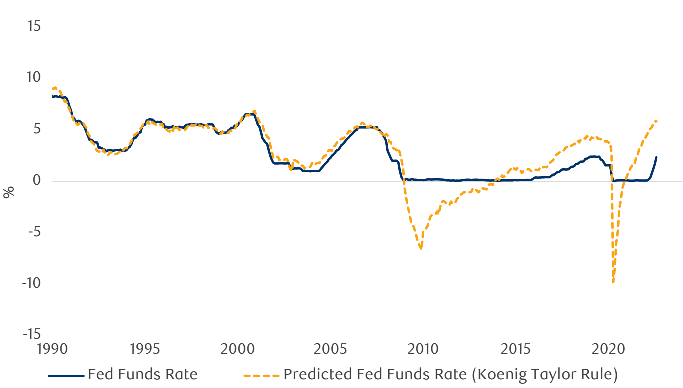


Note: As of Aug 2022. Source: Bloomberg, RBC GAM

Exhibit 5: U.S. financial-obligations ratio
Total obligations as a % of personal disposable income

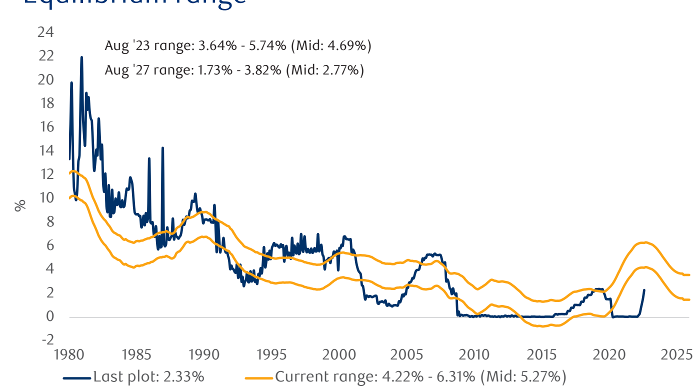
Note: as of March 31, 2022. Source: Federal Reserve

Exhibit 6: Koenig Taylor rule and fed funds rate



Note: As of Aug 2022. The Taylor Rule estimates the appropriate level for the fed funds rate by adjusting the 'neutral rate' to reflect the degree to which current expected growth and inflation lie above or below their long term norm. Source: Federal Reserve Bank of Dallas, RBC GAM

Exhibit 7: U.S. fed funds rate
Equilibrium range



Note: As of Aug 31, 2022. Source: Federal Reserve, RBC GAM interest rates are likely to go even higher than what markets are currently pricing in. Exhibit 8 plots these expectations based on pricing in the futures market for one and two years from now. Notice that the market began pricing in significant tightening well before any increases in the fed funds rate (step function at the bottom of the chart). The Fed fell further and further behind the curve as the year progressed, but managed to narrow the gap somewhat with a series of historically large rate hikes. But since Powell's August 26 speech at Jackson Hole, Wyoming, where he stressed that rates would not come down until inflation was resolved for good, market pricing has crept back up and suggests short-term interest rates will top out near 4% this cycle. Importantly, 2024 levels are below those reflected in futures prices for 2023, presaging cuts or at the very least a calming in rate increases beyond next year. But the pressure will likely remain to the upside on rates until inflation shows clear evidence of coming down.

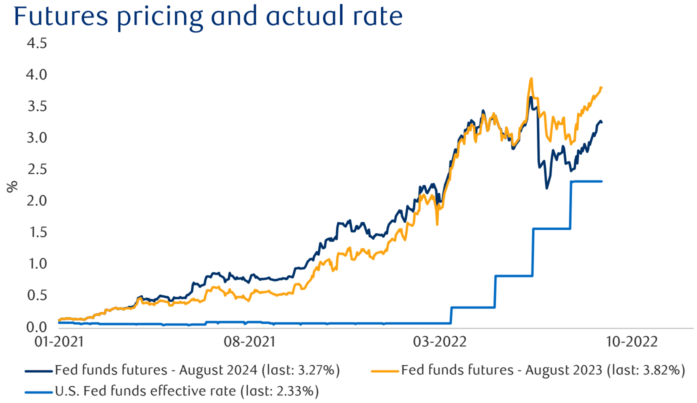
Hypothetical inflation paths suggest favourable levels possible in early/mid 2023

If the inflation peak is indeed behind us, investors' focus will likely shift to when we might expect to again see it back down toward the Fed's 2.0% target. To help approximate the timing, we've modelled a series of scenarios for the year-over-year change in U.S. CPI inflation based on different assumptions in month-over-month changes going forward (Exhibit 9). Three scenarios were constructed assuming "no inflation," "normal inflation," or "historically high inflation". These scenarios are defined as consistent month-over-month increases in CPI of 0.0%, 0.2%, or 0.5%, respectively. The three lines on the chart starting in August 2022 represent how the year-over-year change in CPI would develop under each scenario. Under the "no inflation" or "normal inflation" scenarios, year-over-year changes in CPI would fall below 8% within the next two months, below 6% in late 2022/early 2023 and approach levels below 4% in early to mid-2023. For the "historically high inflation" scenario, we never get back to the sub-4% level but do make progress toward lower readings over the next year, albeit at a slower pace. While predicting month-over-month changes in CPI is challenging, the trajectory for inflation should become increasingly clear by early to mid-2023, with important implications for central-bank policy.

Bonds extend sell-off, valuation risk diminishes

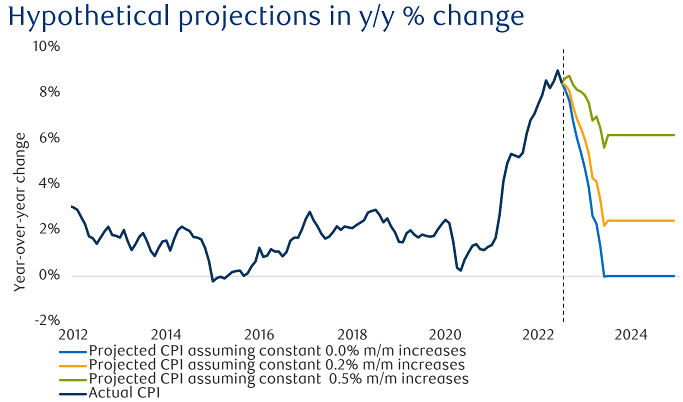
Global sovereign-bond prices declined in the past quarter as developed-world central banks dialed up their hawkish tone. Yields on 10-year government bonds in the U.K. and Germany rose to their highest levels since 2014, and those in North America reached their highest levels stretching back to 2010/2011 (Exhibit 10). Japanese 10-year government bond yields remain anchored at relatively low levels near zero, but those too have been inching higher over the past two years. The World Government Bond Index (WGBI) hedged to U.S. dollars has lost 10.1% year-to-date, or 13% from its peak in 2020, and has now erased all of the gains generated since late 2018 (Exhibit 11). As a result of this

Exhibit 8: U.S. federal funds rate
Futures pricing and actual rate



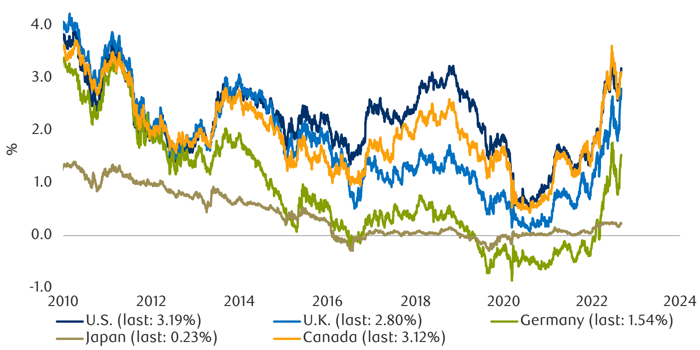
Note: As of August 31, 2022. Source: Bloomberg, RBC GAM

Exhibit 9: U.S. CPI Inflation
Hypothetical projections in y/y % change



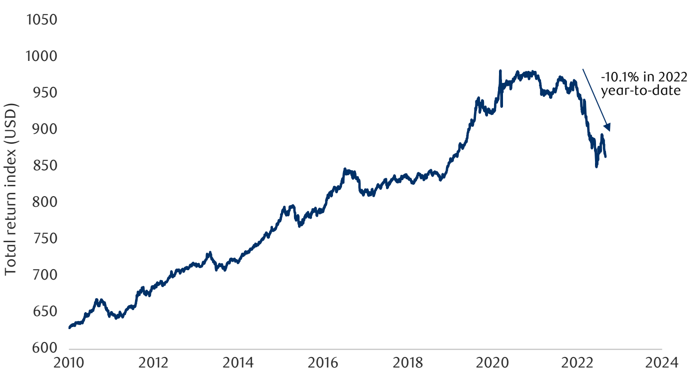
Note: As of July 31, 2022. Source: Bloomberg, RBC GAM

Exhibit 10: 10-year government-bond yields



Note: As of August 31, 2022. Source: RBC GAM

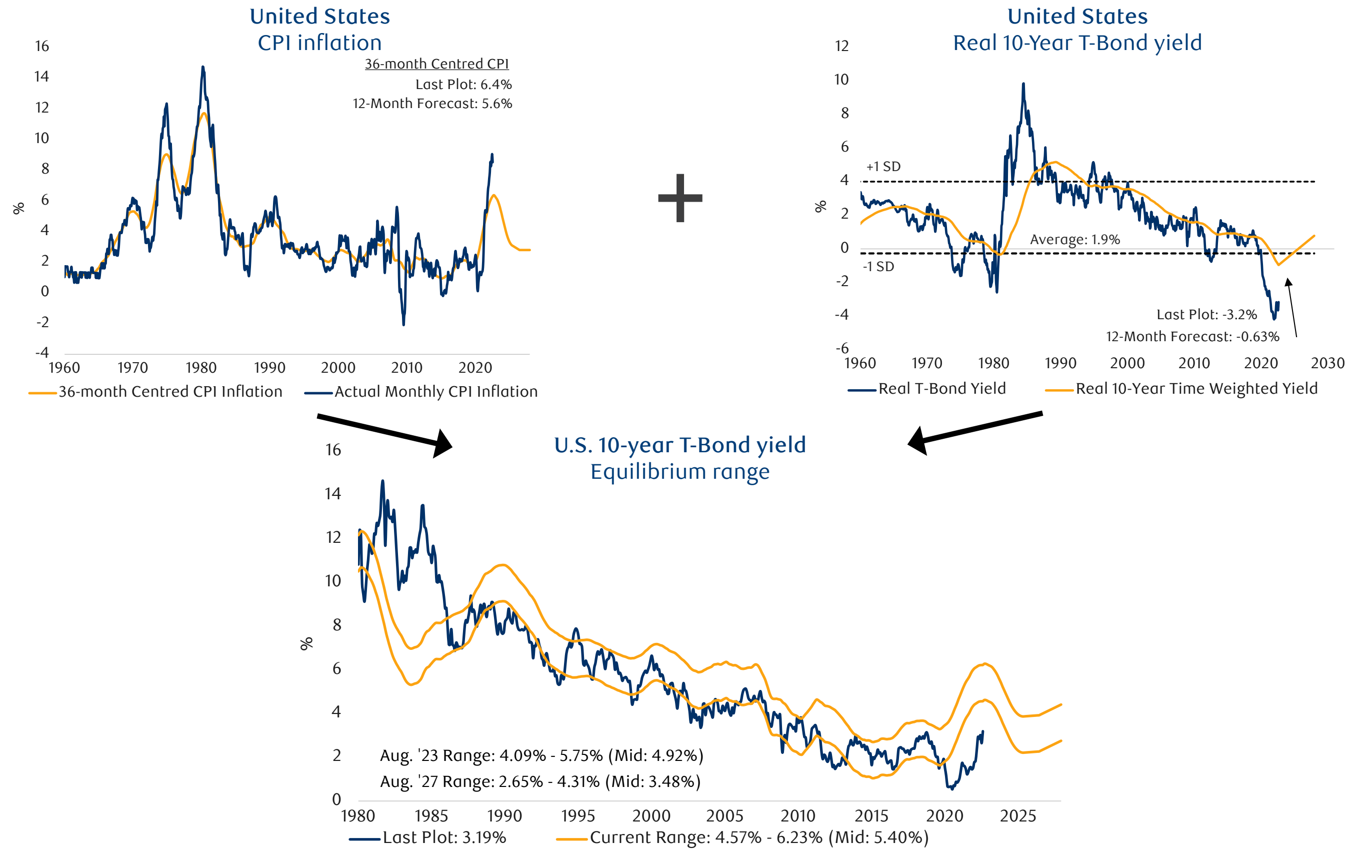
Exhibit 11: World Government Bond Index (WGBI)
Currency-hedged to USD



Note: s of August 31, 2022. Source: Bloomberg, RBC GAM

> "A variety of structural factors such as aging populations, maturing economies, slower potential growth rates and an increased preference for saving versus spending are likely to keep real interest rates well below historical averages."

Exhibit 12: U.S. 10-year bond yield
Fair-value estimate composition



Note: As of August 31, 2022. Source: RBC GAM

intense sell-off, the acute valuation risk that existed across major developed-world sovereign-bond markets has been greatly alleviated (page 41).

Our model for 10-year Treasuries suggests that government bonds have likely priced in much, or even most, of what is needed to properly reflect current and expected inflation and real interest rates. Exhibit 12 plots the components of our bond model, which is made up of an inflation premium and a real (or after-inflation) interest rate. The inflation portion of the model recently surged but is expected to come back down over the next few years. The inflation component is responsible for the big kink in the equilibrium band and it is smoothed using a 36-month moving average that blends in forecasts where necessary to generate the band's values into the future. Another result of extremely high inflation is that real rates – the second part of our model – are now deeply negative. We expect the real rate to gradually rise back toward zero or slightly above, but a variety of structural factors including aging populations, maturing economies, slower potential growth rates and an increased preference for saving versus spending are likely to keep real interest rates well below historical averages of close to 2%. Taken together, and assuming the inflation spike subsides, our model suggests the U.S. 10-year yield should be positioned near 3.5% in five years, not far from where it is at the time of writing. At current yields, therefore, we think bond investors are more likely to keep their coupon and the risk of fixed-income capital losses has greatly diminished since the start of the year. If, however, we are wrong that inflation is on its way down, the kink in the band hints at how much further yields could rise.

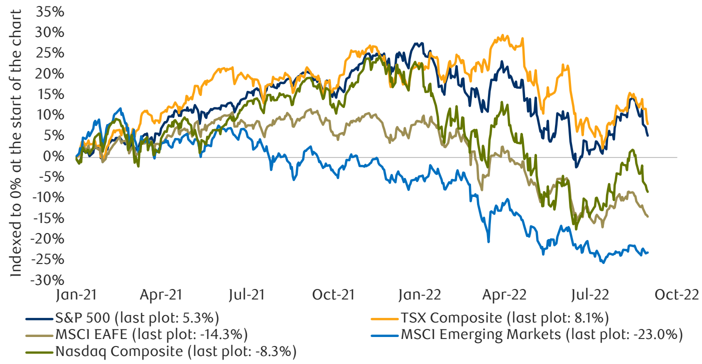
Stocks down after volatile quarter as Fed reiterates hawkish stance

Global equities encountered significant volatility during the quarter as investors tried to gauge whether inflation or recession posed the biggest risk to the economy and capital markets. By mid-June, the S&P 500 Index had fallen as much as 24% from its all-time high in January but staged an impressive summer rally, retracing more than half of the decline (Exhibit 13). The technology-heavy NASDAQ rallied 23% from its June low, tentatively entering a new bull market, as ebbing concerns about inflation and slowing economic growth raised the possibility that central banks could moderate the pace of tightening. But stocks corrected once again following Powell's August 26 speech in which he reiterated that further rate hikes were needed to bring inflation under control. Overall, stocks delivered negative returns for the quarter ranging from low single digits, but low double digits in U.S. dollars. Our global composite of fair value erased nearly all of the excess valuation that existed since the start of the year (Exhibit 14). Within the composite, U.S. equities remain slightly above our estimate of fair value but stocks in other regions look more appealing (page 42).

Shifts in valuation dominated equity returns

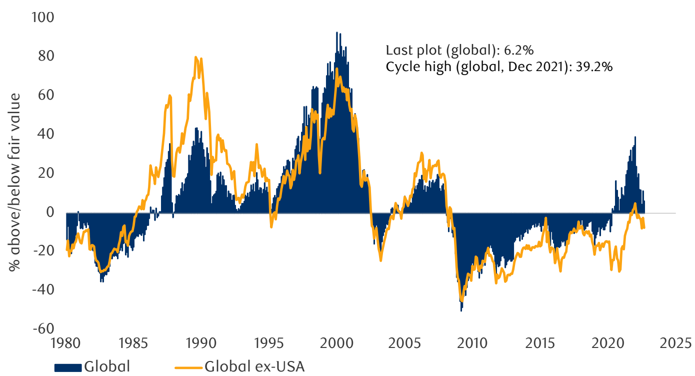
Rising inflation and interest rates have had a massive impact on equity-market valuations, and almost all of the fluctuation in the S&P 500 so far this year can be attributed to changes in these variables. The regression equations within our equilibrium price/earnings (P/E) ratio models help to illustrate how big of an impact these variables can have. Exhibits 15 and 16 plot the modelled relationships between inflation and bond yields with P/E ratios. These two variables are particularly important as they make up a combined 58% of the weight in our equilibrium P/E equation. In both charts we observe a negative sloping line, suggesting that an increase in inflation or bond yields results in lower P/Es and vice versa, all other factors held constant. At 2.0% inflation, an appropriate P/E would be around 18.5, but the current inflation of around 8.5% is consistent with a 12.5 P/E, which is six multiple points or 32% lower! The change in magnitude from rising bond yields has not had as massive an impact on the modelled relationship but would still subtract one full multiple point from the P/E. The most noteworthy observation from this data is that P/Es still reflect an expectation of moderating inflation

Exhibit 13: Major equity-market indices
Cumulative price returns indices in USD



Note: as of August 31, 2022. Price returns computed in USD. Source: Bloomberg, RBC GAM

Exhibit 14: Global stock-market composite
Equity-market indexes relative to equilibrium



Note: As of August 31, 2022. Source: RBC GAM

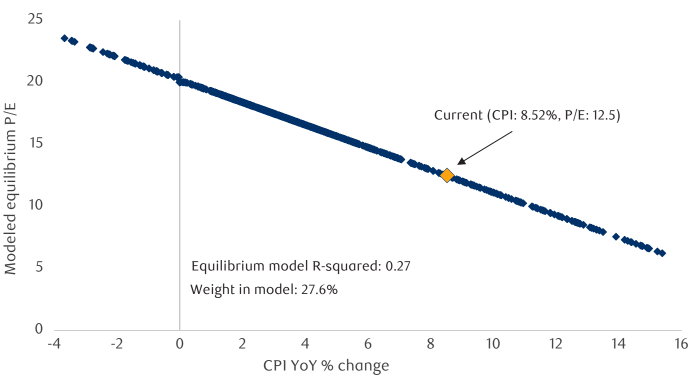
within a reasonable period of time. If markets grow increasingly skeptical or impatient, valuations could head lower still.

A breakdown of the S&P 500's total returns so far this year reveals that almost all of the loss so far can be attributed to the decline in P/Es. Exhibit 17 plots a waterfall-style chart of the components that make up S&P 500 returns this year. The 6% contributions from earnings growth and 0.9% from dividends so far this year were dwarfed by the 21.7% contraction in valuations, leaving the S&P 500 with a negative 16.1% total return between the start of the year and the end of August. Moreover, the rebound from the market lows on June 16 was due almost entirely to an increase in valuations from the bottom as seen in the shaded regions on the chart. On a positive note, the fact that P/Es have dropped so much has alleviated equity-market valuation risk to the point that several of the 10 valuation metrics we track now suggest the market is either reasonably valued or even slightly cheap (Exhibit 18).

The earnings outlook faces challenges

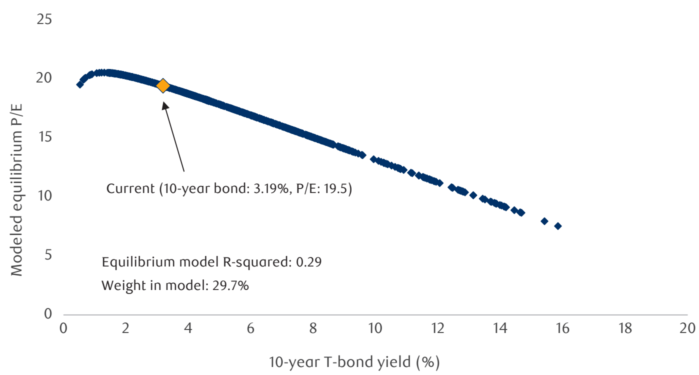
While valuation risk in stocks has been greatly reduced, corporate profits may soon encounter headwinds as slowing economic growth is likely to weigh on earnings. Exhibit 19 plots a history of S&P 500 revenue growth alongside nominal (i.e. real growth plus inflation) GDP growth. Note that the two lines track closely together. While revenues

Exhibit 15: S&P 500 equilibrium model
P/E factor as a function of CPI



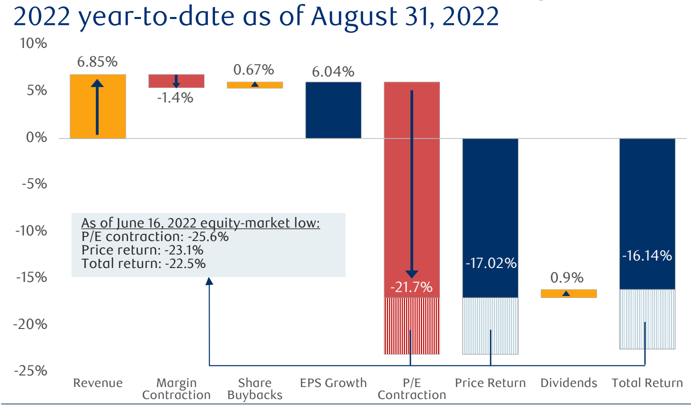
Note: As of August 31, 2022. Source: RBC GAM

Exhibit 16: S&P 500 equilibrium model
P/E factor as a function of 10-year bond yield



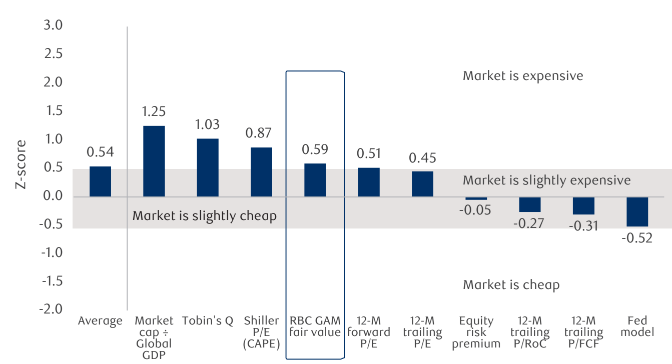
Note: As of August 31, 2022. Source: RBC GAM

Exhibit 17: S&P 500 Total-Return Decomposition
2022 year-to-date as of August 31, 2022



Source: Bloomberg, RBC GAM. Note: shaded areas represent lows reached on June 16, 2022.

Exhibit 18: S&P 500 Index
Normalized valuation metrics



Note: As of August 31, 2022. Source: RBC GAM should hold up well for 2022 given our estimate of 10.1% nominal U.S. GDP growth, we expect a steep decline into 2023, with our GDP growth forecast of 4.3% more or less consistent with 0% revenue growth. As for earnings, our regression of profits to nominal GDP suggests the potential of a 14.7% earnings gain in 2022 followed by a mere 2.9% gain in 2023 (Exhibit 20).

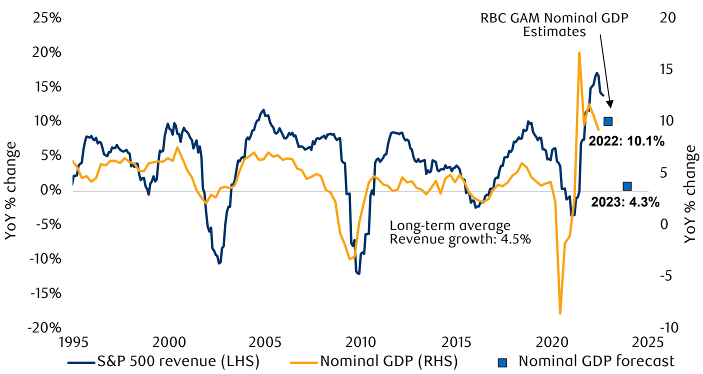
Earnings estimates are now starting to reflect some of the expected softness ahead. Exhibit 21 plots the month-by-month progression of the consensus estimates for S&P 500 earnings. Estimates have trended sideways to slightly down since the start of the year but they remain fairly optimistic, suggesting 8% earnings growth in both 2022 and 2023.

Further downward revisions should be expected as the intensity of estimate cuts has been picking up (Exhibit 22). With earnings still well above their long-term trend, there could be meaningful downside if a negative scenario unfolds since profits tend to fall below their long-term trend during periods of decline (Exhibit 23).

Scenarios outline wide range of outcomes for stocks

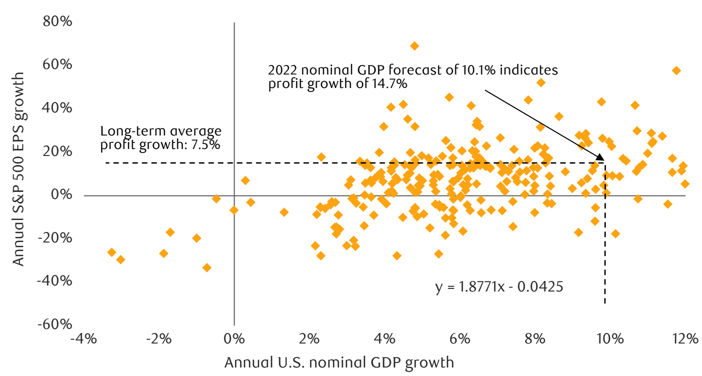
Elevated uncertainty about the economy, interest rates and inflation indicate the range of potential outcomes for stocks spans a wide range. Exhibit 24 plots different possibilities for the stock market based on combinations of

Exhibit 19: United States
S&P 500 revenue and nominal GDP



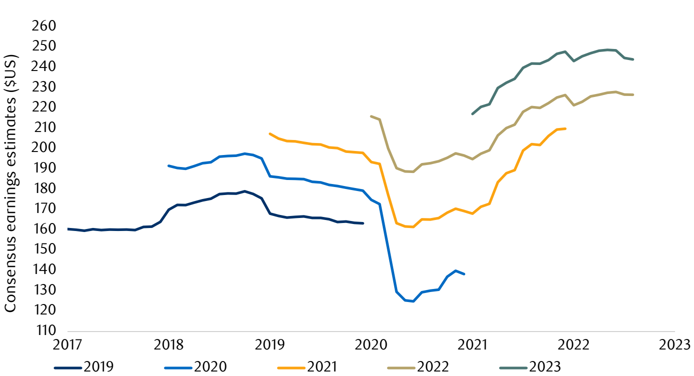
Note: As of Aug 31, 2022. Source: RBC CM, RBC GAM

Exhibit 20: S&P 500 EPS vs U.S. nominal GDP growth



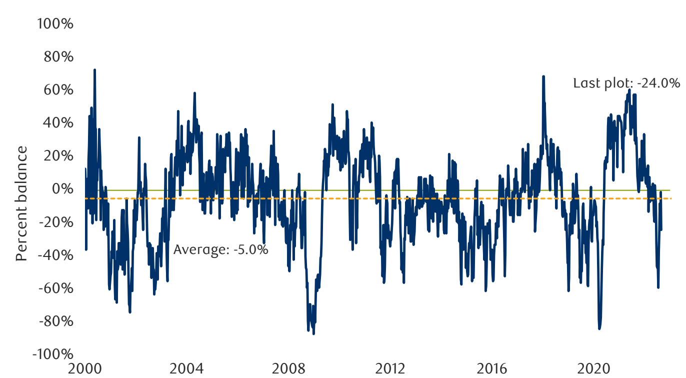
Note: As of Aug 2022. Note: based on quarterly data back to January 1990. Source: Bloomberg, RBC GAM

Exhibit 21: S&P 500 Index
Consensus earnings estimates



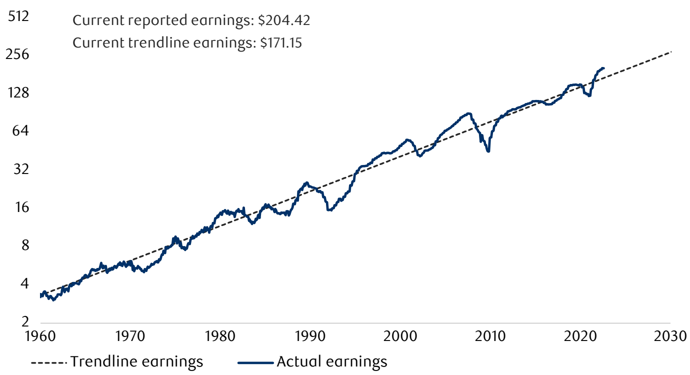
Note: As of September 7, 2022. Source: Thomson Reuters, Bloomberg

Exhibit 22: U.S. equities
Companies with upward earnings revisions



Note: As of August 31, 2022. Source: Citi, RBC GAM

Exhibit 23: S&P 500 earnings comparison



Note: As of August 31, 2022. Source: RBC GAM

various earnings levels and P/E multiples. On the optimistic end of the spectrum, the S&P 500 Index could reach 4170 by the end of August 2023, generating a return of 7.5% with dividends, if the index trades at our modelled equilibrium P/E of 17.6 (i.e. the level consistent with our estimates for inflation, interest rates and corporate profitability) and if earnings achieve the current consensus of US$237.5. Pessimistically, the S&P 500 could trade as low as 2690, a 30% decline from the end of August, if the economy falls into recession and earnings drop by a quarter as they have on average during past recessions. Another adverse scenario would include one where inflation remains elevated and central banks are forced to raise interest rates beyond what is already priced in, or where P/E ratios fall below equilibrium, resulting in further declines for stocks even in an environment where profits manage to meet consensus estimates. It is, of course, possible that there is a path to the high 4000s or low 5000s for the S&P 500 if inflation comes down quickly, the Fed cools tightening, the economy avoids recession and investor confidence is restored. Using these scenarios as guideposts, the potential range for the S&P 500 over the next year is anywhere between 3000 on the downside to 5000 on the upside, and the market is currently sandwiched almost exactly halfway between those two levels. We view both extremes to be unlikely through the year ahead but have been somewhat more active managing our exposures tactically: through the past three quarters we have been reducing equities as they move above that midpoint, shrinking the potential 'best case' returns.

Rally in growth stocks fizzled as yields resumed upward move

Among the major themes so far this year has been the underperformance of high-priced growth stocks relative to value stocks as interest rates spiked higher. While growth stocks attempted a rebound during the summer, they began underperforming again toward the end of August as yields resumed their climb. Exhibit 25 plots the relative performance of the S&P 500 Value Index relative versus the S&P 500 Growth Index in blue, with the U.S. 10-year yield overlaid on the chart in yellow. Notice that the two lines move fairly closely together, especially in the past

Exhibit 24: Earnings estimates & alternative scenarios for valuations and outcomes for the S&P 500

		August 31, 2023			
		Consensus EPS	Flat 0% EPS growth	Trendline earnings	Recessionary*
	P/E	$237.5	$204.4	$182.3	$153.3
+1 Standard Deviation	21.7	5162.1	4442.4	3961.2	3331.8
+0.5 Standard Deviation	19.6	4665.5	4015.0	3580.1	3011.3
Equilibrium	17.6	4168.9	3587.7	3199.1	2690.8
-0.5 Standard Deviation	15.5	3672.3	3160.3	2818.0	2370.2
-1 Standard Deviation	13.4	3175.8	2733.0	2436.9	2049.7

Note: As of August 31, 2022. *U.S. earnings have fallen an average of 25% during recessions. Source: Bloomberg, RBC GAM few years. High-priced growth stocks tend to be more sensitive to changes in interest rates because much of their valuation depends on expected earnings far out into the future. This notion is evidenced in the S&P 500 Growth Index having lagged the S&P 500 Value index by 25.8 percentage points since the start of the year through mid-June as yields soared. More than half of that decline retraced over the summer as fears over inflation dissipated and yields fell from their highs. But with the Fed holding firm to its hawkish tone and yields rising into the end of August, the rally in growth stocks has fizzled.

Some technical indicators reached levels consistent with lasting market bottoms

From a technical standpoint, the pain endured by equity investors so far this year has been intense, and some indicators already suggest that the drop in stocks may be enough to mark a sustained bottom in the broader equity market. Breadth and price-momentum indicators are always helpful to monitor but they are especially useful at extremes and near turning points. While overbought or topping conditions can extend over many months or years, extreme oversold or bottoming conditions tend to be relatively short-lived. We may have seen one of the latter episodes in June/July. The percentage of stocks trading below their 200-day moving average on the New York Stock Exchange and our measure of monthly price momentum for S&P 500 stocks both fell to levels achieved only a handful of times in the past several decades (exhibits 26 and 27). The last time we saw similar readings was during the March 2020 low, which marked a definitive low and signaled a sustained rally for stocks. The time before that was late 2018, which also turned out to be a great entry point for equity investors. While there are many reasons to be pessimistic about the outlook for risk assets, these technical indicators are a source of re-assurance that the pre-conditions for the next bull market in stocks are gradually falling into place.

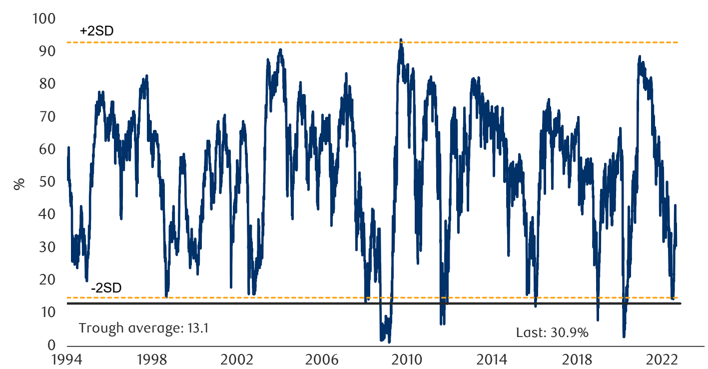
Asset mix – positioning closer to a neutral stance

The macroeconomic outlook is murky given the combination of slowing growth, aggressive monetary tightening and unacceptably high inflation. Adding to the list of challenges is the pandemic, war in Ukraine and an energy crisis in Europe. In this environment, the range of potential

Exhibit 25: Value to growth relative performance
S&P 500 Value Index / S&P 500 Growth Index

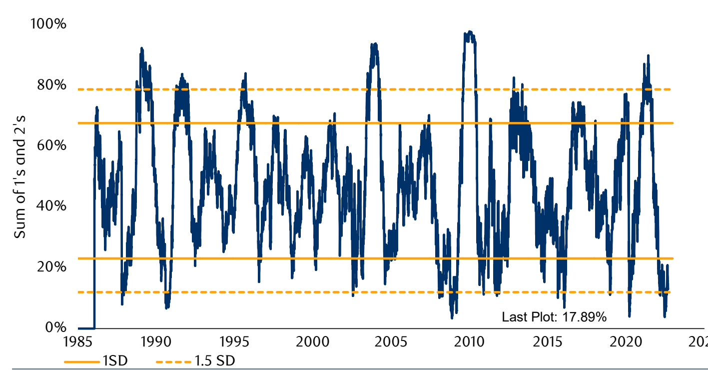
Note: As of Aug 31, 2022. Source: Bloomberg, RBC GAM

Exhibit 26: New York Stock Exchange Composite Index – % of stocks above their 200-day moving average



Note: As of August 31, 2022. Source: Bloomberg, RBC GAM

Exhibit 27: S&P 500 Index
Monthly price momentum

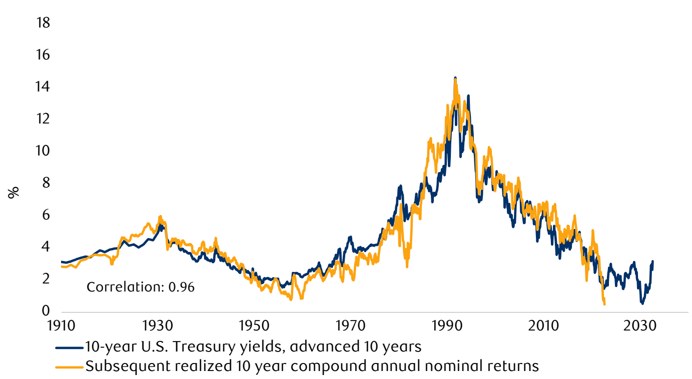


Note: As of August 26, 2022. Source: RBC GAM outcomes for markets is especially wide. That said, we recognize that were these risks to dissipate and a recession avoided, asset prices are positioned to deliver attractive returns.

One benefit of bear markets is that they boost longer-term return potential, and the sell-off in stocks and bonds this year has done just that for both asset classes. For bonds, Exhibit 28 plots the U.S. 10-year yield alongside realized returns over subsequent 10-year periods. The two lines on the chart are highly correlated indicating that the current yield is a strong predictor of the return investors will get from bonds over the next 10 years. As a result, a good forecast for the return on 10-year Treasuries is 3.2% annualized over the next decade, up from 1.5% at the start of the year. For stocks, Exhibit 29 plots a similar relationship, but between the Cyclically Adjusted Price-to-Earnings ratio (CAPE) of the S&P 500 and its realized returns over the subsequent decade. Here too we see a fairly strong relationship, and the chart suggests a forecast for 10-year returns of around 7% annualized for the S&P 500, up from 3% at the start of the year. These improvements in potential returns are meaningful. It's possible, of course, that stocks and bonds could fall further, thereby improving return potential even more, but it's worth acknowledging that investors with a long time horizon are presented with a much better entry point today than they were only eight months ago.

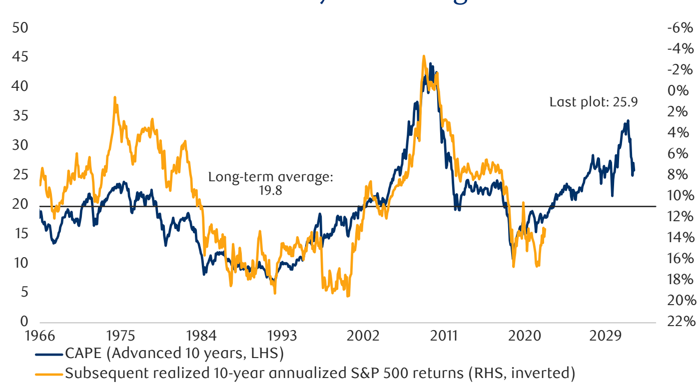
Our asset mix aims to balance risks and opportunities over the short and long term. While falling valuations have improved the outlook for long-term returns, we remain concerned in the short term that that the risk of a recession has risen and that inflation has yet to head sustainably in the direction of the Fed's 2% target. This quarter, we took advantage of the increase in U.S. 10-year yields above 3.0% to add 1.5 percentage points to our fixed-income allocation, sourced from both cash and stocks. At these higher yields, we think bonds offer a much better ballast against a potential downturn in stocks in the event of a recession. That said, the last eight months were difficult for balanced investors as stocks and bonds both moved together in a negative direction. We acknowledge that both stocks and bonds could continue to be adversely affected in the near term by unacceptably high inflation, although this is not our base-case scenario. Over the longer term, we continue to believe that stocks will outperform bonds and so are maintaining a slight underweight in bonds and overweight in stocks. Reflecting our cautious stance, however, our positions are much closer to a strategic neutral setting than they've been in the past. For a balanced global investor, we currently recommend an asset mix of 61.5 percent equities (strategic neutral position: 60 percent) and 37.5 percent fixed income (strategic neutral position: 38 percent), with the balance in cash.

Exhibit 28: U.S. 10-year Treasury note and returns



Note: As of August 31, 2022. Source: Deutsche Bank, Haver Analytics, RBC CM, RBC GAM

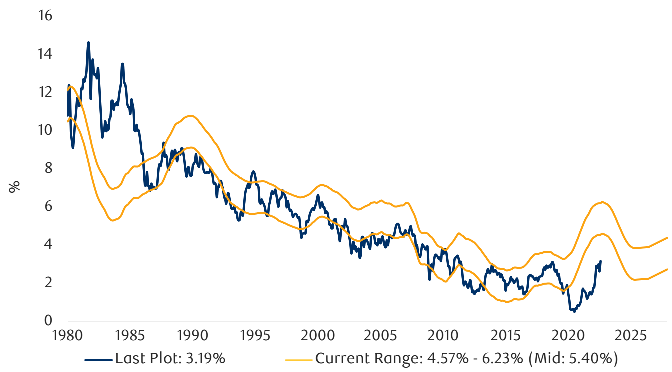
Exhibit 29: Shiller's CAPE
Real S&P 500 Index / 10-year average of real EPS



Note: As of Aug 31, 2022. Source: Macrobond, Bloomberg, RBC GAM

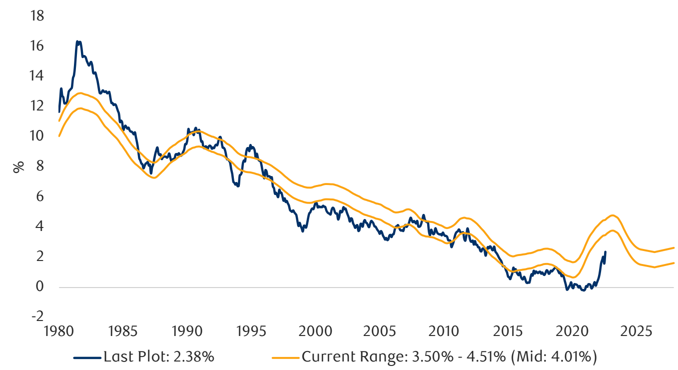
Global fixed income markets

U.S. 10-Year T-Bond Yield
Equilibrium range



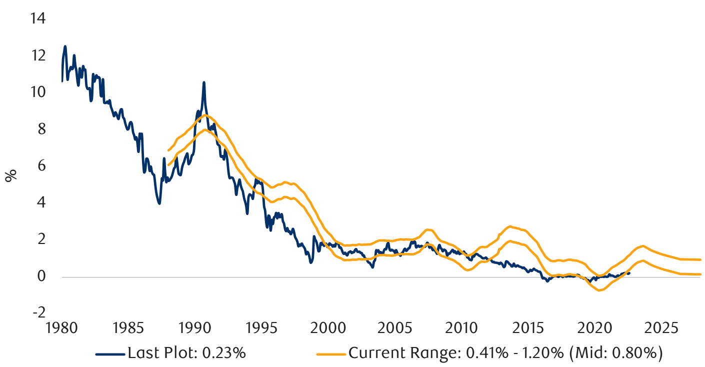
Note: August 31, 2022. Source: RBC GAM, RBC CM

Eurozone 10-Year Bond Yield
Equilibrium range



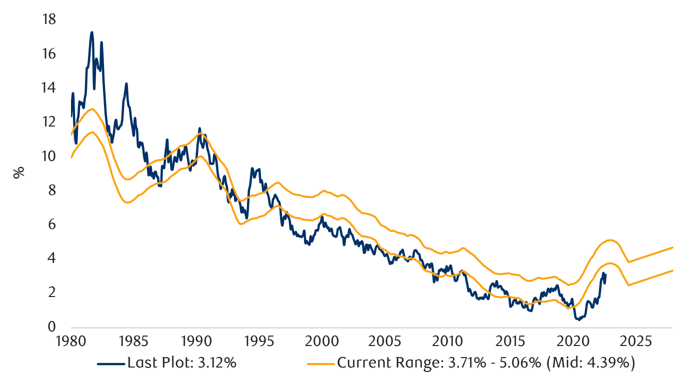
Note: August 31, 2022. Source: RBC GAM, RBC CM

Japan 10-Year Bond Yield
Equilibrium range



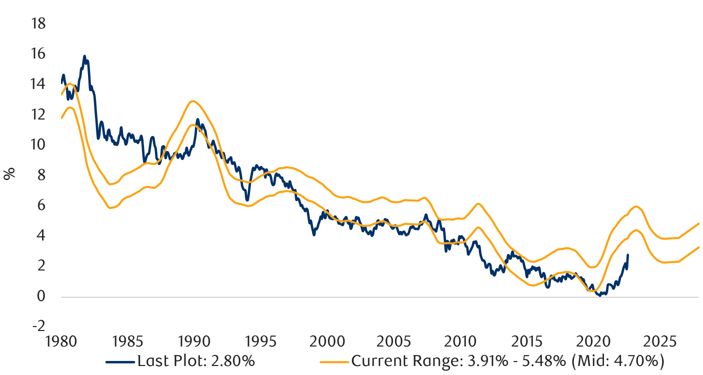
Note: August 31, 2022. Source: RBC GAM, RBC CM

Canada 10-Year Bond Yield
Equilibrium range



Note: August 31, 2022. Source: RBC GAM, RBC CM

U.K. 10-Year Gilt
Equilibrium range



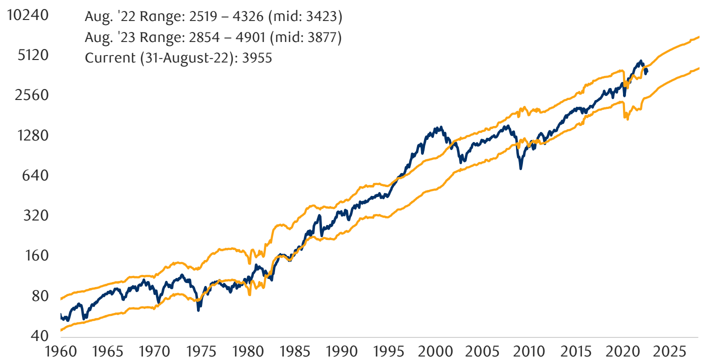
Note: August 31, 2022. Source: RBC GAM, RBC CM

"Our model for 10-year Treasuries suggests that government bonds have likely priced in most of what is needed to reflect inflation and real interest rates."

Global equity markets

S&P 500 Equilibrium

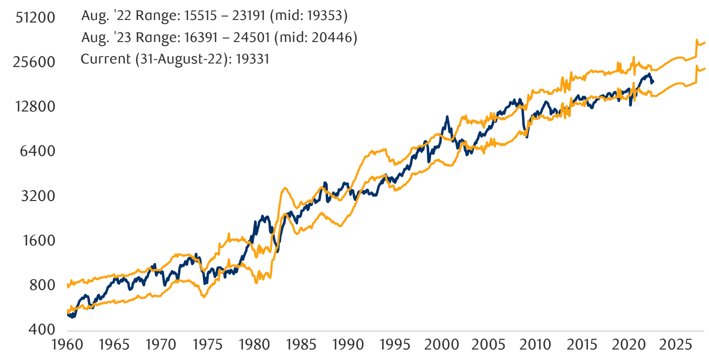
Normalized earnings and valuations



Source: RBC GAM

S&P/TSX Composite Equilibrium

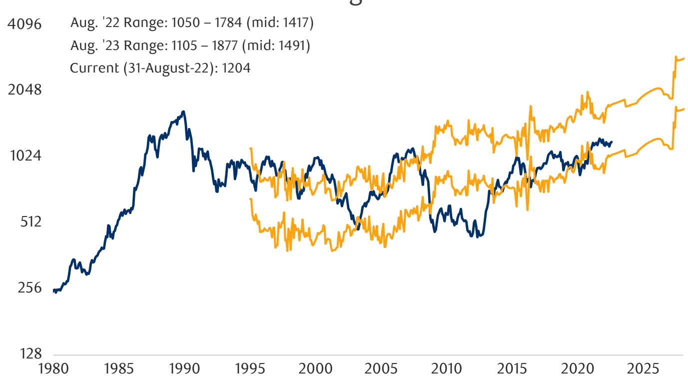
Normalized earnings and valuations



Source: RBC GAM

MSCI Japan Index

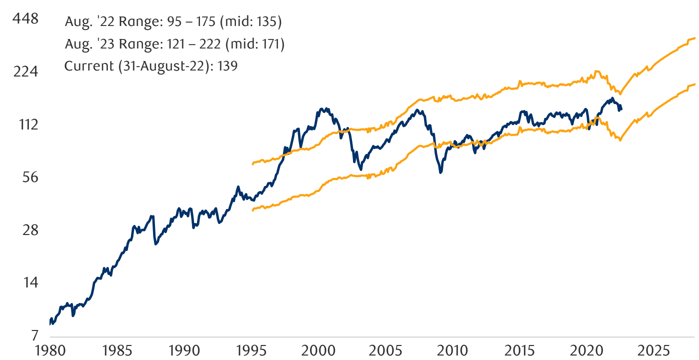
Normalized earnings and valuations



Source: RBC GAM

MSCI Europe Index

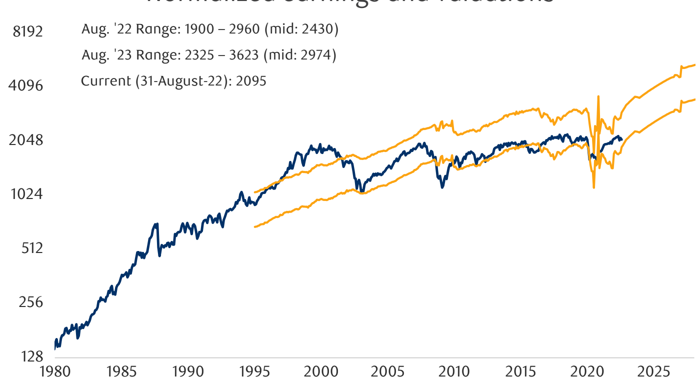
Normalized earnings and valuations



Source: RBC GAM

MSCI U.K. Index

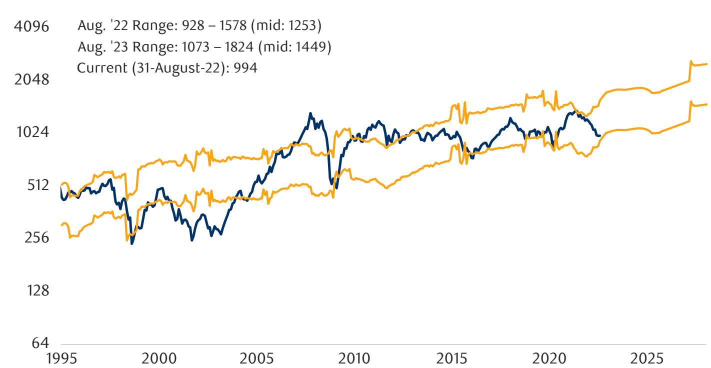
Normalized earnings and valuations



Source: RBC GAM

MSCI Emerging Markets Index

Normalized earnings and valuations



Source: RBC GAM

Note: The fair value estimates are for illustrative purposes only. Corrections are always a possibility and valuations will not limit the risk of damage from systemic shocks. It is not possible to invest directly in an unmanaged index.

Global fixed income markets

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Market view

The bond market is challenging investors in ways it hasn't for at least a decade.

The 10-year Treasury yield rose to 3.50% in June, the highest level since 2011, amid efforts by the U.S. Federal Reserve (Fed) to counter the most severe inflation in 40 years. In this context, one of the big questions on bond investors' minds becomes: Is 3.50% the top yield for the current cycle? It will take a while before we know the answer. The adverse effect of higher interest rates typically takes about a year to move through the economy. In the meantime, the U.S. 10-year yield is likely to trade in a wide range on both sides of 3%, with inflation data as the key driver.

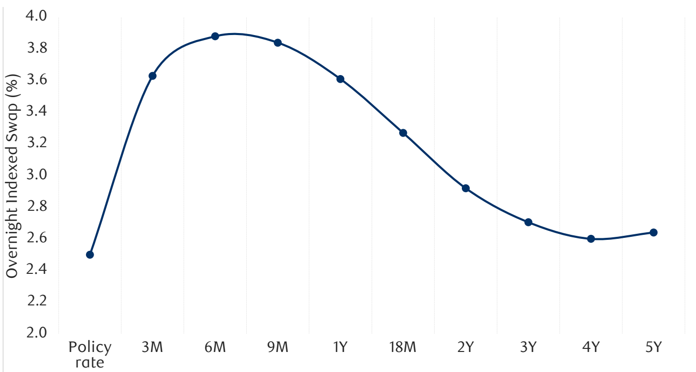
The broad range in bond yields that we foresee is the product of competing views on how the inflation story will unfold. One camp believes that inflation is close to peaking and that a few more Fed hikes and falling inflation mean that, by mid-2023, interest rates will be restricting economic growth. A short but shallow recession could ensue. The opposition counters that inflation will not be coming down so fast, and that central banks should stay on an aggressive tightening course until policy rates are decisively above the inflation rate. This group argues that a fed funds rate of at least 4.5% or higher will be necessary to wring inflation from the system.

A look at central-bank policy this year gives an idea why this debate is so important. The Fed is in the process of raising policy rates at the fastest pace since the 1970s, with rate hikes totaling 2.25 percentage points since March. The U.S. central bank has also started to roll back extensive bond purchases for the first time since 2020. Leading economic indicators, following in the wake of the rapid surge in borrowing costs, are deteriorating at a pace that could presage a rapid slowdown in consumption over the months ahead. Rising borrowing costs are clearly a burden on the economy and will at some point weigh on the jobs market and growth.

According to market indicators, the Fed will complete its tightening cycle by the summer of 2023 and start easing a few months later (Exhibit 1). The U.S. yield curve – a measure of the relationship between short- and long-term interest rates – appears to confirm that the current tightening cycle is in its last stages. Inverted yield curves – periods in which short-term yields exceed longer-term yields - have been a generally dependable predictor of bad economic news an average of 18 months into the future.

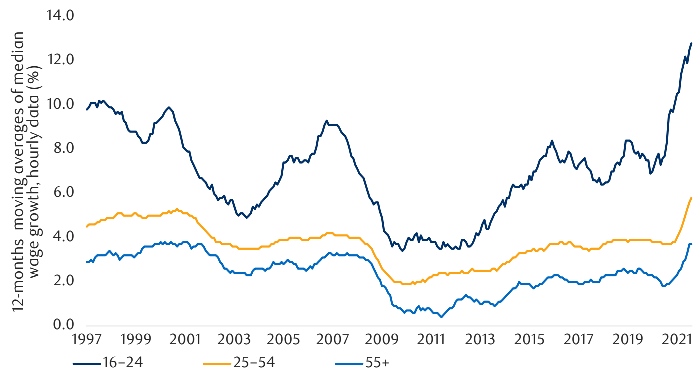
The Fed's decision to embark on quantitative tightening could be helping to force down bond yields as withdrawing liquidity in a slowing economy will tend to crimp economic growth, leading investors to seek safety in government

Exhibit 1: Policy-rate expectation
Investors are expecting the Fed to finish its aggressive tightening in six months



Note: As of August 30, 2022. Source: Bloomberg

Exhibit 2: Tight labour market led to higher wage growth for everybody – U.S. wage growth tracker by age



Note: As of July 31 , 2022. Source: BLS and Federal Reserve Bank of Atlanta

bonds. This development runs counter to the notion that halting rollovers in maturing bonds should send bond yields higher since it reduces demand for fixed-income assets.

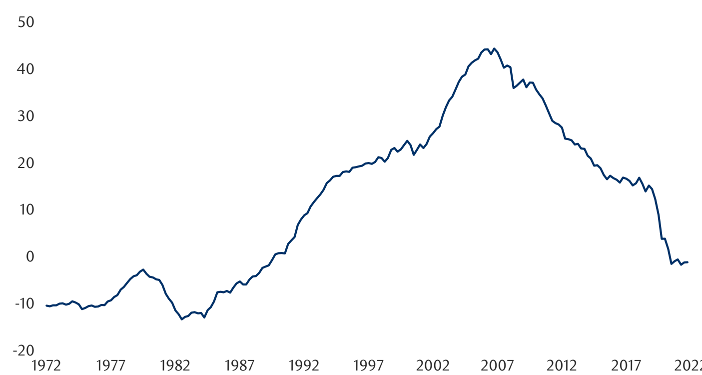
If the first group is right about inflation and the trajectory of economic growth, then U.S. 10-year Treasury yields have peaked, and the Fed will stand ready to cut rates on signs that interest rates are too high for the economy to handle. The assumption here is that inflation is coming down quickly toward the 3% level currently anticipated by inflation derivatives.

Those in the second camp will not be satisfied with the Fed taking its foot off the monetary pedal. They argue that that central bankers should extend rate hikes until inflation, excluding food and energy, falls back to about 2%. Their case rests on a belief that the Fed has been too willing to maintain a loose monetary policy after economic recoveries take hold, and that investors must be relieved of their reliance on very low interest rates that inflate demand for credit.

For now, consumer demand continues to run hot even in the face of higher interest rates and persistent inflation, leaving economists with the difficult job of figuring out when demand will adjust sufficiently lower that prices for basic items such as food and rent can start to turn down. The unemployment rate is very low, with demand for labour outstripping supply and contributing to inflation. This labour-market tightness has translated into wage growth for all age groups, but especially for young people (Exhibit 2), and household balance sheets are by some measures in their best shape in 30 years (Exhibit 3). As a result, households can often borrow to make up for purchasing power lost to inflation, adding to inflationary pressures.

The labour-market strength will likely persist unless the U.S. economy goes into a deep recession over the next year. Unfilled positions are widespread across industries, and

Exhibit 3: Private-sector balance sheet has never been this good over the past 30 years
Household net debt as a % of GDP



Note: As of June 30, 2022. Source: Bloomberg, Household total debt minus Household & Non-profit Organization currency & deposits unemployment rates may stay sticky because of a tendency for employers to hoard existing workers during periods of high employee turnover. The adjustment is likely to start from a sharp reduction in job postings driven by uncertainty about the pace of growth. For now, an employment-market scenario characterized by an insufficient workforce, low productivity and rising wages is a recipe for inflationary pressures and could restrain economic activity in the coming year, forcing the Fed to keep policy tighter than it would like.

The bond market is at this stage pricing in a scenario in which the Fed continues hiking rates until they reach restrictive territory and then nudging them lower - all over the next 12 months. As the tug of war between the inflation-peak-is-behind crowd and fight-is-not-won crowd takes place, we expect yields to trade between 2.5% and 3.5% over the next 12 months. In such an environment, it will be essential for bond portfolio managers to follow a nimble pragmatism in trading portfolios rather than aligning with either of the views outlined above.

Direction of interest rates

Our forecast is for the yield curve to stay inverted with the 10-year yield at 3%, expecting economic weakness brought on by Fed rate hikes.

United States

Since the Fed delivered its first hike in March, U.S. 10-year Treasury yield has vacillated between a low of 2.35% in April and the June high of 3.5%. We are expecting this type of extreme swing to continue over our forecast horizon, based on the preceding arguments.

Our forecast for the fed funds rate is that it will rise to 3.5% by the end of this year, but the possibility exists that it will get to as high as 3.75% to 4.00% by mid-2023. Whether we get that high and for how long will depend on how fast inflation declines. In our opinion, inflation may linger considering the economy needs time to adjust to Fed's tightening measures. As such, we are expecting the Fed to stay at the restrictive level longer than what we saw at the end of 2017-2019 tightening cycle. Our forecast is for the yield curve to stay inverted with the 10-year yield at 3%, expecting economic weakness brought on by Fed rate hikes.

We are raising our outlook for the 10-year bund yield to 1.5% from 0.50%.

Eurozone

The Russia-Ukraine war continues with no end in sight. Sanctions imposed on Russian commodity exports have sent energy and crop prices much higher, and summer drought across much of Europe has added to economic woes and fueled further price increases. Economic indicators point toward a deeper slowdown come the winter, and we should expect high energy prices and frequent disruptions. Governments are likely to continue implementing measures to give consumers a degree of relief from surging energy costs. The impact on businesses has and will continue to be severe as cost increases related to energy have been unprecedented.

For the European Central Bank (ECB), the war presents a predicament in the conduct of monetary affairs. The central bank simultaneously faces a more precarious economic environment than North America but with the prospect of worse inflation. As a result, the ECB will have to balance the need to manage inflation with the possibility that the continent's energy shortage will trigger social unrest in parts of Europe over the next year. Investment indicators suggest the ECB will hike its policy rate as high as 2.3% within the next 12 months and 1.65% by the end of this year, but we think this view may be too aggressive. Come winter, the absence of a ceasefire in Ukraine and energy shortages may well trigger the feared unrest, business disruptions, worsening fiscal positions and weaker-than-expected economic growth in parts of Europe. The window for rate hikes is shrinking fast for the ECB.

The ECB's decision in July to end just over eight years of benchmark interest rates below zero and introduce a modified bond-purchase program aimed at defending Italy and other weak Eurozone members, showcased the political sensitivity required to manage the currency's bloc monetary affairs. The new policy tool, known as the Transmission Protection Instrument (TPI), is designed to provide a safeguard for the euro. While the measure stipulates that it can be used to stabilize only countries following prudent macroeconomic policies, to us it seems destined to be invoked in support of the very weakest. We expect that the TPI will be utilized within our forecast horizon, and that the criteria for its invocation will be defined leniently.

The TPI may, in fact, be part of the reason that investors are not more concerned about Italy's September 25 national elections, which according to polls would be won by a right-wing bloc were they held today. Italian bonds benefited over the summer from the ECB's relentless support: the real test could come after Europeans return from their extended summer vacations.

Our base case scenario is that the ECB will deliver a total of 0.75 percentage point of rate hikes over the next year, taking its policy rate to 1.50%. We are also raising our outlook for the 10-year bund yield to 1.50% from 0.50%.

Our forecast for the 10-year government bond yield remains unchanged at 0.25%.

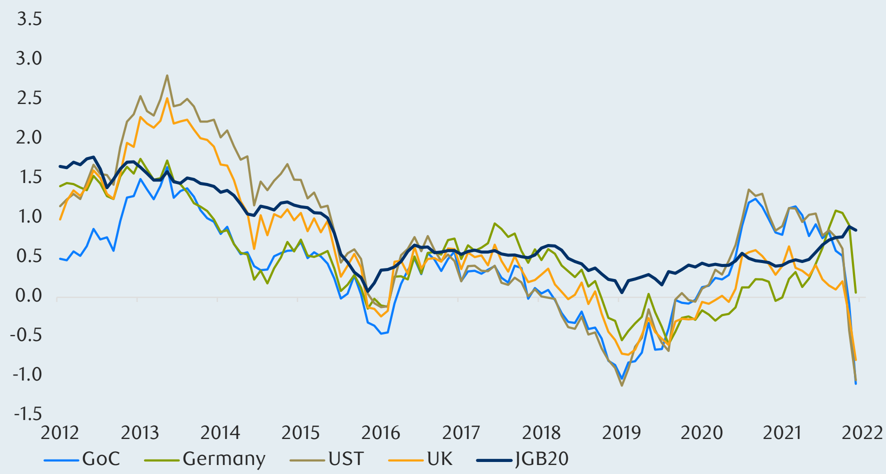
Japan

Sales by Japanese life insurers of foreign bonds reached a new monthly record of 1.6 trillion yen (US$11.7 billion) in July as the yield advantage associated with investing abroad diminished on a currency-hedged basis (Exhibit 4). We expect these financial repatriations to continue in the coming months, and that they will tend to depress government bond yields as some of the proceeds end up in the domestic fixed-income market.

Japanese inflation is running at a multi-year high, and rising producer prices and a weak yen suggest that even greater price pressures are in store. Most of the inflation is being driven by higher costs for energy and food, and aside from these two categories, inflation is well below the Bank of Japan's (BOJ) 2% target. However, there are signs that Japan's deflationary attitude is lifting as households expect an extension in short -term inflation and businesses expect higher prices over the intermediate term. For the time being, the BOJ can take comfort in the fact that neither investors nor consumers expect inflation to remain a significant issue in the longer term.

Over the forecast horizon, we expect the BOJ to retain the policy that holds the range between short- and long-term yields steady (yield control), and foresee no change to the policy rate. Our forecast for the 10-year government bond yield remains unchanged at 0.25%.

Exhibit 4: Japanese Government Bonds provide the best yield on a currency-hedged basis
Global 10-year bond yield % (hedged into JPY)



Note: As of July 31, 2022. Source: Bloomberg

We expect the 10-year yield to trade at 2.75% and the BOC to raise the benchmark overnight interest rate to 3.50%.

Canada

The Bank of Canada (BOC) surprised investors by raising its policy interest rate in July by 1 percentage point to 2.5%, the biggest move since 1998 and the largest increase by any G7 central bank during the current tightening cycle. The rate increase brings the policy rate into the middle of the range that the BOC estimates is neither conducive nor destructive to economic growth (the neutral rate). We expect the BOC to extend rate hikes given the breadth of inflation and expectation among consumers and businesses that high inflation will persist. Over the next 12 months, we expect the 10-year yield to trade at 2.75% and the BOC to raise the benchmark overnight interest rate to 3.50%.

Our yield forecast for the 10-year gilt climbs by 0.50% to 2.75%.

United Kingdom

U.K. inflation continues to ratchet higher and there are bold forecasts that it could reach 20% by early next year. The country's inflation problem appears more pernicious than in its developed-market peers.

While high U.S. inflation has been tied to particularly generous pandemic-spending programs, the U.K.'s problems appear linked to its 2020 exit from the European Union, compounding the impact of surging food and energy prices. There is little that the Bank of England (BOE) can do to combat these issues.

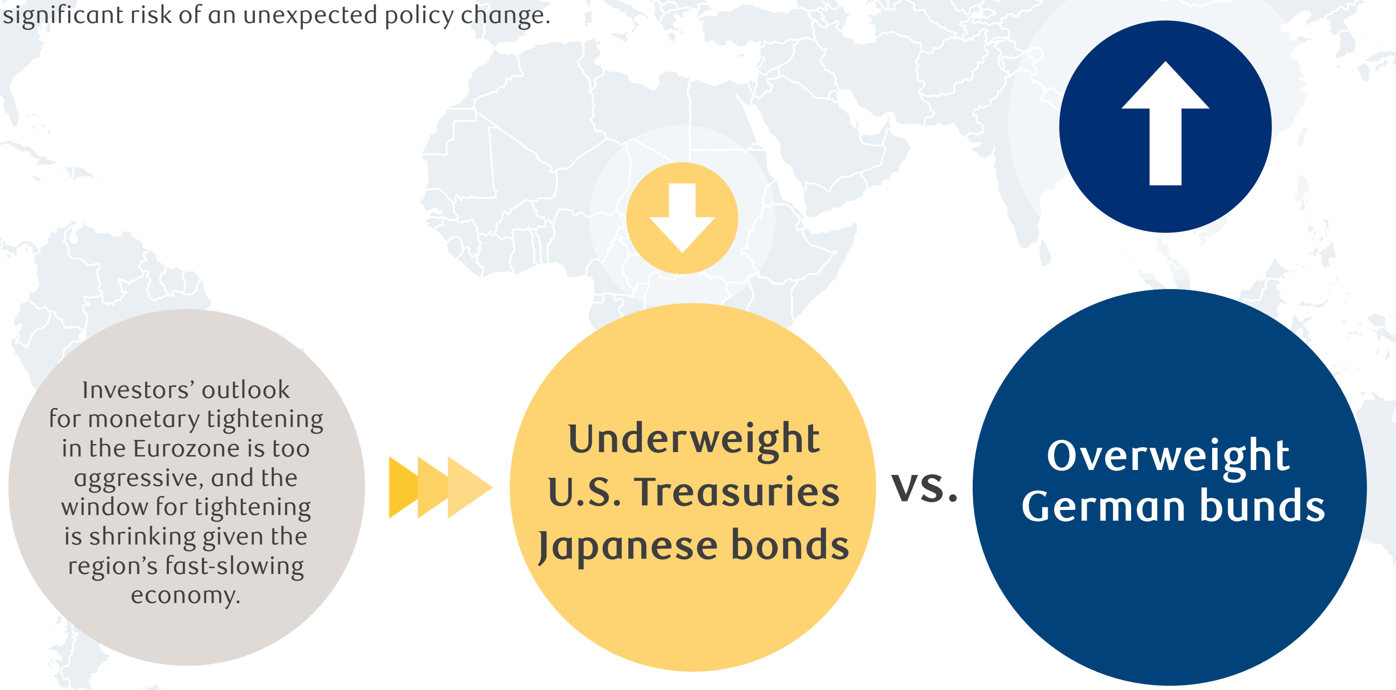
The approaching winter could be devastating for many U.K. households amid concerns that energy bills could account for 12% to 15% of median household income. The two candidates vying to replace Boris Johnson as prime minister are promising subsidies and tax cuts to help with the cost-of-living crisis, implying even greater deterioration in the government's budget deficit.

The BOE's September 15 meeting will be closely watched by investors. As with the ECB, the pressure will be on the BOE to increase rates to combat inflation, while the weakening economy dampens the appetite for economy-dampening rate hikes. Demand for labour is already starting to soften based on a fall in job vacancies for two consecutive months. Within 12 months, the U.K. could be well on the road to cutting policy rates.

Our forecast for the BOE's benchmark interest rate is 3% over the next 12 months, but we cannot rule out the possibility that punishing inflation will force the BOE lift the rate to more than 4.0% and start to roll it back to 3.0% – and all of it occurring within our forecast horizon. Our yield forecast for the 10-year gilt climbs by 0.50% to 2.75%.

Regional outlook

We believe that investors' outlook for monetary tightening in the Eurozone is too aggressive, and that the window for tightening is shrinking given the region's fast-slowing economy. We recommend a 5-percentage-point overweight in German bunds; a 2.5-percentage-point underweight to Treasuries; and a 2.5-percentage-point underweight in Japanese government bonds, whose yields have risen little and bear the significant risk of an unexpected policy change.



Interest rate forecast: 12-month horizon

Total Return calculation: September 1, 2022 – August 31, 2023

U.S.						
	3-month	2-year	5-year	10-year	30-year	Horizon return (local)
Base	3.50%	3.20%	3.10%	3.00%	3.15%	5.22%
Change to prev. quarter	0.75%	0.20%	0.10%	0.25%	0.45%	
High	4.25%	4.50%	4.25%	3.75%	3.90%	0.06%
Low	1.5%	2.0%	2.1%	2.3%	2.50%	10.62%
Expected Total Return US$ hedged: 5.24%						

Germany						
	3-month	2-year	5-year	10-year	30-year	Horizon return (local)
Base	1.50%	1.40%	1.15%	1.50%	1.40%	5.45%
Change to prev. quarter	1.00%	1.15%	0.65%	0.75%	0.85%	
High	2.00%	2.30%	2.00%	1.50%	1.40%	3.94%
Low	0.00%	0.00%	(0.10%)	(0.10%)	0.10%	18.00%
Expected Total Return US$ hedged: 8.28%						

Japan						
	3-month	2-year	5-year	10-year	30-year	Horizon return (local)
Base	(0.10%)	0.05%	0.20%	0.25%	1.30%	1.64%
Change to prev. quarter	0.00%	0.00%	0.00%	0.00%	0.30%	
High	0.00%	0.15%	0.25%	0.50%	1.60%	(2.45%)
Low	(0.10%)	(0.10%)	(0.10%)	0.00%	0.80%	9.22%
Expected Total Return US$ hedged: 5.75%						

Canada						
	3-month	2-year	5-year	10-year	30-year	Horizon return (local)
Base	3.50%	3.25%	2.90%	2.75%	2.80%	6.13%
Change to prev. quarter	1.00%	0.75%	0.40%	0.15%	0.25%	
High	4.00%	4.25%	3.70%	3.50%	3.35%	1.45%
Low	1.50%	1.75%	2.00%	2.00%	2.20%	12.13%
Expected Total Return US$ hedged: 5.74%						

U.K.						
	3-month	2-year	5-year	10-year	30-year	Horizon return (local)
Base	3.00%	3.40%	3.00%	2.75%	3.10%	5.09%
Change to prev. quarter	1.00%	1.30%	0.75%	0.50%	1.00%	
High	4.25%	4.60%	4.00%	3.75%	3.25%	0.87%
Low	1.75%	1.80%	1.90%	2.00%	2.30%	16.38%
Expected Total Return US$ hedged: 5.69%						

Source: RBC GAM

Currency markets

Higher interest rates, concern about the macro backdrop keep the greenback's rally alive

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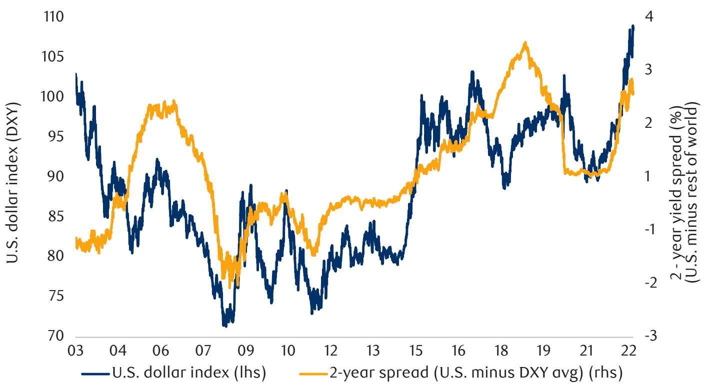
Daniel Mitchell, CFA
Senior Portfolio Manager
RBC Global Asset Management Inc.

The U.S. dollar has rallied strongly this year, gaining broadly against both developed- and emerging-market currencies. A relatively hawkish U.S. central bank, the uncertain financial-market outlook and softening global economic growth have all played roles in driving both a stronger greenback and foreign-exchange markets in general. The greenback now stands above its March 2020 highs and is extremely overvalued by most measures. In our view, the currency should weaken over the medium term, but extraordinary factors may lend it further support for the rest of this year. On a 12-month horizon, we remain more constructive on the Canadian dollar and Japanese yen than we are on the euro, pound or U.S. dollar.

The rise of the U.S. dollar has been relentless. This year's 7.5% appreciation on a trade-weighted basis came on top of gains last year, resulting in an overall 14% increase since the greenback's rally started in May 2021. These gains are largely attributed to the U.S. Federal Reserve's (Fed) more aggressive approach to raising interest rates than most other developed-market central banks. Divergences in monetary policy between countries are often a chief concern for foreign-exchange markets (Exhibit 1) and have been especially important this year as the Fed was forced to raise rates faster than expected to take into account accelerating consumer inflation caused by rising commodity prices and supply shortages. Developments abroad have also contributed to the dollar's gains: slower economic activity in China buoys the dollar's appeal and the energy crisis in Europe threatens the region's political and economic stability.

Exhibit 1: U.S. dollar and 2-year yield spreads

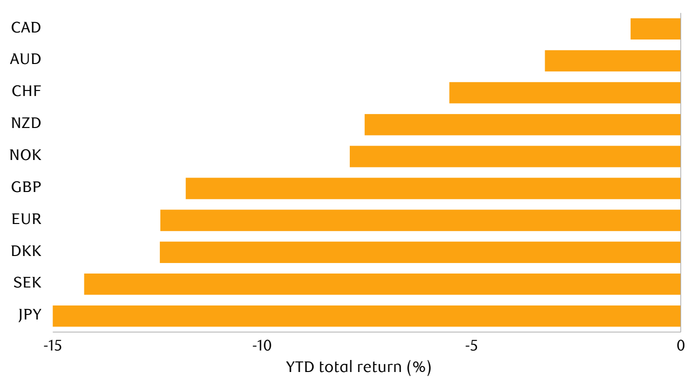


Note: As at August 26, 2022. Source: Bloomberg, RBC GAM

The greenback's trajectory tends to dictate the performance of major currencies, so the recent depreciation of all developed-market currencies (Exhibit 2) against the dollar is not an uncommon occurrence. Monitoring the phases of the dollar cycle is of particular importance because periods of U.S.-dollar strength and weakness tend to persist for many years (Exhibit 3). Turning points in the greenback are notoriously difficult to call, and we have been flagging one such bearish turn for several quarters. The war in Ukraine and the Fed's aggressive approach to tackling inflation have delayed this shift and caused our bear-market roadmap to take a pretty significant detour (Exhibit 4). While these short-term developments have thrown off our forecasts, we have not changed our longer-term expectation of U.S.-dollar weakness, aside from cutting back our euro outlook in response to negative developments on the continent.

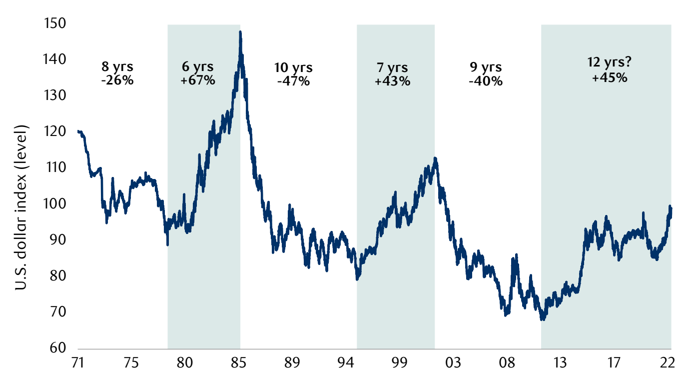
One factor underpinning our conviction that the U.S. dollar will fall is that the greenback is as richly valued as it has been on most measures since the early 2000s. Purchasing power parity (PPP) models indicate that dollar strength over the past few months has pushed the currency beyond thresholds for what can be considered extremely expensive (Exhibit 5), and history has taught us that currencies typically don't remain at such levels for very long. Historical analysis conducted by Deutsche Bank tells us that

Exhibit 2: Developed-market currency performance



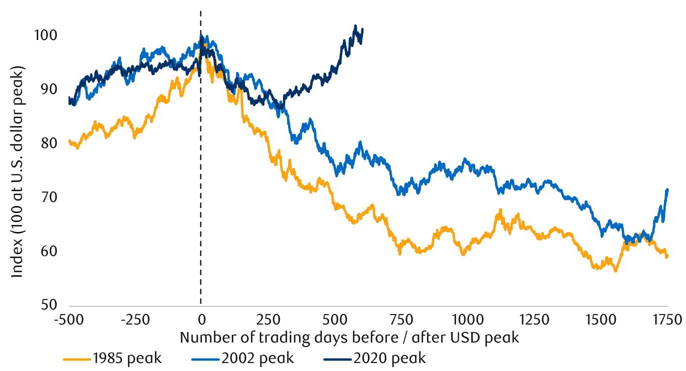
Note: As at August 25, 2022. Source: Bloomberg, RBC GAM

Exhibit 3: Long-term U.S. dollar cycles



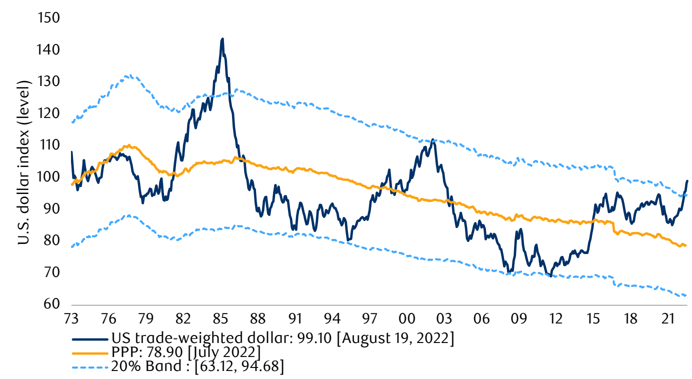
Note: As at August 25, 2022. Source: Bloomberg, RBC GAM

Exhibit 4: U.S. dollar bear-market roadmap



Note: As at August 26, 2022. Source: Bloomberg, RBC GAM

Exhibit 5: U.S. dollar – Purchasing Power Parity valuation



Note: Uses new Fed USD index from December 31, 2019 onward (USTWAFE Index). As at August 19, 2022. Source: U.S. Federal Reserve, Bloomberg, RBC GAM currencies have tended to return to fair value within months of crossing outside of their PPP bands. We can therefore expect dollar weakness, when it comes, to unfold relatively quickly.

It is also conceivable that the temporary factors underpinning gains in the greenback could persist for longer than investors currently expect. Three items could prolong this period of U.S.-dollar strength:

1. The Fed could maintain tighter monetary policy for longer than the markets expect in order to demonstrate its commitment to stamping out today's inflation problem.
2. A slower-than-expected rollout of effective COVID-19 vaccines in China could result in continued lockdowns and further disappointment on economic activity, which would support the greenback versus the renminbi.
3. A more severe energy crisis in Europe could depress the euro even further. However, the unpredictability of both the weather and Russia's tactics in withholding natural gas from Europe make predictions in this area especially difficult.

How far the dollar rallies against the euro because of these three factors is critical. Deutsche Bank has tried to answer this question using quantitative approaches that include valuation models, technical indicators and the single currency's historical performance during equivalent periods (Exhibit 6). The intent of this framework is not to derive a forecast but rather to estimate how far the euro can fall before its weakness becomes extreme. Most metrics seem to settle on an exchange rate between 0.92 euro per dollar and 0.95 as representing a decline that is severely stretched. That's not far from current levels just below parity. Further declines toward 0.80, as some forecasters are calling for, are much less likely in our view.

Exhibit 6: Euro scenario analysis

Approach	Description	EUR reaches...
Valuation method	Valuation nearing extremes on multiple models	REER : 1.0000 PPP : 0.9850 BEER : 0.9300
Risk premium	Safe haven demand for USD already extreme Global recession could extend US dollar's rally further	EUR to 0.9800
Technical (range)	Median annual EUR range is 16% To extend '22 range to median or 90th percentile, EUR must fall to:	Median : 0.9500 90th percentile : 0.9200
Technical (exhaustion)	USD gains typically slow beyond 20% YoY	EUR to 0.9500
Volcker episode	USD analog to 1984 tightening cycle	EUR to 0.8350
Taper Tantrum	USD analog to 2013 taper tantrum	EUR to 0.9500
	Average	**0.945**

Note: As at August 26, 2022. Source: Deutsche Bank, BIS, Citi, Scotiabank, RBC GAM

Euro

It's not easy these days to find a silver lining in the European outlook. Storm clouds abound with a war raging near Western Europe's borders and high energy prices crushing economic growth. Additional punishment for natural-gas-dependent Germany comes in the form of low water levels in the country's main transport rivers, which has curtailed shipping, and water temperatures in France that are too high for cooling nuclear reactors, thereby limiting fuel exports to Germany. Add to the mix political uncertainty in Italy and the erosion of European solidarity as countries squabble over exemptions from Russian oil-import bans, and it becomes difficult for investors to justify owning the single currency – especially when it offers such low yields.

Perhaps the only marginal positive for the euro is that bond yields are no longer negative as markets have begun pricing in an increasing number of interest-rate hikes by the European Central Bank. European investors have allocated a whopping 4 trillion euros abroad (an average of about 4% of GDP per year) since the central bank imposed negative rates in 2014, and some of this capital has started to return (Exhibit 7). This lone positive seems insufficient to hold back the tide of investor bearishness, and so our US$1.13 per euro forecast is due not so much to a vote of confidence in Europe as it is to a negative view on the greenback.

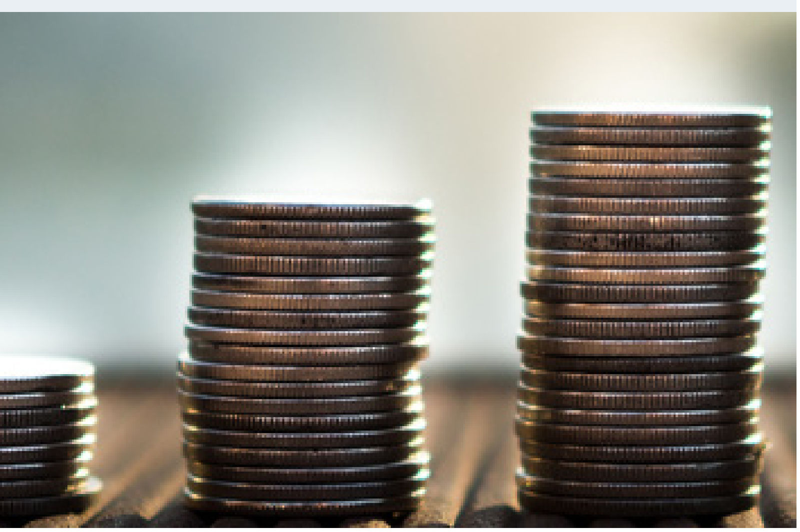
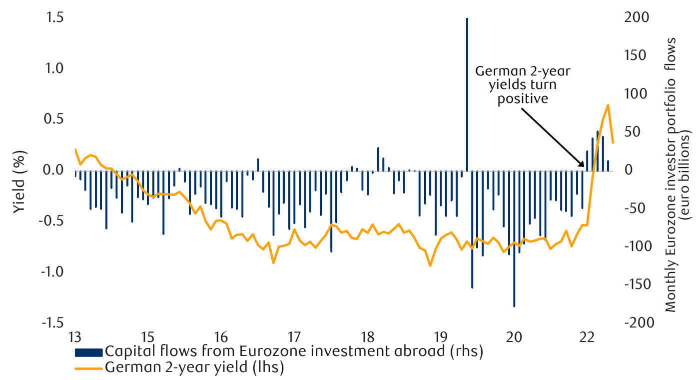


Exhibit 7: Eurozone investors bringing money home



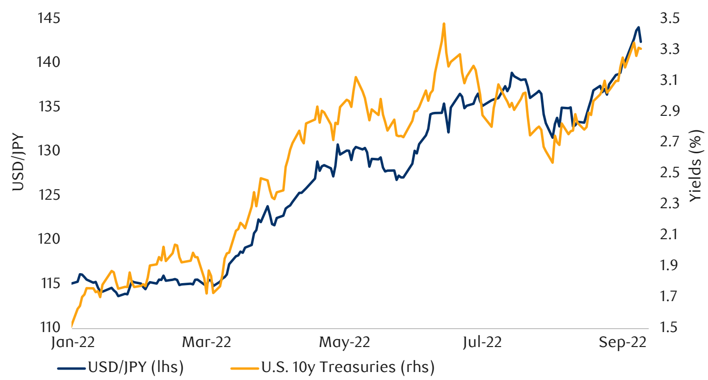
Note: As at July 31, 2022. Source: Bloomberg, RBC GAM

Japanese yen

For most of this year, the Japanese yen has traded in lockstep with U.S. 10-year yields (Exhibit 8), themselves a reflection of Fed rate-hike expectations and recession fears. We suspect that the yen could benefit from concerns about economic growth and we note that trends in web searches and other media intensity indicators (Exhibit 9) are mirroring the top in yields. An environment of falling inflation and deteriorating global growth may indeed be fertile ground for yen strength because the yen tends to benefit both from lower global bond yields and weaker equity markets. A recession-led decline in oil prices might also support the yen as it would reduce Japan's import bill.

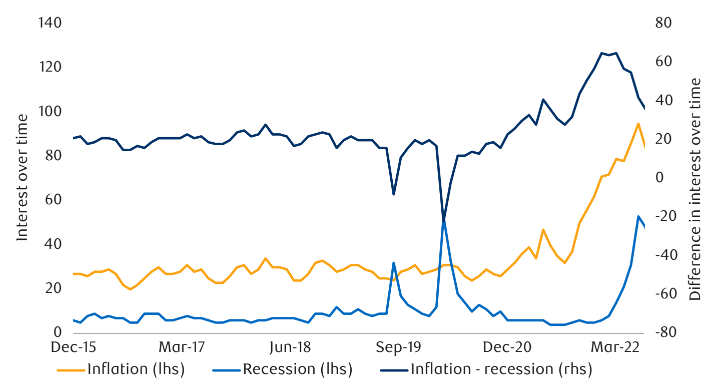
Other factors point to a stronger yen and would be consistent with broad U.S.-dollar weakness. These positives include Japan's large current-account surplus and the currency's significant undervaluation, which make it much less vulnerable during times of economic uncertainty. Once the greenback passes its peak and the Fed has completed its hiking cycle, we believe the yen will be one of the quickest to recover. Our 12-month forecast sits at 118 per dollar.

Exhibit 8: USD/JPY versus 10y nominal yield



Note: As at September 9, 2022. Source: Bloomberg, RBC GAM

Exhibit 9: Google web-search data



Note: Google trend data. Numbers show interest relative to highest point on chart. A value of 100 indicates peak popularity. As at: June 30, 2022. Source: State Street, Google, RBC GAM

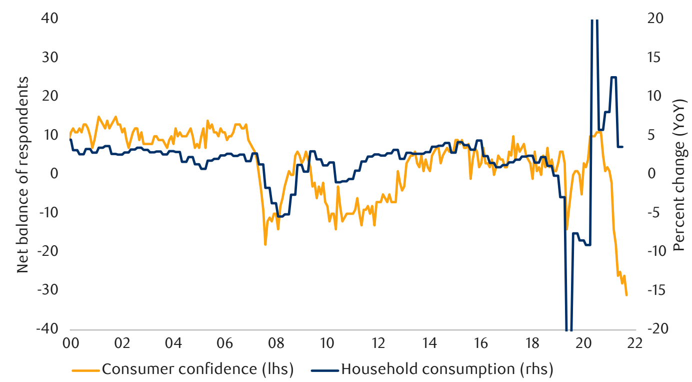
British pound

The pound has declined 14% from its 2021 peak. Sterling is cheap against the U.S. dollar but still expensive compared with the euro, whose Eurozone members are the U.K.'s main trading partners. A further decline in the pound would help restore competitiveness, but also stoke inflation because the U.K. economy is among the most sensitive to a rise in prices of imported goods. This puts the central bank in a major pickle because, while an inflation rate of 10% cries out for an aggressive reaction from policymakers, households and businesses are ill-equipped to deal with higher interest rates.

We don't believe the Bank of England (BOE) can keep up with rate hikes by the Fed, Bank of Canada and others without pushing the U.K. economy into a severe recession. An illustration of how severely household finances have deteriorated can be found in Bloomberg reports that a third of U.K. workers plan to take a second job to pay the bills, that the use of revolving credit is on the rise and that home-energy costs have more than quadrupled over the past two years and are expected to continue rising into next year. An associated plunge in consumer sentiment (Exhibit 10) foretells a major decline in household spending, the largest component of economic growth.

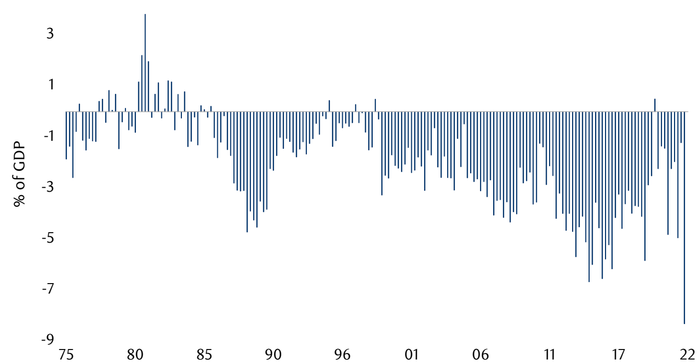
The U.K. current account has been in deficit for years, but the most recent reading in the first quarter of 2022 rang in at a staggering 8% of GDP (Exhibit 11), the largest deficit in 50 years. It looks like the impact of Brexit may finally be hitting home. The BOE's limited room for raising rates means that investors have little incentive to buy U.K. assets because they aren't adequately compensated for the risk of a decline in the pound. We expect the pound to underperform other major currencies in the year ahead. The fact that our forecast of US$1.28 is higher than the prevailing exchange rate is based entirely on our view of a broad U.S.-dollar decline.

Exhibit 10: U.K. consumers getting squeezed



Note: As at June 30, 2022. Source: U.K. ONS, GfK UK, RBC GAM

Exhibit 11: Record current-account deficits



Note: As at June 30, 2022 Source: U.K. ONS, RBC GAM

Canadian dollar

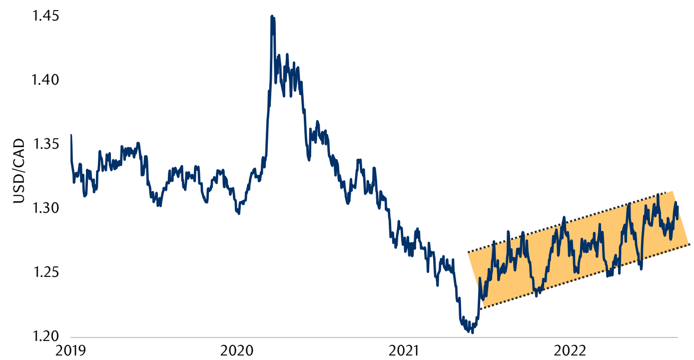
The Canadian dollar's 2022 trading range has been remarkably narrow (Exhibit 12), especially for a year in which asset-market volatility has picked up and the U.S. dollar has rallied strongly. The loonie has meaningfully outperformed against its other G10 peers all year (Exhibit 13), a resilience that can be attributed to a few key factors:

- a central bank that has kept up with U.S. interest-rate hikes and is expected to outstrip the Fed's pace this cycle
- elevated commodity prices that support strong terms of trade
- the outperformance of Canadian equities over stock markets in the U.S. and Europe
- healthy levels of immigration that will make for a more balanced labour market at a time when demand for talent has been strong; strong immigration also supports economic growth

Investors remain optimistic on the loonie, one of the few currencies on which the market is bullish amid U.S.-dollar strength (Exhibit 14). Positions betting on a rise in the Canadian dollar are relatively small, so there is ample space for investors to increase their Canadian-dollar holdings.

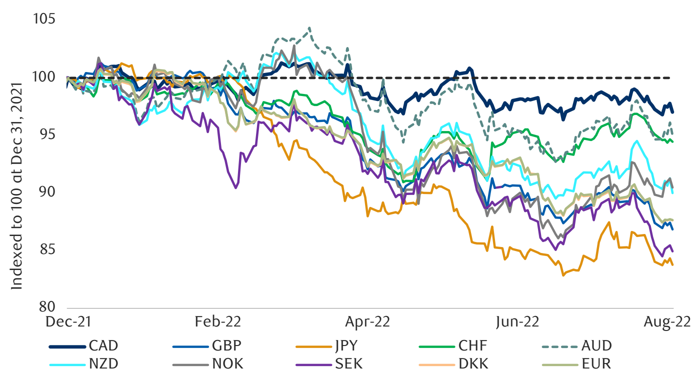
Another reason for the tenacity of the Canadian dollar is Canada's much improved balance of capital flows (Exhibit 15). A decade-long string of current-account deficits has turned into surpluses, helped in large part by high energy prices and from growing income receipts on the country's foreign direct investments. Canada has also experienced a significant improvement in portfolio inflows as Canadian companies issue debt in U.S. dollars. There is no guarantee that proceeds from these bond issues are being converted and repatriated, but we believe conversion is partly responsible for the Canadian currency's resilience and its inability this year to remain weaker than $1.30 per U.S. dollar.

Exhibit 12: Tight range in the Canadian dollar



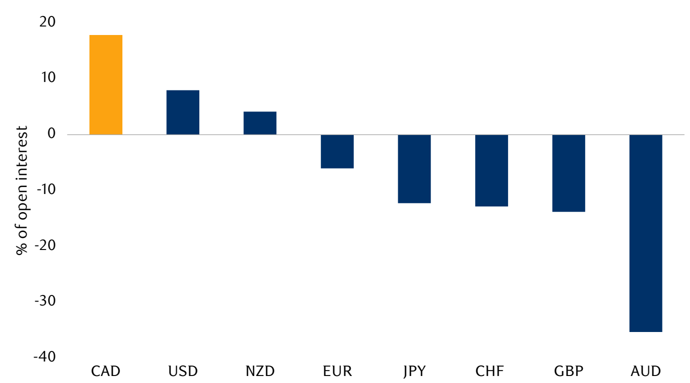
Note: As at August 26, 2022. Source: Bloomberg, RBC GAM

Exhibit 13: G10 performance so far this year



Note: As at August 26, 2022. Source: Bloomberg, RBC GAM

Exhibit 14: FX futures positions



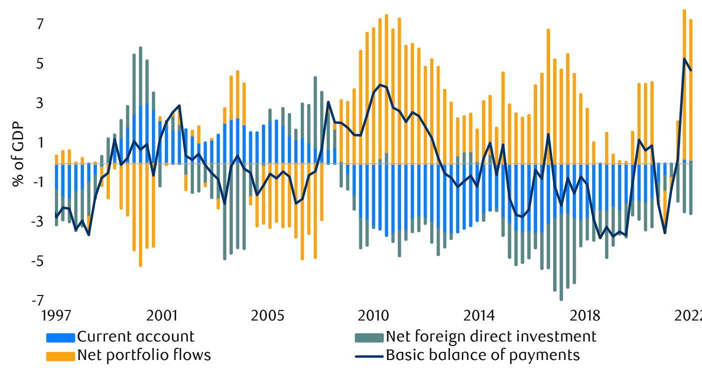
Note: As at August 26, 2022. Source: CFTC, RBC GAM

Based on valuation models, the Canadian dollar registers as undervalued but not to an extent that would suggest an immediate strengthening (Exhibit 16). So, in the absence of a strong signal from longer-term models, we zoom in on shorter-term regression models for guidance on where the currency should be trading based on its most important drivers: oil, equity markets and the difference between U.S. and Canadian interest rates. These models also suggest that the loonie should strengthen (Exhibit 17).

We should note some risks for the loonie. It is probable that a recession in the U.S. would drag the currency down as oil prices and equities would both be likely to decline. Our models are quick to adjust to such economic developments and, when shocked for these scenarios, suggest the loonie could weaken to $1.35 per U.S. dollar. Falling Canadian real estate prices and high household debts also present risks to our outlook, especially since the Bank of Canada (BOC) seems bent on raising rates faster than many other central banks.

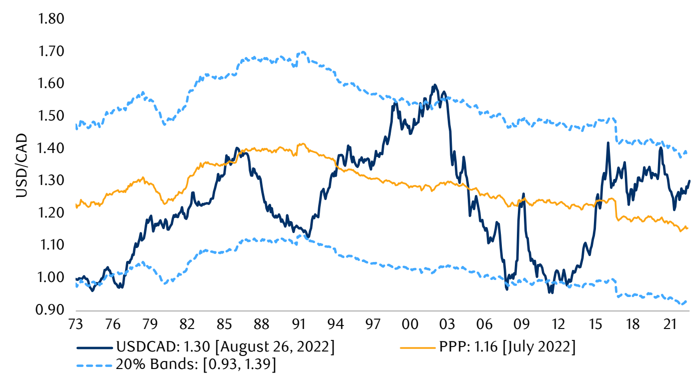
Our base case forecast is that the Canadian economy won't be sunk by a disaster in housing or a severe U.S. recession. We believe oil prices will remain elevated given both strong demand and constrained supply, which will keep the country posting current-account surpluses while the BOC continues to act more aggressively than most of its peers. Finally, an eventual turn weaker in the U.S. dollar would help the loonie strengthen alongside other major currencies. Our forecast is for the Canadian dollar to trade at $1.19 per U.S. dollar sometime over the next 12 months.

Exhibit 15: Canada's basic balance of payments



Note: As at June 30, 2022. Source: Statictics Canada, RBC GAM

Exhibit 16: U.S. dollar valuation againt Canadian dollar – Purchasing Power Parity valuation



Note: As at August 26, 2022. Source: Bloomberg, RBC GAM

Exhibit 17: Currency drivers suggest small loonie gains

Note: Model uses S&P 500, crude oil and the spread between 2-year Government of Canada bonds and Treasuries as inputs. As at August 25, 2022. Source: Bloomberg, RBC GAM

Regional outlook – United States

Brad Willock, CFA
V.P. & Senior Portfolio Manager
RBC Global Asset Management Inc.

U.S. stocks extended declines during the summer, with the S&P 500 Index falling 3.9% in the three-month period ended August 31, 2022, and bringing the eight-month drop to 16.1%. The S&P 500, which traded at an all-time high on the first trading day of 2022, has seesawed this year following confirmation that the U.S. Federal Reserve (Fed) would commit to the significant interest-rate hikes that it believes are required to stamp out the fastest inflation in 40 years. While the pace of price increases probably peaked this summer, the war against inflation will likely last longer than many investors expect. In the words of the Fed Chair Powell: “Restoring price stability will likely require maintaining a restrictive policy stance for some time.” Powell warned investors in late August that we should expect higher interest rates, slower economic growth and a softer labour market as they are “the unfortunate costs of reducing inflation and will bring some pain to households and businesses.” The Fed has spoken – bringing inflation to heel is Job One, even if it means causing a recession.

Given the complexity of the current investment backdrop, it seems like a good time to evaluate where we stand. First, we interpret the Powell’s words to mean that the Fed is going to raise the fed funds rate as high as 4% from the current 2.25%, and hold it there until inflation retreats to the Fed’s 2% target from July’s 8.5% reading. This inflation-lowering process will require a sustained period of below-trend growth in order to bring demand back into balance.

To gauge where we are in the process, it is useful to start with a business-cycle framework that begins with the housing market. In the U.S., all business cycles begin and end with the housing market. The home is central to the economy because it is a highly leveraged asset that acts as the primary vehicle to accumulate and store wealth for roughly 140 million households. Historically low mortgage rates in 2020 and 2021 helped home sales soar, driving prices up 45% since the onset of the pandemic. The market has chilled as mortgage rates nearly doubled to almost 6%. In July, sales of new and existing homes slowed to their lowest level in six years, a decline in demand that is precisely the impact the Fed intended when it began raising the cost of money in the system. The Fed’s hope is that a reduction in demand for housing will help reduce the prices of a range of products, such as lumber, furniture, paint and appliances; and services like construction, mortgage brokerage and moving. The impact of a slowdown in the housing market is transmitted to the broader economy over a period of two or three quarters and picked up in business-activity surveys such as the ISM Service and Manufacturing

United States – Recommended sector weights

Sector	S&P 500	Recommended weight
Energy	4.6%	1.0%
Materials	2.5%	-0.5%
Industrials	8.0%	-0.3%
Consumer discretionary	11.5%	0.0%
Consumer staples	6.8%	0.4%
Health care	14.3%	1.3%
Financials	10.9%	-0.7%
Information technology	27.0%	0.5%
Communication services	8.3%	-0.7%
Utilities	3.2%	-0.2%
Real estate	2.9%	-0.7%

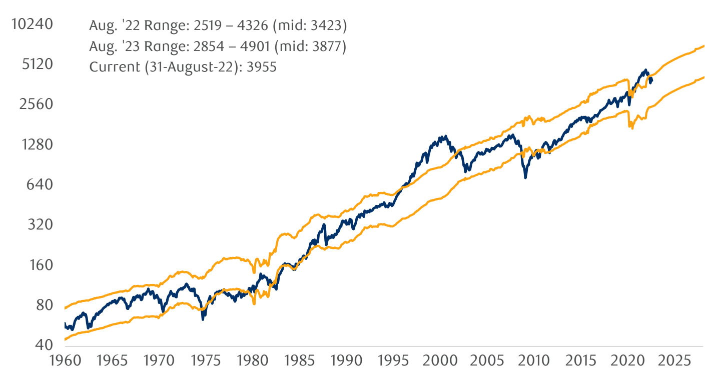
-1.5% -1.0% -0.5% 0.0% 0.5% 1.0% 1.5%

Underweight | Overweight

Note: As of August 31, 2022. Source: RBC GAM

> "We continue to expect the market to experience significant volatility while the Fed continues its war against inflation."

S&P 500 equilibrium
Normalized earnings and valuations



Source: RBC GAM

surveys. Companies then begin reporting weakness in their earnings, and if profit margins decline for several quarters, people start to lose their jobs. The final stage of the business cycle occurs when unemployment has increased and demand has decreased to the point where prices are falling and the pace of inflation is cooling.

With respect to the current cycle, housing is in clear retreat, as indicated by the NAHB Index, and business activity is slowing, as indicated by the ISM Manufacturing New Orders subindex. Both indicators suggest corporate earnings are likely to come under pressure as the slowdown in housing, and the lagged effects of high inflation, energy prices and interest rates work their way through the system. The question is: how much lower will profits go? Our S&P 500 earnings estimate for 2022 peaked at US$228 in April and has since fallen 2.2% to US$223. Our estimate for 2023 peaked at US$250 in May and has dropped 3.4% to US$242.

So far, the earnings revisions are not unusual. However, the current round of Fed rate hikes started only in March, so any potential weakness in earnings should be expected to show up in third-quarter reports at the earliest. While we expect earnings estimates to decline in the remaining two quarters of 2022, we do not expect earnings to fall off a cliff unless inflation recedes more rapidly than anticipated. In our opinion, the earnings estimate for 2023 is more of an open question and depends largely on the path of inflation. If inflation decelerates quickly and appears to be on a path to less than 3% next year, the Fed would likely be less aggressive, with less downside to valuations, and the economy would likely avoid recession, with less downside to earnings. However, if inflation remains persistent, the Fed would likely be more aggressive, raising the risk of a recession with falling earnings, and resulting in substantially lower equity valuations.

For the past several months we have maintained significant exposure to more defensive sectors such as Utilities, Consumer Staples and Health Care, while adding to Information Technology-sector companies that are generating high free cash flows. We maintain our favourable view to the Energy sector given our view that chronic underinvestment over the past several years will keep the oil market tight and support prices while the companies return significant free cash flow to shareholders via buybacks and dividends. We continue to expect the market to experience significant volatility while the Fed continues its war against inflation. Our strategy will be to add to our favourite high-quality companies amid market declines.

Regional outlook – Canada

Sarah Neilson, CFA
Portfolio Manager
RBC Global Asset Management Inc.

Irene Fernando, CFA
Portfolio Manager
RBC Global Asset Management Inc.

The three months ended August 31, 2022, were challenging for equity markets as the persistence of elevated inflation, rising interest rates and a decelerating economy gave investors pause. The S&P/TSX Composite Index finished the period down 6.0% (or a decline of 9.5% in U.S.-dollar terms) after rebounding from a fall of as much as 11% between June 1 and mid-July. The Canadian benchmark trailed other equity benchmarks during the three months, with the S&P 500 Index losing 3.9% and the MSCI World Index down 5.5% in U.S. dollars. However, S&P/TSX remains the best-performing major index so far this year, thanks to the surge in prices for energy and other commodities.

The Canadian equity benchmark is heavily influenced by the performance of companies in the Energy and Materials sectors. Commodity prices dropped in June on concerns about a global economic slowdown and related potential for a fall in demand for natural resources including oil and copper, weighing on the market's returns. Gold prices and gold-related equities also underperformed as a result of the strong U.S. dollar, expectations that interest rates would continue to increase and gold producers' rising production costs. Financials, the largest sector in the S&P/TSX, declined as bank stocks began to reflect the potential for a mild recession and higher credit losses. The Industrials, Consumer Discretionary and Consumer Staples sector were strong performers over the past three months amid expectations that any recession that transpires over the next year will be a mild one.

Equity markets continue to wrestle with the impact and stubbornness of elevated inflation and the likely path of economic growth. Expectations for growth have been tempered due to the impact of rising interest rates on consumption and other economic activity, as well as the lingering effects of supply-chain disruptions in Europe and China. Consensus forecasts are that Canadian GDP growth will rise to 3.5% in 2022, down from over 4.0% last quarter, and decline further to 1.6% in 2023. Economists expect Canada's economy to outpace the U.S. due to the positive impact of higher commodity prices on the Canadian economy. The Bank of Canada (BOC) says the Canadian economy is overheating and forecasts that GDP growth will exceed analysts' expectations, supported by strong demand for goods and services and a tight labour market. This year's persistent inflation has prompted the BOC to accelerate interest-rate increases and signal a continued need to do so in order to cool consumer demand. In July, the BOC boosted the benchmark interest rate by the most in almost a quarter-century, by 1 percentage point, to 2.5%. Easing commodity prices are providing some relief to the inflation outlook. The BOC, which remains focused on bringing inflation back down to its 2% target from July's 7.6% rate, raised the benchmark rate by another 0.75 percentage point in September.

Canada – Recommended sector weights

	S&P/TSX Composite	Recommended weight
Energy	18.4%	0.2%
Materials	11.2%	-0.5%
Industrials	12.8%	0.7%
Consumer discretionary	3.5%	0.0%
Consumer staples	4.3%	0.7%
Health care	0.4%	0.5%
Financials	31.3%	-0.4%
Information technology	5.2%	0.3%
Communication services	5.0%	-0.5%
Utilities	5.3%	-0.8%
Real estate	2.7%	-0.2%

-1.0% -0.5% 0.0% 0.5% 1.0%

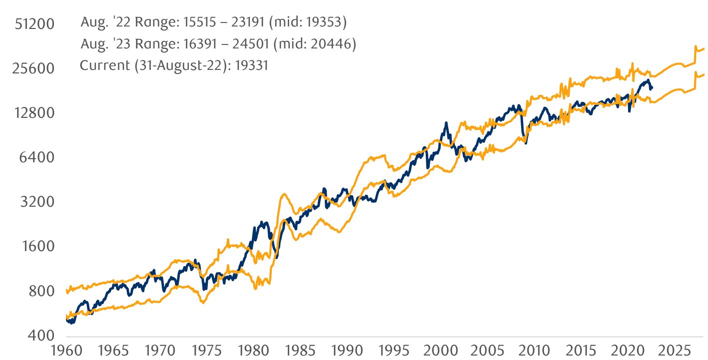
Underweight Overweight

Note: As of August 31, 2022. Source: RBC GAM

> "While the macroeconomic backdrop worsened in the first half of the year, investors' expectations for corporate profits remain resilient."

S&P/TSX Composite Equilibrium

Normalized earnings and valuations



Source: RBC GAM

Canada's once hot housing market shows clear signs of cooling and is expected to continue to moderate as higher mortgage rates challenge affordability. The pace of home resales and price increases have reversed since the BOC began hiking policy rates in March and benchmark mortgage rates reached levels not seen since 2011. With consumer-lending rates expected to continue rising, the bottom of the housing market is anyone's guess. Longer term, Canada's aggressive plans to increase immigration should support demand for housing more than in many peer countries.

While the macroeconomic backdrop worsened in the first half of the year, investors' expectations for corporate profits remain resilient. S&P/TSX earnings are forecast to rise 20% in 2022 thanks to higher energy and metals prices, and strong consumer activity. However, the impact of elevated natural-resource prices, rising wages and the likelihood of slowing demand are just now beginning to be reflected in forecasts, with the S&P/TSX earnings estimates having peaked in July. Looking to 2023, earnings growth is expected to be 4%. The Financials, Industrials and Consumer Discretionary sectors are expected to grow next year.

With a less certain earnings outlook, valuations for equity markets have been shaved. The S&P/TSX currently trades at a forward P/E multiple of 12, which is well below its historical average and remains at a significant multiple discount to the S&P 500, which has a forward P/E of 17. Looking at sector valuations, 77% of the Canadian market trades either in line with or below historical averages, while only the Utilities, Industrials, Communication Services and Health care sectors are trading at historical premiums. This is again exhibiting the flight to defensive sectors amid the current market backdrop. The slower pace of expected earnings growth and potential for earnings estimates to decline may limit equity returns.

The basket of Canada's Big 6 bank stocks fell 10.2% in the three-month period, underperforming the broader market by 5 percentage points. The group currently trades at 9.6 times forward earnings, or at a 15% discount to the longer-term average multiple, reflecting uncertainly about earnings as investors position for a worsening economic outlook.

Even so, analysts raised their estimates slightly toward the end of the period on optimism that higher interest rates would bolster profit margins on lending. Analysts are currently expecting bank earnings to increase 4% to 5% in 2022 and 2023, respectively. We believe that the current earnings outlook and valuations reflect the approach of a mild recession later this year or in early 2023.

Energy equities followed crude-oil prices lower as concerns about weakening global demand and resilient supply were reflected in prices. Gasoline and diesel prices had surged earlier this year as low inventory levels met with strong global demand, adding to inflationary pressures globally. However, consumers pulled back as gasoline prices soared. China continues to import less oil as the country experiences a COVID-19- related economic slowdown. Meanwhile, the supply of crude oil is increasing globally, with U.S. domestic production up and OPEC producers intending to bring on additional capacity. That said, the continued resistance of companies to reinvest in meaningful production growth will support prices. Natural gas is in demand globally as Russia has cut back supplies to Europe, which could lead to a more challenging energy price and economic situation this winter. Energy producers are generating significant free cash flows that they are using to reduce debt and boost dividends and share buybacks. Energy-company valuations remain somewhat attractive for the Energy sector in part due to questions about the sustainability of today's higher prices and the longer-term outlook for demand given requirements to address emissions reductions.

Gold prices dropped as low as US$1,700 per ounce after briefly hitting US$2,050 in March, when gold attracted investors looking for a safe haven after Russia invaded Ukraine. Gold prices have since fallen due to a persistently high U.S. dollar, continued expectations for more rate hikes by the U.S. Federal Reserve and the potential for dampened economic growth. Gold shares have been hit by both the weakness in gold prices and the impact of rising energy and fixed costs.

Regional outlook – Europe

David Lambert
Portfolio Manager,
RBC Global Asset Management (UK) Limited

European equity markets have experienced significant gyrations over the past 12 months, so it seems an opportune time to take stock of where we are in the market cycle, what impact these sharp moves have had on equity valuations and what underlying impact there has been on the businesses we invest in.

The scale of the move down in valuations since January stands out as one of the more pronounced of the past 35 years. Higher valuation multiples over the previous two years have fallen back to average levels but are still not 'cheap' in a historical context.

This drop in values to average levels should be a good thing, and in some regards it is. But it masks the fact that we have seen very robust cash generation from companies throughout this market downturn. In fact, investors expect cash flows to rise to all-time highs over the near term.

Given that an equity's value is the present value of its future cash flows, these cash flows are discounted at a rate that takes into account the time value of money. What we have seen in the market sell-off so far in 2022 is the sensitivity of future cash flows to changes in interest rates. The rise in interest rates, and therefore discount rates, has been the principal driver of the fall in the equity market driven by a reduction in valuations, with growth and high-quality stocks having been affected most. We suspect that the debate will now shift to the degree to which cash flows are sustainable in an economic downturn.

The likelihood of recession across Europe is increasing, but so far we have seen very little impact on corporate cash flows. We do, however, expect this to change as earnings downgrades begin to come through, leading to more pressure on equity markets.

There will almost certainly be more pressure in some areas relative to others. It is clear that 'value' businesses, based on price-to-book-value measures, have cash-flow and earnings profiles that fluctuate with the economic cycle, whereas 'quality' stocks exhibit a pattern suggesting long-term cash-flow improvements underpinned by macroeconomic tailwinds.

We think the next stage of the business cycle could result in a move back into quality stocks at the expense of more cyclical companies given that quality stocks should, in our view, be more resistant to downgrades and better for capital preservation. The risk of another leg down for markets sits in potential downgrades on cash-flow returns, and we suspect we are most likely to see those in the more economically cyclical and lower quality areas of the market.

This outlook chimes with what we are now seeing, as leading indicators are set to enter a period of steady decline.

Europe – Recommended sector weights

Sector	MSCI Europe	Recommended weight
Energy	6.7%	0.6%
Materials	7.1%	-0.7%
Industrials	14.1%	-0.3%
Consumer discretionary	10.3%	0.5%
Consumer staples	14.1%	0.7%
Health care	15.6%	-0.4%
Financials	15.8%	0.7%
Information technology	7.1%	0.3%
Communication services	3.8%	-0.2%
Utilities	4.4%	-0.6%
Real estate	1.0%	-0.7%

-1.0% -0.5% 0.0% 0.5% 1.0%

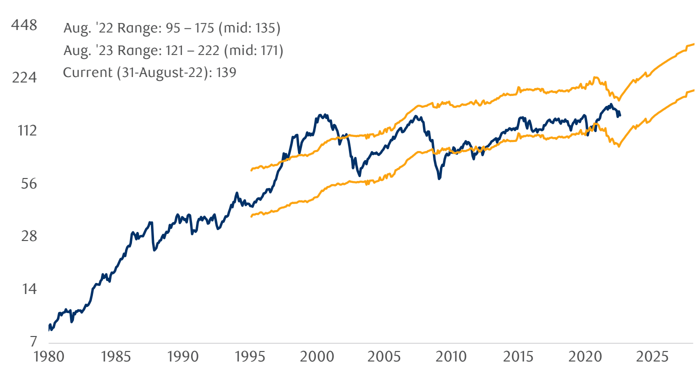
Underweight Overweight

Note: As of August 31, 2022. Source: RBC GAM

"For the market as a whole, we expect there will be more downgrades to come in the value area of the market and that this trend could put pressure on equity markets as cash-flow projections are gradually cut."

MSCI Europe Index Equilibrium

Normalized earnings and valuations



Source: RBC GAM

The momentum for these indicators has slowed for four consecutive months, a scenario that typically favours high-quality, low-risk, large-cap growth stocks.

Declines in quality stocks over the past 12 months has made them more attractive on a valuation basis, with their P/E premium relative to the rest of the equity market having fallen to 1.1 from 1.6.

In conclusion, our style work and cash-flow analysis make a case for beginning a move away from a more balanced portfolio to one with a slightly higher quality bias. For the market as a whole, we expect there will be more downgrades to come in the value area of the market and that this trend could put pressure on equity markets as cash-flow projections are gradually cut. It could well be a better environment for stock picking.

At the sector level, this would favour certain consumer companies, especially those with high brand equity. Pockets of the Industrials, Health Care and Information Technology sectors will also fit into this category. The more cyclical Consumer Discretionary, Financials, Energy and Materials sectors would be most at risk of downgrades if the economic backdrop continues to weaken.

We still favor capital-light, high-return businesses that have the ability to expand their asset bases quickly, and thereby compound returns for shareholders at a much higher rate than the wider market over a long period. An example of a company that falls into this category would be a data provider that earns high returns on each new customer and then plows its free cash flow back into acquiring other databases.

In the consumer sectors, we still see excellent brand value and large barriers to entry in luxury goods. Europe is the global leader in luxury, and this area has recorded some of the highest and most stable returns on equity in decades. It is difficult to make inroads against entrenched luxury brands, and these companies have been at the forefront in exploiting e-commerce. This backdrop leads us to believe that luxury-goods companies will offer investors the opportunity for significant shareholder value over the medium to long term.

We tend to shy away from capital-heavy industries, and those subject to heavy regulation such as banks, telecommunications and utilities. We acknowledge, however, that there are pockets in which companies are exhibiting very low valuations and are throwing off a lot of cash. The Energy sector is one of these, and we have much more exposure here than we did 12 months ago.

Regional outlook – Asia

Chris Lai
Portfolio Manager, Asian Equities
RBC Global Asset Management(Asia) Limited

Asian equities fell during the three months ended August 31, 2022, amid a global economic slowdown. Chinese stocks continued to be weak, gripped by concerns about a downturn in the property market and the country's strict approach to combatting COVID-19. Taiwan and South Korea, whose markets have significant exposure to technology, underperformed given worries that global growth would decelerate. Equity markets in India performed relatively well amid foreign demand for domestic stocks and a recovering economy. Japan also outperformed as the pro-business ruling party won seats in July elections soon after former Prime Minister Shinzo Abe's assassination.

Asia's economic growth is likely to slow in the months ahead due to tighter financial conditions. In China, we expect a downturn in exports to be somewhat offset by economic reopenings and loose monetary policy. Higher commodity prices should benefit Malaysia and Indonesia, but Thailand, India and the Philippines might lose out because they must import most of their oil and other natural resources. Japan is the only Asian country so far to escape the severe impact of much higher inflation, but soaring food and energy prices are a big risk in the continent's emerging markets. We expect higher inflation to trigger a quickening in monetary tightening across Asia, with governments offering increased financial assistance to households.

Japan

In Japan, we expect a mild recession, with a 0.3% drop in GDP forecast for the fourth quarter of 2022 and a 0.6% decline for the first quarter of 2023, as the U.S. Federal Reserve's commitment to fighting inflation is likely to depress the global economy. Japanese employment has been holding up well, with the jobless rate forecast to be 2.4% in this year's third quarter, down slightly from 2.5% in the second quarter.

Business sentiment among Japan's large manufacturers has been cooling amid headwinds including the war in Ukraine, the extended lockdowns in China, global supply shortages and inflation, according to the Bank of Japan's (BOJ) latest Tankan survey. The outlook is especially negative for steelmakers and certain other manufacturers, whose profit margins have been squeezed by higher commodity prices and the weaker yen.

The BOJ has stuck to an ultra-loose monetary policy, even as its global peers are tightening to stem inflation. The policy divergence has sparked a capital outflow to countries with higher-yielding assets, and recently sent the yen to a 24-year low. The BOJ says Japan's post-COVID recovery remains fragile and requires the support of loose monetary policy. But low interest rates and the sliding yen have fueled inflation and are hurting small businesses and consumers, putting the central bank in a bind.

Asia – Recommended sector weights

	MSCI Pacific	Recommended weight
Energy	3.3%	0.3%
Materials	7.0%	-0.3%
Industrials	11.5%	0.6%
Consumer discretionary	15.1%	0.0%
Consumer staples	5.7%	0.0%
Health care	6.7%	0.5%
Financials	18.8%	-0.3%
Information technology	16.8%	0.3%
Communication services	8.7%	-0.5%
Utilities	2.5%	-0.1%
Real estate	4.1%	-0.4%

-1.0% -0.5% 0.0% 0.5% 1.0%

Underweight Overweight

Note: As of August 31, 2022. Source: RBC GAM

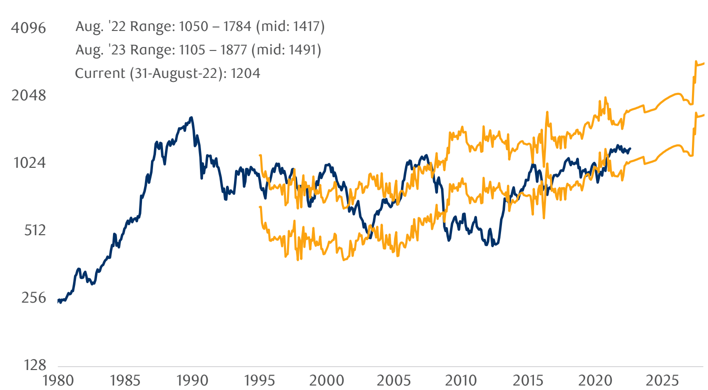
Rest of Asia

The Chinese economy has continued to weaken, due in part to Beijing's reluctance to transition away from its strict COVID-19 strategy. Other major headwinds include falling property prices and the export slowdown. As a result, GDP in 2022 is forecast at 2.9%, with a rebound to 5.0% in 2023 - well below long-term growth rates of 6% to 7%. To support the economy, we expect Beijing to encourage banks to fund infrastructure investments and announce stimulus measures over coming months.

In India, the economy is racing above its pre-pandemic level, led by a sharp recovery in services, and supported by the lagged effects of easy financial conditions, spending on public works and credit growth. The improvement has been

MSCI Japan Index Equilibrium

Normalized earnings and valuations



Source: RBC GAM

broad-based across consumption, investment, industry and trade. However, exports have started to struggle, while elevated imports are pushing monthly trade deficits to record highs. Higher inflation, monetary-policy tightening, ebbing private investment and power shortages pose medium-term headwinds. Inflation in India is forecast at 7% for 2022. Given this high inflation, the Reserve Bank of India hiked its policy rate by 50 basis points to 4.90% in June. We expect the central bank to increase the rate to as high as 6.0% by February.

Taiwan's economy has lost momentum given moderating exports amid fading seasonal demand for technology products. With a cloudy outlook for the global economy in the second half of 2022, companies are reducing capital investments. Indeed, machinery exports recently marked their first drop since August 2020. Moreover, forward-looking data such as new technology orders dropped, suggesting the manufacturing-driven economic expansion is poised to end. As a result, economists have lowered their 2022 and 2023 GDP growth forecasts to 2.9% and 1.6%, respectively, from 4.2% and 3.8%.

In Australia, we expect aggressive monetary tightening in 2022 to lead to recession in 2023, and eventual rate cuts as inflation declines. Rate hikes could expose Australia's Achilles heel, which is a combination of consumer debt and inflated housing prices. Mortgage rates have already risen notably, and we expect further increases over the balance of this year. We also expect consumers to reduce debt and housing prices to decline, prompting banks to increase set-asides for bad loans and setting up the possibility of residential foreclosures.

In the Philippines, inflation is rising sharply and forcing the central bank to turn more hawkish. GDP is expected to decline in 2023, reflecting expectations that the U.S. and other key trading partners will experience at least a mild recession at a time when the Philippine labour-market recovery is not yet complete coming out of the pandemic. The recent unemployment rate stood at 6%, above the pre-pandemic level of 4.5%. We now expect a faster widening of the current-account deficit, given that the Philippines imports most of its energy and that a newly elected government appears committed to funding large infrastructure projects.

Regional outlook – Emerging markets

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All major equity benchmarks recorded losses through August, with emerging-markets equities slightly underperforming developed markets. The backdrop was one of many challenges including Russia's invasion of Ukraine, COVID-19-related lockdowns in China, U.S.-dollar strength and monetary tightening by the U.S. Federal Reserve.

China's equity-market performance has been particularly volatile this year. Between January and May, China was by far the weakest major emerging market (aside from Russia), descending to record-low valuations as it was negatively affected by its extreme efforts to stamp out COVID-19, speculation that it might invade Taiwan and monetary, fiscal and regulatory tightening. Beginning in May, the Chinese equity market staged a strong recovery as the government introduced stimulus measures, eased financial conditions and started to gradually reduce COVID-19 restrictions. Toward the end of the three-month period, Chinese stocks resumed their decline on weaker housing sales due to concerns about developers' ability to deliver pre-sold housing projects.

Looking at different segments of the MSCI Emerging Markets Index reveals that the most expensive decile of stocks built up a significant valuation premium in 2019-2020. Stocks of companies in the most expensive decile plunged in 2022 but their valuations still look elevated given that profitability also declined. This relationship suggests that caution on the most expensive companies is still warranted and a focus on slightly cheaper areas of the market with similar levels of profitability makes sense.

Emerging markets have been underperforming developed markets for more than a decade, and with this in mind it is natural to contemplate what the next decade might look like. Over the past 35 years, the performance of emerging markets has tended to follow very long 'super-cycles,' of which there have been four varying in length of six to 11 years. The key determinant of these cycles has been emerging-markets earnings growth measured in U.S. dollars. During the two bull cycles, emerging markets had a compounded annual growth rate of more than 13%, but this measure was negative during the two bear cycles.

The question on our minds is whether emerging markets can find their way to a new long-term positive cycle driven by a sustained period of superior U.S.-dollar earnings growth. Some of the themes to drive a new emerging-market earnings cycle could be U.S.-dollar weakness and/or improving relative growth and profitability versus developed markets. Another factor that is likely to be important is productivity growth. Emerging markets' productivity growth has been faster than developed markets for some time, and developed countries' productivity growth recently slowed significantly. There is room for emerging economies to improve productivity further through labour reforms, both in terms of what we call labour formalization as well as labour-market flexibility. Regarding the first, we note that informal labour accounts for a large share of the workforce in many emerging countries: bringing workers into the formal economy increases the tax base for government social spending in areas such as health care and education. Labour formalisation can help improve working conditions, reduce corruption and improve access to credit. Improvements in labour-market flexibility are important for tackling unemployment, accommodating larger working-age populations and improving productivity.

An important area to watch for emerging markets' near-term performance is real interest rates. Many emerging countries have positive real rates after their central banks were ahead of the curve in tightening monetary policy last year to fight inflation, putting a number of the largest emerging-market economies in a stronger position to rebound than developed- markets. Brazil, Mexico and China, for example, are showing positive real rates, with the first two exhibiting the highest.

We also note that the underperformance of emerging markets makes their valuations appear increasingly cheap. Looking at price-to-book ratios, emerging-market equities trade at a 43% discount to developed markets. This level of discount is one of the highest it has been historically and should be supportive if we see an improvement in emerging-markets earnings growth. Additionally, emerging-market currencies are attractive if we look at real effective exchange rates, which adjust currency rates for purchasing power.

Regarding specific emerging-market countries, there are reasons to believe that the worst may be behind for China, and that the easing of financial conditions could partially offset the risk of a global recession. We expect China to eventually abandon its "zero-COVID" policy. Equities in Taiwan and South Korea have sold off since the beginning of the year, primarily because companies in the Information Technology sector have been weak. Taiwan's stock market had become the most expensive since 2000, but they remain above the long-term median even after this year's declines. South Korea has been a disappointment as the election of a new pro-business president has been insufficient to offset the market's exposure to technology. South Korean equities are now close to the cheapest they've ever been. A number of Latin American countries also appear cheap, with Chile at especially attractive levels after a left-wing leader was elected.

Two sectors that appear relatively expensive compared to history are Consumer Discretionary and Utilities, while Financials look cheap. We continue to like the Financials sector because of its attractive valuations, stable assets and the potential for new customers as relatively few people use banks in some regions.

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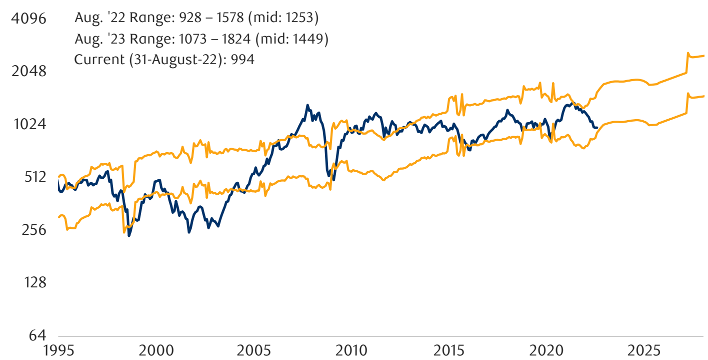

Source: RBC GAM

RBC GAM Investment Strategy Committee Members

Daniel E. Chornous, CFA

Chief Investment Officer
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Chair, RBC GAM Investment Strategy Committee

Dan Chornous is Chief Investment Officer of RBC Global Asset Management Inc., which has total assets under management of approximately $532.6 billion*. Mr. Chornous is responsible for the overall direction of investment policy and fund management. In addition, he chairs the RBC Investment Strategy Committee, the group responsible for global asset-mix recommendations and global-fixed income and equity portfolio construction for use in RBC Wealth Management's key client groups including retail mutual funds, International Wealth Management, RBC Dominion Securities Inc. and RBC Phillips, Hager & North Investment Counsel Inc. He also serves on the Board of Directors of the Canadian Coalition for Good Governance and is Chair of its Public Policy Committee. Prior to joining RBC Asset Management in November 2002, Mr. Chornous was Managing Director, Capital Markets Research and Chief Investment Strategist at RBC Capital Markets. In that role, he was responsible for developing the firm's outlook for global and domestic economies and capital markets as well as managing the firm's global economics, technical and quantitative research teams.

*AUM in CAD as of August 31, 2022

Soo Boo Cheah, MBA, CFA

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Based in the U.K., Soo Boo is responsible for managing global fixed-income allocations. He specializes in assessing the impact of central bank policies and global macroeconomic trends on developed-market bonds. In his role as a senior portfolio manager, he integrates a wide range of investment strategies involving interest rates, currencies, and derivatives. Soo Boo started his career in the investment industry in 2000 and holds an MBA from University of New Brunswick. Soo Boo has been a CFA charterholder since 2002.

Dagmara Fijalkowski, MBA, CFA

Head, Global Fixed Income & Currencies
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As Head of Global Fixed Income and Currencies, Dagmara leads a team of 40+ investment professionals in Toronto, London and Minneapolis with almost $100 billion in assets under management. In her duties as a portfolio manager, Dagmara leads management of several bond funds, including the RBC Bond Fund, and manages foreign-exchange hedging and active overlay programs. She leads the Fixed Income Strategy Committee which determines appropriate level of risk taking given market opportunities. Dagmara is a member of the RBC Investment Policy Committee, which determines the asset mix for balanced products; and the RBC Investment Strategy Committee. In 2016, she was appointed to the RBC GAM Executive Committee. Dagmara, who began her investment career in 1994, holds an MBA from the Richard Ivey School of Business at the Western University in Canada and a Master's degree in economics from the University of Lodz in Poland. Dagmara has been a CFA charterholder since 1997.

Stuart Kedwell, CFA
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Stu co-leads the North American Equity team and is a member of the RBC GAM Investment Strategy Committee, which is responsible for establishing the firm-wide global asset mix for mutual funds and for institutional and high net worth private clients. Stu began his career in 1996 with RBC Dominion Securities in the firm's Generalist program, a two-year internship in which participants rotate through different areas of the firm. In 1998, he joined the RBC Investments Portfolio Advisory Group, which provides investment ideas and recommendations to RBC DS Investment Advisors. He was also a member of the RBC DS strategy & focus list committees. Stu has been with the firm since 2002 and is a CFA charterholder.

Eric Lascelles
Chief Economist
RBC Global Asset Management Inc.

Eric is the Chief Economist for RBC Global Asset Management Inc. (RBC GAM) and is responsible for maintaining the firm's global economic forecast and generating macroeconomic research. He is also a member of the RBC GAM Investment Strategy Committee, the group responsible for the firm's global asset-mix recommendations. Eric is a frequent media commentator and makes regular presentations both within and outside RBC GAM. Prior to joining RBC GAM in early 2011, Eric spent six years at a large Canadian securities firm, the last four as the Chief Economics and Rates Strategist. His previous experience includes positions as economist at a large Canadian bank and research economist for a federal government agency.

Scott Lysakowski, CFA
Vice President and Senior Portfolio Manager
Head of Canadian Equities (Vancouver)
RBC Global Asset Management Inc.

Scott is Head of the Vancouver-based Canadian Equity Team. He is primarily responsible for overseeing equity research and portfolio management of the firm's core Canadian equity strategies. Scott also serves as lead manager for the Canadian income strategies. Scott began his investment management career with the firm in 2002 as a senior research analyst and portfolio manager within the Toronto-based Canadian Equity Team. He transitioned to the Vancouver team seven years later and assumed his current leadership role in 2012. During his 15-year tenure with the organization, he has conducted research for and managed a broad spectrum of Canadian equity portfolios, specializing in dividend and income mandates.

Hanif Mamdani
Head of Alternative Investments
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Hanif Mamdani is Head of both Corporate Bond Investments and Alternative Investments. He is responsible for the portfolio strategy and trading execution of all investment-grade and high-yield corporate bonds. Hanif is Lead Manager of the PH&N High Yield Bond and Alternative strategies, including a multi-strategy hedge fund. He is also a member of the Asset Mix Committee. Prior to joining the firm in 1998, he spent 10 years in New York with two global investment banks working in a variety of roles in Corporate Finance, Capital Markets and Proprietary Trading. Hanif holds a master's degree from Harvard University and a bachelor's degree from the California Institute of Technology.

Bryan Mascoe, CFA
Senior Portfolio Manager
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Bryan is co-Head and a senior portfolio manager on the PH&N Fixed Income Team. He co-manages the investment-grade credit research effort. As part of this role, he manages our dedicated corporate bond portfolios and is responsible for performing credit analysis on investment-grade issuers. He also assists with the strategy and trade execution of corporate bonds held in broader short, universe, and long fixed-income mandates. Bryan has a Bachelor of Commerce degree from the University of British Columbia and is a Leslie Wong Fellow as a graduate of the UBC Portfolio Management Foundation. He has been a CFA charterholder since 2005.

Sarah Riopelle, CFA
Vice President and Senior Portfolio Manager
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Since 2009, Sarah has managed the entire suite of RBC Portfolio Solutions. Sarah is a member of the RBC GAM Investment Strategy Committee, which sets global strategy for the firm, and the RBC GAM Investment Policy Committee, which is responsible for the investment strategy and tactical asset allocation for RBC Funds' balanced products and portfolio solutions. In addition to her fund management role, she works closely with the firm's Chief Investment Officer, ensuring that all aspects of the investment management function at RBC GAM are running smoothly. She is a member of the RBC Wealth Management Diversity Leadership Committee. Sarah joined RBC Global Asset Management in 2003 as a Senior Analyst within Investment Strategy. From there, she moved to the Canadian Equity team as an analyst and then a portfolio manager. She began her career in the investment industry in 1996 after graduating from the University of Ottawa with a Bachelor of Commerce degree, majoring in Finance and International Management. She was awarded the Chartered Financial Analyst designation in 2001.

Martin Paleczny, CFA
Vice President and
Senior Portfolio Manager
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Martin Paleczny, who has been in the investment industry since 1994, began his career at Royal Bank Investment Management, where he developed an expertise in derivatives management and created a policy and process for the products. He also specializes in technical analysis and uses this background to implement derivatives and hedging strategies for equity, fixed-income, currency and commodity-related funds. Since becoming a portfolio manager, Martin has focused on global allocation strategies for the full range of assets, with an emphasis on using futures, forwards and options. He serves as advisor for technical analysis to the RBC GAM Investment Strategy Committee.

Kristian Sawkins, CFA
Vice President and Senior Portfolio Manager
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Kristian is co-Head and a senior portfolio manager on the PH&N Fixed Income team, specializing in universe and short-term bond mandates. He is also a member of the PH&N IM Asset Mix Committee. Kristian joined Phillips, Hager & North Investment Management in 2002 as an associate analyst with the Canadian Equities Team and moved to the Fixed Income Team in 2005. Prior to joining the organization, Kristian spent three years at a major investment bank in New York across a few different roles. Kristian has a Bachelor of Commerce degree from the University of British Columbia and is a Leslie Wong Fellow as a graduate of the UBC Portfolio Management Foundation. He has been a CFA charterholder since 2002.

Jaco Van der Walt, DCom

Vice President and
Global Head of Quantitative Research & Investments
RBC Global Asset Management Inc.

As Head of Quantitative Investments, Jaco leads an experienced team that is driven to continually innovate across all its capabilities, including research, portfolio management, data and systems to leverage the combination of human and machine in investment decision-making. He previously held an executive role at one of South Africa's largest financial services companies, leading the Investment Management Office, with experience spanning pensions, insurance, banking and wealth management. As asset owner, he also chaired the boards and investment committees of several of the company's pension plans, promoting investment excellence and driving transformational change to ensure members reach their retirement goals. Jaco began his investment career in 1996 and holds a Master's degree in Economics from the University of Toronto and a Doctorate from the University of Pretoria.

Milos Vukovic, CFA

Vice President, Investment Policy
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Milos, who joined RBC in 2003, oversees investment-management activities including new-fund launches, performance analytics and trade-cost analysis. He is also responsible for developing and monitoring investment mandates and implementing tactical asset allocation for the RBC GAM investment solutions. Milos earlier worked for a Big 4 accounting firm and two top-tier securities firms. He earned an MBA at the Schulich School of Business and has held the CFA designation since 2004. He is a board member of both the Canadian Buy-Side Investment Management Association and the Canadian Advocacy Council for Canadian CFA Institute Societies, and recently joined IIROC's Market Structure Advisory Committee.

Brad Willock, CFA

Vice President and
Senior Portfolio Manager
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Brad Willock joined RBC Global Asset Management in July 2002 and is a Senior Portfolio Manager and CFA charterholder. In his current role, Brad has responsibility for RBC Global Asset Management's core and income-oriented U.S. equity strategies. He joined RBC in May 1996 after receiving a bachelor's of commerce degree with distinction from the University of Calgary. Prior to that, Brad obtained a bachelor's of science degree at the University of British Columbia and represented Canada at the 1992 Barcelona Summer Olympics in volleyball.

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Disclosure

RBC Global Asset Management

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