CIBC Asset Management

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POSITIONING PORTFOLIOS FOR A RETURN OF INFLATION

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1. Summary

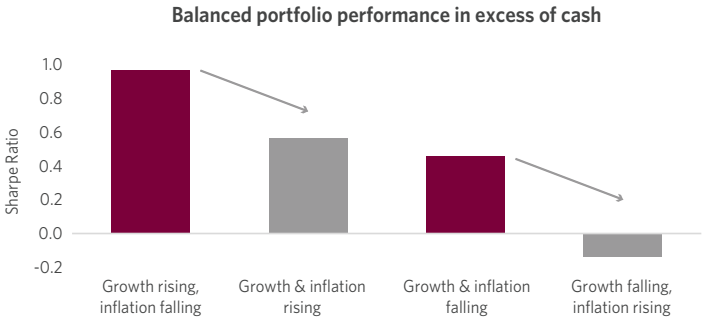
- The need to protect investment portfolios against the risk of a persistent, generalized rise in inflation is a distant memory for most investors domiciled in Developed Market economies.
- This narrative may be changing, at least in the U.S., with inflation expectations and uncertainty on the rise. We expect more inflation in coming years than the consensus.
- Inflation and inflation surprises impact portfolio performance. We discuss which asset classes are likely to perform better and worse in response to an increase in inflation risk.
- Differentiated performance in the face of a range of risk factors, including inflation, underscores the importance of constructing well-balanced portfolios. Breadth and diversification maximize the probability of achieving long-term performance targets, help achieve a smoother journey, and can mitigate the impacts of episodic negative shocks.

2. Introduction

Inflation risk has not been high on most investors' worry list for a long time. The market consensus remains sanguine. By contrast, we think it is time to start thinking some more about this risk. Ample liquidity, strong economic growth, rising input cost pressures, and central banks more tolerant of positive inflation surprises all suggest that inflation risk could exert a meaningful impact on portfolio performance in coming years.

Balanced portfolios typically have a concentrated focus on economic growth risk (Figure 1). They do well when growth is relatively strong and inflation benign. They do less well outside this narrow macroeconomic state. We think it pays to prepare.

Figure 1 – Balanced portfolio performance tends to be weaker in periods of rising inflation, even when growth is relatively strong

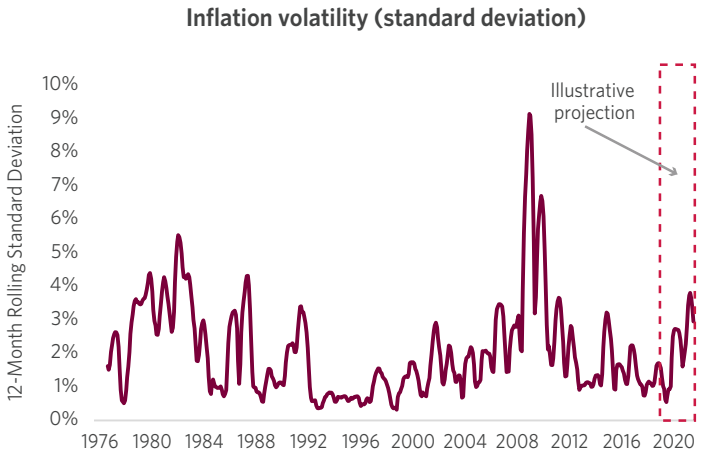


Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. Sample: February 1978 – January 2021. Balanced portfolio constructed as 60% equity (S&P 500) and 40% Fixed Income (Barclays U.S. Treasury index). Rising inflation defined as %y/y U.S. CPI inflation rate above both its trailing 4-quarter average and 2.5%. Falling inflation defined as %y/y U.S. CPI inflation rate below its trailing 4-quarter average. Growth rising (falling) defined as U.S. GDP growth above (below) its 4-quarter trailing average.

3. The return of inflation?

The U.S., in particular, is expected to see a marked increase in headline Consumer Price Inflation (CPI) this year. CPI will then likely fall back but remain higher than in recent years. A peak headline inflation rate close to 4% appears possible in 2021, with an average rate close to 3% likely in the subsequent few years; this compares with an average 1.7% in the years since the Global Financial Crisis (GFC).[2] We also expect an increase in inflation volatility (Figure 2). Inflation of this magnitude will eat away at the real value of portfolio cash holdings, and has important implications for other parts of investment portfolios, too. Inflation trends in other major economies will be more muted, but still with a risk to the upside.

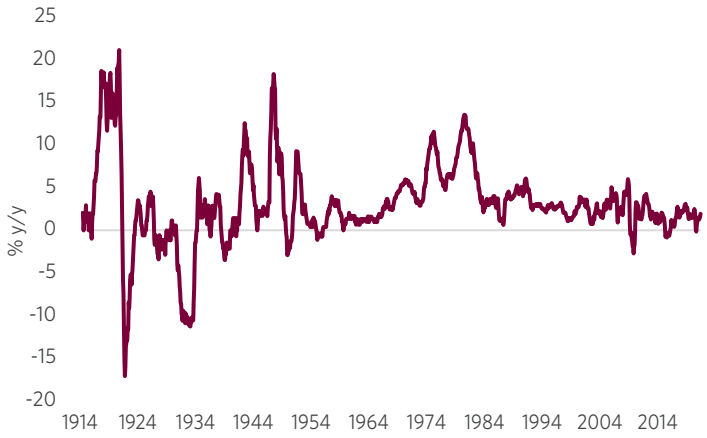
Figure 2 – Inflation volatility will likely move higher in coming months



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. Sample: January 1975 – January 2021.

To be sure, our inflation outlook does not envision a return to rates of inflation and inflation volatility regularly observed a century and more ago, and then intermittently in the 1940s, 1950s, 1970s, and 1980s (Figure 3).

Figure 3 – U.S. Consumer Price Inflation since 1914



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Federal Reserve Bank of St. Louis. Sample: January 1914 - January 2021

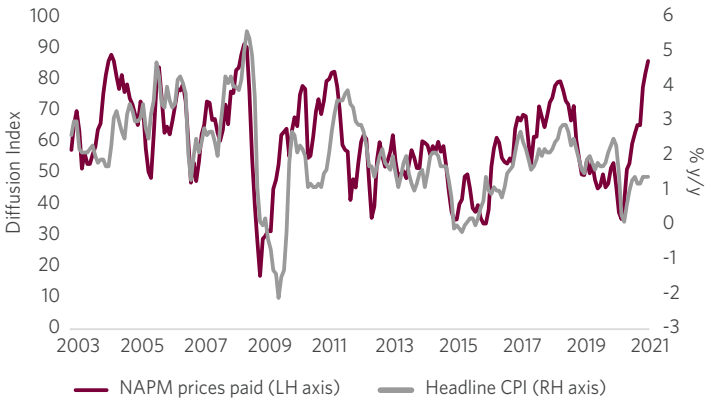
This does not make a discussion of inflation risk irrelevant, and we should guard against broad-brush statements. The chart above plots data for a generalized basket of goods and services. This definition of inflation is the dog that has not barked in the Developed World for a number of decades, including in the wake of the GFC, despite central banks' best efforts. But there has been plenty of inflation during these years. Just ask anyone exposed to U.S. college education fees, or Toronto real estate. And in many instances global equity and bond prices certainly appear inflated, relative to intrinsic value.

So why will the dog finally bark? There are at least five factors that will likely lead to an increase in U.S. CPI.[3]

First, base effects. This time last year, the price of West Texas Intermediate crude oil embarked on a journey into negative territory. Now, it trades above $60 per barrel. Many service prices experienced a similar journey. This will be a significant source of cost-push inflation in the second quarter of 2021. It will also be largely temporary, and the U.S. Federal Reserve (Fed) is keen to emphasize that it will have no bearing on monetary policy. How much impact it has in the longer term will depend upon any pass-through into inflation expectations. We will return to this point a little later.

Second, and more relevant to the longer-term inflation outlook, other input costs are also rising (Figure 4). This includes unit wage costs, and is being fueled partly by a plateauing in globalization. At the margin, the COVID-19 pandemic will solidify this plateau by encouraging reshoring, or at least nearshoring, of some production capacity considered to be of domestic strategic importance, often at the expense of higher costs.

Figure 4 – U.S. manufacturing prices paid are close to highs of the past 15 years, & suggest an increase in CPI



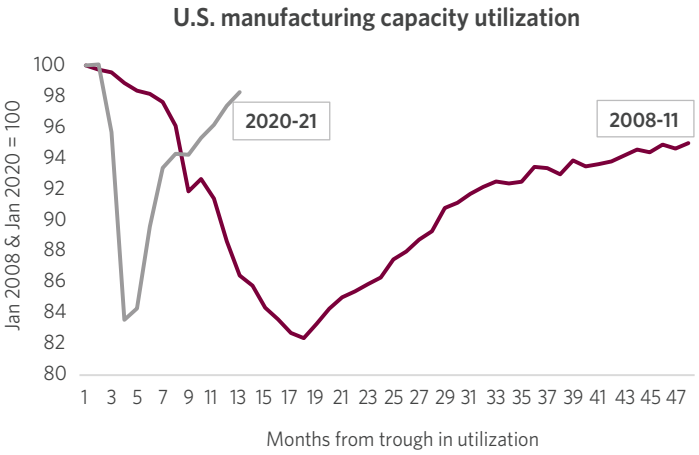
Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. Sample: January 2003 – January 2021.

Third, the depreciation of the U.S. dollar during much of the past year is amplifying these cost push trends. We expect the dollar to continue weakening, on trend, for the next few years. So this source of inflation will persist. Read more about our outlook on the U.S. dollar.

Fourth, consensus expectations for the growth recovery continue to be revised upwards, closer to our very constructive outlook. This sequence of revisions likely still has a little further to go. More growth is synonymous with a quicker absorption of spare capacity (Figure 5), as well as the emergence of bottlenecks. These have already been reported in semi-conductor chips, shipping containers, and the Crude Oil market; and U.S. retail sector inventories are at their lowest

reported level in 30 years relative to sales. Less spare capacity and increasingly numerous bottlenecks will lead to more inflation pressure.

Figure 5 – U.S. manufacturing spare capacity is being absorbed at a rapid clip



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. Sample: January 2008 – January 2021.

Fifth, and arguably of most importance, policy incentives and cost-push pressures have aligned. The 2021 iteration of the Fed has more motivation to generate incrementally higher inflation over the long term than its 2008 predecessor (Figure 6). This appears to be the path of least resistance to stabilize the U.S. debt-to-GDP ratio, alongside a multi-year anchoring of the Fed's policy interest rate near zero, and an implicit capping of longer-maturity bond yields close to current levels.

Figure 6 – U.S. government debt increased at an unprecedented pace in 2020, to record levels as a percentage of GDP

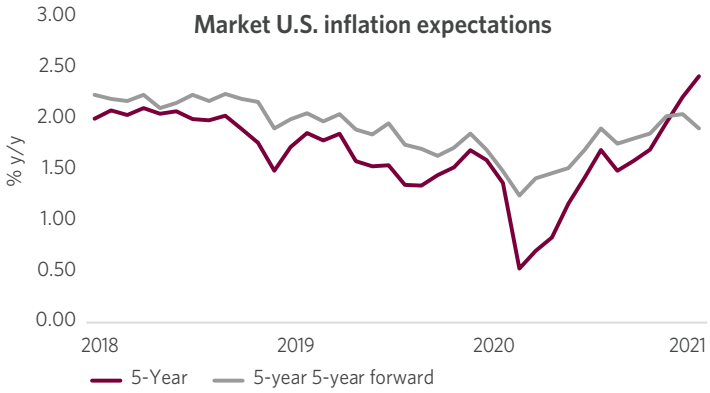
Country	2020 gov't debt (US$ trn)	2020 rise in gov't debt (US$ trn)	Population (mn)	2020 gov't debt per capita (US$)	2020 rise in gov't debt per capita (US$)
United States	22.21	4.20	328	67,672	12,797
Canada	0.76	0.31	38	20,300	8,202
United Kingdom	2.68	0.46	67	40,176	6,961
Japan	9.01	0.72	127	71,192	5,690
Germany	2.12	0.44	83	25,571	5,286
France	2.92	0.34	67	43,552	5,063
Italy	2.85	0.24	60	47,157	4,048
China	9.65	1.66	1,393	6,931	1,191

Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Gavekal, OECD.

The 2021 Fed also likely has more means to achieve this outcome. The recent adoption of an Average Inflation policy target increases the Fed's tolerance of positive inflation shocks. And a more collaborative relationship with the U.S. Treasury, led by former Fed Chairperson Janet Yellen, encourages it to err on the side of running monetary policy hotter than it was prepared to do in 2018 and 2019. So while bond yields may rise a little further from current levels, market participants are pricing in little chance of a significant policy interest rate increase before 2023. This outlook is correct in our opinion.

So far, our inflation view has not fully percolated into long-term market expectations (Figure 7). We think it will, with significant implications for asset prices, including the U.S. dollar.

Figure 7 – U.S. longer-term inflation expectations remain well anchored



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. Sample: January 2018 – January 2021.

4. Inflation's impact on portfolios

An analysis of the portfolio impact of inflation often begins with an examination of asset class risk exposures (Figure 8). Intuitively, a search for inflation hedges can quickly be narrowed to just a few asset classes, including real assets such as Gold, Oil and other commodities, real estate and infrastructure, and inflation-linked bonds (TIPS in the U.S.). Multi-asset strategies such as the CIBC Multi-Asset Absolute Return Strategy (MAARS) can be added to this list, as they have the flexibility and breadth to allocate risk to a number of these asset classes on a strategic and tactical basis.

It is noteworthy that a traditional Balanced portfolio does not have direct exposure to any asset classes that have traditionally performed well during periods of rising inflation, and instead is concentrated on economic growth risk and, to a lesser extent, interest rate risk.

Figure 8 – Asset classes & strategies provide exposure to specific risks. An optimal portfolio balances these risks to target desired investor outcomes

Economic growth risk	Interest rate risk	Inflation risk	Investment style risk	Illiquidity risk
Developed market equity	Government bonds	Gold	Value	On/off the run fixed income
Emerging equity	Credit/High Yield	Commodities	Carry	Private equity
Smart beta equity/credit	Emerging debt	TIPS	Momentum	Hedge funds
Private equity, real estate & infrastructure equity	Private debt, real estate & infrastructure debt	Real estate & infrastructure	Quality	Real estate & infrastructure

Source: The information was prepared by CIBC Asset Management Inc. using the following third-party service providers' data: Amundi (2020), Multi Asset: A Solid Total Portfolio Approach For A Complex World.

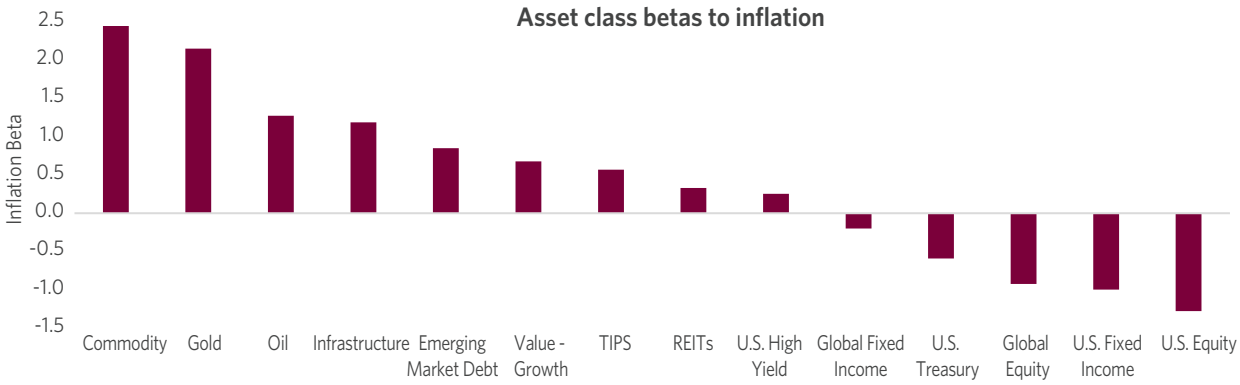
• Inflation betas & consistency

A good inflation hedge has two facets. First, strong co-movement, or beta, with inflation during periods of rising price pressures. Since January 1975, commodities, including Oil and Gold, and Infrastructure have all exhibited inflation betas in excess of one (Figure 9). For all real assets, rising inflation expectations encourage stronger investor demand, pushing prices higher. The beta of many commodities gets an extra push higher due to their continued central role in fueling economic growth.

Equities and nominal government bonds have negative historical inflation betas. They have proven to be poor inflation hedges. Equity as an asset class represents a claim on real assets of corporations. But it typically underperforms in periods of rising inflation and inflation uncertainty, for at least two reasons. First, margins are squeezed by rising input costs that can only partially be passed on to end-customers. Second, higher interest rates motivated by rising inflation expectations reduce the value of future earnings.

Nominal government and corporate bonds offer a fixed stream of nominal coupon payments. Inflation undermines the real value of these payments, as well as the value of the capital returned at maturity.

Figure 9 – One feature of an attractive inflation hedge is a high inflation beta

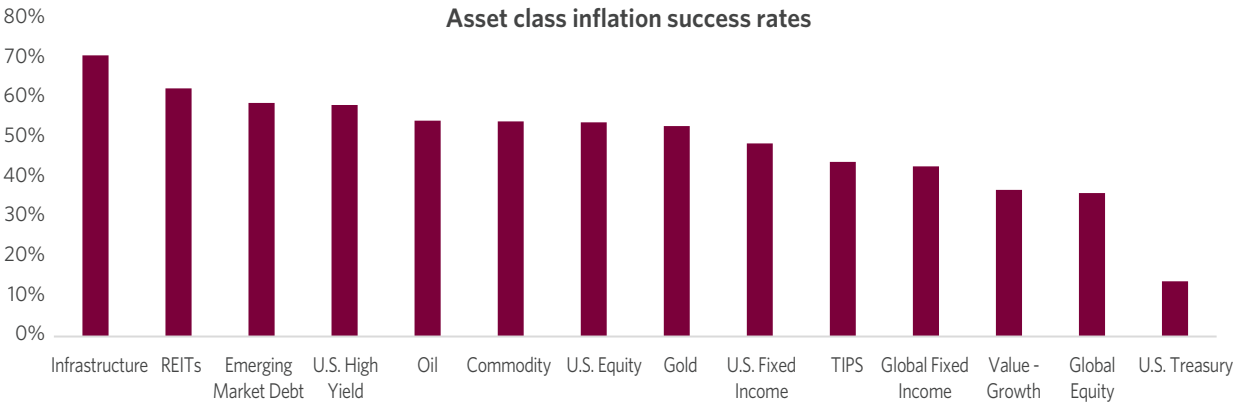


Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. We use a jagged edge sample start date, to maximize sample size. Maximum sample: May 1968 – January 2021.

For both equities and bonds, longer maturity assets have historically underperformed the most. This suggests a tilt during periods of rising inflation towards Value—from Figure 9 above, the historical inflation beta of an equity Value tilt is positive—as well as a tilt towards shorter duration bonds. Inflation-linked bonds—whose payments are linked to actual inflation, and therefore maintain their real value—are typically also a more attractive option, although the inflation beta of TIPS has actually been quite modest.

The second facet of a good inflation hedge is consistency. Positive co-movement of an asset class with inflation during only a few periods of rising price pressures is not enough, if this relationship fails during a subset of particularly relevant periods. Crude Oil and Gold have success ratios in excess of 50% (Figure 10). Not bad, particularly compared with U.S. Treasuries.

Figure 10 – A good inflation hedge out-performs when inflation is rising



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. We use a jagged edge sample start date, to maximize sample size. Maximum sample: May 1968 – January 2021. Success rate defined as the number of months each asset class reports a positive return when inflation is rising and above 2.5% y/y.

Infrastructure is the stand out inflation hedge from a consistency perspective, and has outperformed in 70% of rising inflation periods. This is intuitive, as many infrastructure sectors have explicit contract and regulatory links to inflation. But we caveat this result by emphasizing the differences that exist between various sleeves of Infrastructure. Context is important.

A similar caution is applicable for our generic measure of Real Estate. It has a lower historical inflation beta than the likes of Oil or Gold, but a higher success rate, above 60%. This also reflects an explicit inflation link in annual rental incomes. But there are many heterogeneous sectors within real estate, and the consistency of each one's inflation hedging ability will also depend upon, for example, the length of leases, the financing structure of the investment, as well as the impact of higher interest rates on asset valuations.

5. What comes next?

Our conclusions so far are relatively intuitive. But the devil is in the detail, as ever. Every period of inflation is different. The ability of asset classes to provide an effective inflation hedge varies through time and is conditional on a number of factors, including how far, how fast, and how unexpectedly inflation rises.

The policy response to higher inflation will also be important for asset returns. Through adoption of its Average Inflation target and verbal commentary, the Fed has signaled it will be less sensitive than usual to rising inflation. This means it will likely start to tighten later in the inflationary process than has been the case historically. We also expect the Fed to adopt an implicit yield curve control policy to ensure that any further increase in nominal yields beyond current levels does not threaten either the outlook for growth or, importantly, U.S. government debt servicing and fiscal sustainability. All this is likely to favor equities and real assets.

The behavior of real interest rates will also be important to asset class performance. The recent rise in nominal yields has broadly kept pace with the increase in market inflation expectations, so that real rates have risen relatively less, and the outlook for growth has not been impaired. Were real yields to move meaningfully higher because markets come to expect an early start to Fed policy tightening—as happened during the 2013 Taper Tantrum and in 2018—the outlook for growth will be adversely affected, and so would the expected performance of equities, and inflation hedges such as Gold (Figure 11). This is a risk, but not our central scenario. In multi-asset portfolios, we are positioned for continued positive performance from both equities and inflation hedges.

Figure 11 – The performance of Gold is impacted by the level of real interest rates

Interest rate level	Long-term average	Low (<0%)	Moderate (0%-2.5%)	High (>2.5%)
Annualized Gold return	3.32%	9.92%	6.88%	-5.33%

Source: The information was prepared by CIBC Asset Management Inc. using the following third-party service providers' data: Refinitiv Datastream. Sample: January 1975 – November 2020.

6. Constructing inflation aware portfolios

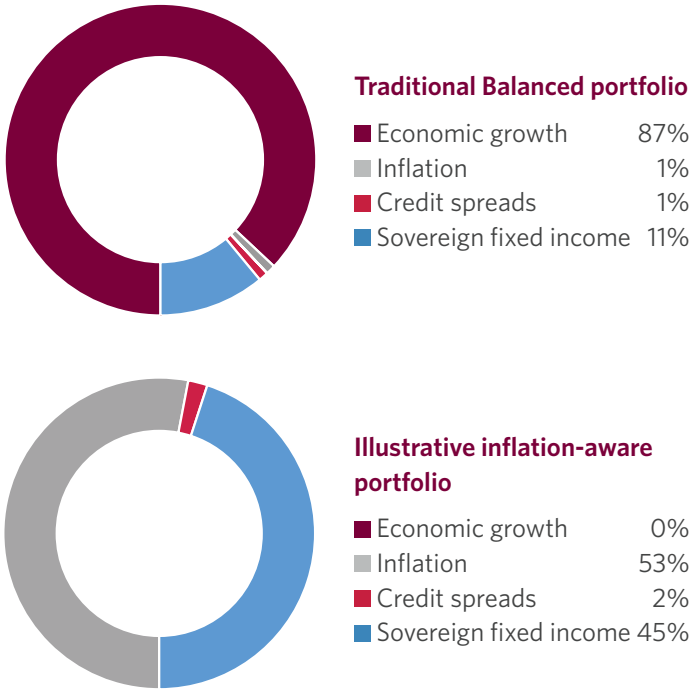
We have argued the case for higher inflation, and for robust portfolio construction that accommodates a broad range of risks and return opportunities. These themes are not mutually dependent. Robust portfolio construction that embraces breadth and diversification makes sense even if we are wrong on inflation.

But let's stick with our outlook for inflation. We observed that an ideal inflation-aware asset has both a consistent and high beta to inflation during periods of rising price pressures. We also observed that both these facets are rarely offered by a single asset class. Best to consider combining various asset classes to construct a robust inflation-aware sleeve within portfolios.

We also need to ensure that efforts to minimize vulnerability to inflation, or other risks, do not compromise expected long-term performance. In our opinion, equity has to remain at the core of investor portfolios focused on long-term capital accumulation.

One way to solve this conundrum is to decompose portfolios into separate risk factors. We focus on three: economic growth; interest rates; and inflation. This decomposition helps crystallize the source of returns to various asset classes. We perform this analysis on a traditional Balanced portfolio, as well as a stylized inflation-aware portfolio encompassing allocations to Real Estate, Gold, Infrastructure, and TIPS (Figure 12).

Figure 12 – Balanced portfolios concentrate on economic growth, and are unsighted to inflation & other risk factors

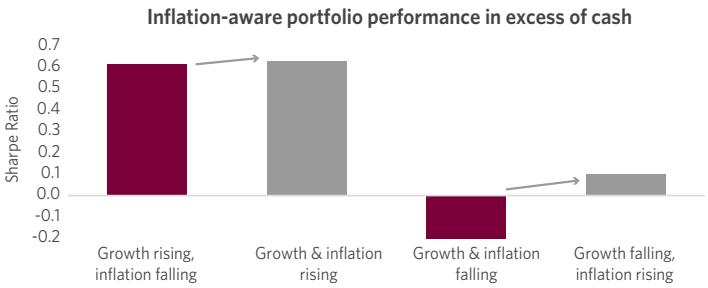


The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg, LLC.. Sample: January 1986 - December, 2020. Illustrative example. Inflation-aware portfolio constructed as 33% Gold, 33% TIPS, 16% Real Estate (REITs), and 16% Infrastructure.

As expected, economic growth is the main driver of Balanced portfolio performance, accounting for close to 90% of risk and performance. Other risk factors, including inflation, have only a marginal impact on expected performance.

The picture is completely different for our stylized inflation-aware portfolio, for which around half of performance is driven by inflation, with no impact from economic growth. The macro performance profile of this portfolio is also very different to a Balanced portfolio (Figure 13).

Figure 13 – The performance profile of a stylized inflation-aware portfolio is very different to a traditional Balanced portfolio



Source: The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. Sample: February 1978 – January 2021. Illustrative example. Inflation-aware portfolio constructed as 33% Gold, 33% TIPS, 16% Real Estate (REITs), and 16% Infrastructure. Rising inflation defined as %y/y U.S. CPI inflation rate above both its trailing 4-quarter average and 2.5%. Falling inflation defined as %y/y U.S. CPI inflation rate below its trailing 4-quarter average. Growth rising (falling) defined as U.S. GDP growth above (below) its 4-quarter trailing average.

Our stylized inflation-aware portfolio is no more an optimal solution than a traditional Balanced portfolio. It has no direct exposure to equity, and so will have little opportunity to generate performance sufficient to satisfy investors focused on long-term capital accumulation.

Instead, we have to construct portfolios that exhibit a well-balanced awareness of a range of risks and opportunities, including both growth and inflation.

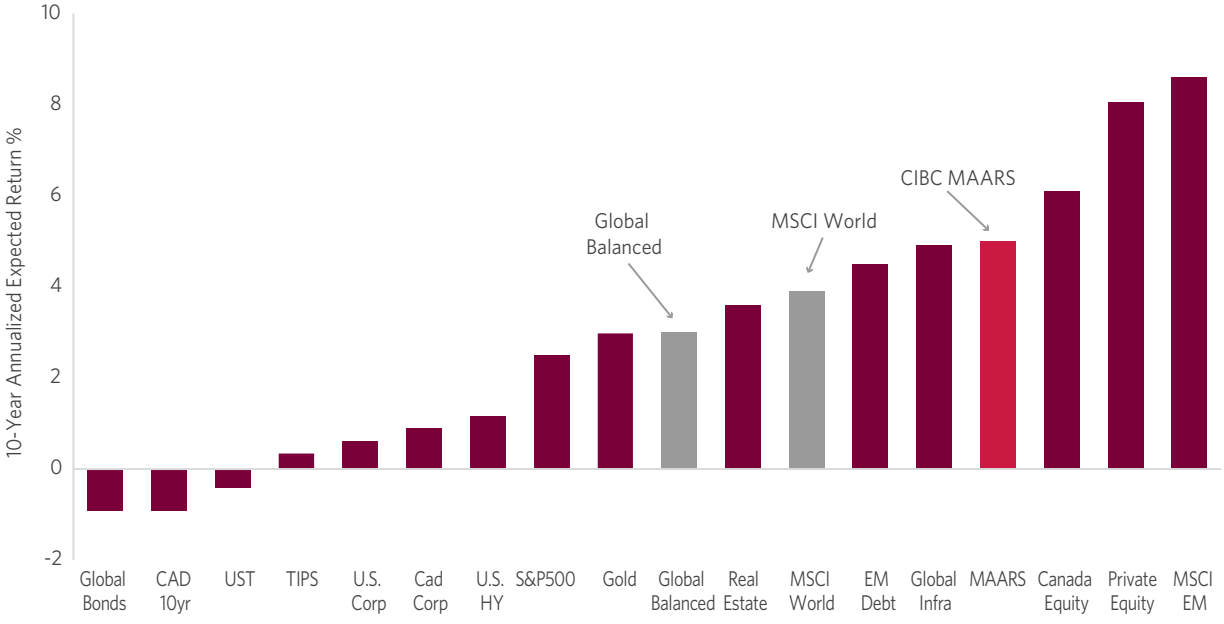
7. Our investment solutions

CIBC offers two ready-made investment solutions that can help investors realize well-balanced portfolios that encompass an awareness of rising inflation and the need to maximize long-term expected capital accumulation: CIBC MAARS; and the Renaissance Optimal Inflation Opportunities Portfolio.

• CIBC MAARS

MAARS is an efficient way to gain exposure to inflation risk without compromising long-term expected performance. The expected annual return to MAARS is attractive compared with a strategic allocation to equities, and is also superior to much of fixed income (Figure 14). MAARS is also very liquid, and has low, bond-like volatility.

Figure 14 – Long-Term expected annual returns to MAARS are comparable to equities & bonds



The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Bloomberg LLC.. Data as at February 18, 2021. UST = U.S. Treasuries.

Investment breadth and diversification are two key facets of MAARS. The strategy combines a mix of strategic and tactical exposures to equity, nominal and index-linked bonds, currencies, and commodities, including those that tend to co-move with inflation.

Tactical flexibility within MAARS allows the investment team to tilt portfolio allocations towards or away from risk factors, including inflation, as their relevance waxes or wanes.

• Renaissance Optimal Inflation Opportunities Portfolio

OIOP is managed by the same investment team as MAARS. As its name suggests, it is an inflation-aware strategy that allocates to equity, real assets—including real estate and infrastructure—Gold and precious metals, and inflation-linked bonds (Figure 15).

Figure 15 – OIOP has flexibility to tilt into inflation hedges

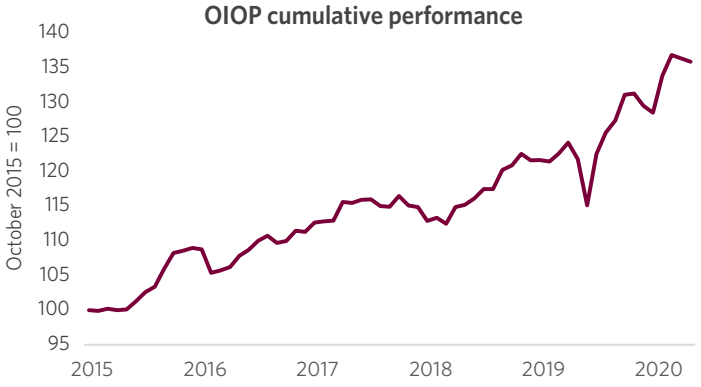
OIOP strategic portfolio composition

Asset class	Portfolio mix minimum	Portfolio mix maximum
Cash & cash equivalents	**0%**	**30%**
Inflation-linked bonds	**0%**	**50%**
Real assets	**0%**	**50%**
Real estate	0%	30%
Infrastructure	0%	30%
Commodities	**0%**	**50%**
Precious metals (including gold and silver)	0%	30%
Resources	0%	30%
Energy	0%	30%
Others	**0%**	**50%**
Nominal fixed income	0%	50%
Canadian fixed income	0%	40%
Foreign fixed income	0%	30%
Equities	0%	50%
Canadian equity	0%	25%
US equity	0%	25%
International equity	0%	25%
Emerging markets equity	0%	25%

The information was prepared by CIBC Asset Management Inc.

OIOP has less investment breadth than MAARS—it is a long-only portfolio, whereas MAARS can exploit the short and long sides of investment insights—and also has less tactical flexibility. But it does exactly what it says on the tin, and has delivered long-term performance broadly consistent with targets (Figure 16). And this solution's ability to invest in real assets is an important difference to MAARS, suggesting the two can complement one another in investor portfolios.

Figure 16 – OIOP has delivered investment performance consistent with targets



The information was prepared by CIBC Asset Management Inc. using the following third-party service providers' data: Bloomberg LLC. Sample is October 2015 to January 2021.

8. Conclusion

For the first time in decades, inflation is the center of attention. A relevant risk once more. Most portfolios are not inflation-aware, and are not well positioned to weather a meaningful rise in inflation. In this paper, we have offered a framework to think about this risk, as well as some views on which assets are likely to perform better in an environment of more inflation in the next few years.

Even more relevant, we have emphasized the importance of breadth and diversification. These are immutable facets of thoughtful and robust portfolio construction.

Let's connect

Should you have any questions about this report or anything else, please do not hesitate to connect:

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[1] Vjosana Klosi, CFA is Director, Portfolio Construction and Quantitative Analysis, and Jerry Lu, CFA is a Research Analyst, both in the CIBC AM (CAM) Investment Management Research Team. Michael Sager is Vice President, Multi-Asset & Currency, in the CAM Institutional Asset Management Team.

[2] Sample is October 2010 to January 2021.

[3] We are indebted to our colleague Vincent Lépine for his excellent analysis of prospective inflation trends.

The views expressed in this document are the personal views of Michael Sager, Ph.D., Vice-President, Multi-Asset and Currency, and Vjosana Klosi, Director, Portfolio Construction and Quantitative Analysis, and Jerry Lu, Research Analyst and should not be taken as the views of CIBC Asset Management Inc. This document is provided for general informational purposes only and does not constitute financial, investment, tax, legal or accounting advice, it should not be relied upon in that regard or be considered predictive of any future market performance, nor does it constitute an offer or solicitation to buy or sell any securities referred to. Individual circumstances and current events are critical to sound investment planning; anyone wishing to act on this document should consult with his or her advisor. All opinions and estimates expressed in this document are as of the date of publication unless otherwise indicated, and are subject to change. Any information or discussion about the current characteristics of this fund or how the portfolio manager is managing the fund that is supplementary to information in the prospectus is not a discussion about material investment objectives or strategies, but solely a discussion of the current characteristics or manner of fulfilling the investment objectives and strategies, and is subject to change without notice. You should not act or rely on the information without seeking the advice of a professional.

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