

# The role of bonds in an ultra low rate environment

Looking ahead to a world after COVID-19, most of the economic damage inflicted by the pandemic appears likely to recede within the short term. The economic recovery so far has been more enthusiastic than expected at every turn, which suggests a profound buoyancy, and the economic damage that does remain is mainly the artificial result of government restrictions rather than due to business sector excesses, which argues for a vigorous rebound as the restrictions ease. Significant monetary and fiscal stimulus has meaningfully minimized the usual recessionary surge in bankruptcies and defaults, making a lasting hangover unlikely. And China, which is farther along in its recovery from the pandemic, has revealed very little sustained economic damage.

That said, there are two economic outcomes of the crisis that we believe will be longer term in nature: we expect that public debt levels will remain permanently higher, and that interest rates – despite currently rebounding from all-time lows as the economy and inflation recover – will likely remain permanently lower than they would have been absent a pandemic.

Currently, nearly 20% of the global bond market carries a negative yield, and more than 80% of the market yields less than 2%. With accommodative monetary policy likely to remain a macroeconomic feature for some time – central bankers have committed to keeping interest rates extremely low to stimulate economies and financial markets even as the recovery gains traction – we don't expect any short-term rate increases over the next year, and likely beyond. While longer-term bond yields have a bit more room to rise, the scope for increases is limited by secular pressures holding down real interest rates, including decelerating economic growth, a global savings glut, highly indebted households, businesses, and governments, and aging populations.

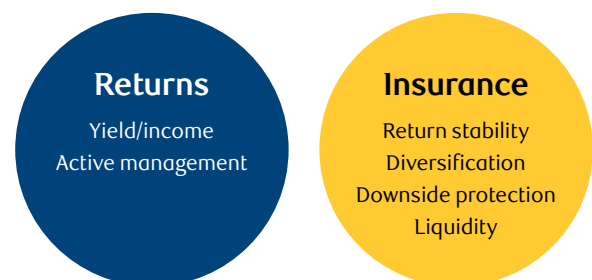
A prolonged period of low interest rates will keep newly elevated public debt levels affordable, and may bring unintended consequences for other asset classes, increasing fair value for housing and equities. For fixed income investors, the decline in bond yields has brought about significant debate around whether the key properties of fixed income have become compromised. The following paper will consider this question, contemplating each of the key properties of a bond portfolio in turn to determine the likely future effects of the ultra-low interest rate environment in which we find ourselves today.

## The key properties of fixed income

As investors, we are taught that each asset class has its own set of unique properties. In fixed income, we understand that bonds play two primary roles in the context of broader portfolios – offering a dependable source of income & return, and providing insurance in times of market distress – as well as several ancillary functions. This has been the case over the last 40 years, with traditional core bonds generally producing higher levels of income than equities and providing a cushion when higher-risk assets declined.

However, with interest rates at ultra low levels in an environment that will likely persist, the ability of bonds to fulfill these traditional roles has been called into question. The following sections consider the primary and ancillary functions of fixed income in an investment portfolio, focusing mainly on core fixed income (government and investment grade corporate bonds), as these are the sectors that make up broad market benchmarks and have the strongest insurance properties.

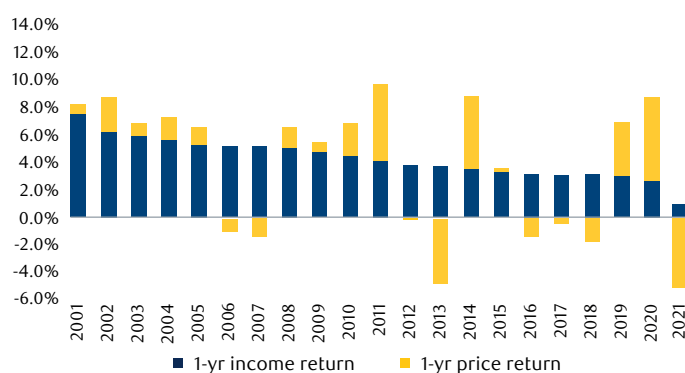
Figure 1: Core fixed income



## Return stability

The total return of any asset is made up of two components: the income it produces (i.e., coupons from bonds, dividends from stocks), and the price return (i.e., capital gain or loss). Figure 2 illustrates both components, and shows that the income return has made up the lion's share of annual returns for the broad Canadian bond market over the last 20 years. Although the rate has declined alongside the broader move lower in core bond yields over the period, it has been highly stable. The price component, on the other hand, has been more variable over time, though generally positive given the downward trend in interest rates over the period.

**Figure 2: FTSE Canada Universe Bond Index – Annual returns**



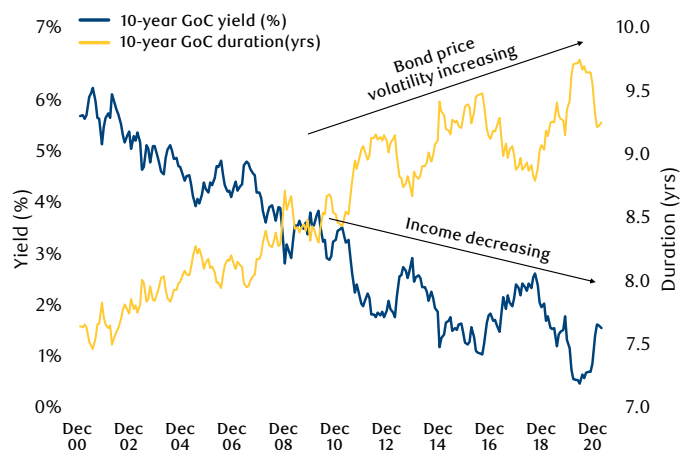
Source: RBC Global Asset Management, FTSE Russell.  
Note: 2021 YTD as of June 30, 2021.

While the income component has tended to dominate the overall return profile, providing steady returns with low volatility, the price return has become more significant in recent years as the income component has compressed. That would certainly be the case so far in 2021, with small positive returns from the income portion being offset by the price return component due to the sharp rise in rates we've seen so far this year. So this begs the question: might we expect a less stable return profile from core bonds going forward?

From basic bond math, we know that as bond yields come down, duration goes up and vice versa. As shown in Figure 3 below, as the 10-year Government of Canada bond yield declined over the last 20 years from 5.5% to just north of 1%, the modified duration increased from ~8 years to over 9.5 years over the same period. Since duration helps measure the price sensitivity of bonds to changes in interest rates, any move in interest rates today will have a greater impact on price return now than it would have 20 years ago. In sum, it is fair to say that low rates and the resulting higher duration

profiles of bond portfolios may lead to higher price return effects and lower price stability for total bond returns in aggregate. Therefore, our verdict on the ability of core bonds to deliver stable returns under very low rates: perhaps a little bruised relative to history, but not necessarily beaten.

**Figure 3: The relationship between yield and duration**



Source: RBC Global Asset Management, FTSE Russell.

## Diversification

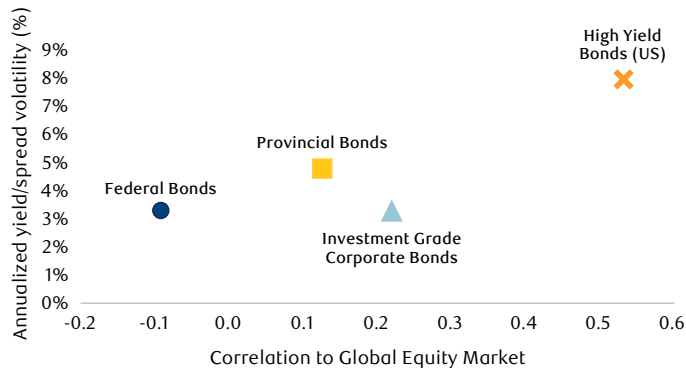
Core fixed income is well known for its diversifying qualities within the context of broader portfolios. In order to achieve optimal diversification at the total portfolio level, asset classes within the portfolio should have low correlation to each other, and the lower the better. Negatively correlated asset classes – those rare assets that zig when global equities zag – are the Holy Grail when it comes to diversification.

In Figure 4, we can see that's where the federal bond component of the broader FTSE Canada Universe Bond Index stands out. Over the last 20 years, Government of Canada bonds have displayed a negative correlation with global equities; despite being only very slightly negative, this is helpful nonetheless. Provincial bonds are only slightly positively correlated. Together with federal bonds, these government bonds make up nearly 75% of the total FTSE Canada Universe Bond Index. As a result, their very low correlation with global equities provides an important and effective level of portfolio diversification and risk reduction, especially when combined with their lower return volatility which is plotted on the vertical axis of Figure 4.

Figure 4 also shows some of the higher-risk areas of the broader bond market, and demonstrates that investment

grade corporate bonds and high yield bonds (not part of the broader FTSE Canada Universe Bond Index) are more positively correlated with equities. As a result, investors who are seeking returns in higher yielding sectors will have to cope with the trade-off: higher returns come with reduced diversification benefits and therefore higher risk.

**Figure 4: Return volatility vs. equity market correlation**



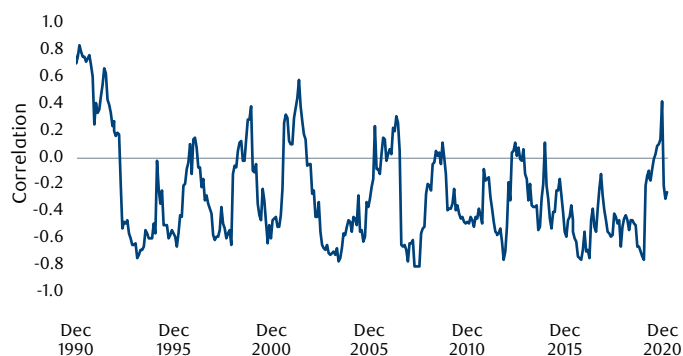
Source: RBC Global Asset Management, MSCI, ICE Data Services, Bloomberg, FTSE Russell.

Note: Federal Bonds represented by the FTSE Canada Federal Bond Index, Provincial bonds represented by the FTSE Canada Provincial Bond Index, Investment Grade Corporate Bonds represented by the FTSE Canada All Corporate Bond Index, High Yield Bonds represented by the ICE BofA US High Yield Index C\$, and Global Equity Market represented by the MSCI World Net Index C\$. Volatility and correlation figures have been calculated using monthly returns from December 2000 to December 2020.

Figure 4 reflects the investor experience in different segments of the bond market over the last 20 years, but with bond yields now at historic lows, it is important that we determine whether this dynamic might change going forward. Specifically, while 10-year government bond yields in Canada have traded below 2% consistently since 2011, Japan's 10-year government bond yield broke the 2% threshold in 1997 and has largely stayed below 2% since then<sup>2</sup>. Although Japan's unique demographic has been a key factor in driving this prolonged period of low bond yields, its bond market can nevertheless provide some indication of whether diversification benefits will remain if we stay in a "lower for longer" world.

As shown in Figure 5, the correlation between Japanese government bonds and Japanese equities has remained largely negative over time. Therefore, even if the global low yield environment persists, that does not necessarily mean that the negative correlations of government bonds with equities will disappear; as such, we see evidence that in certain markets, the diversification benefits of bonds can persist even at ultra low yield levels.

**Figure 5: Rolling 12-month correlation**



Source: RBC Global Asset Management, Bloomberg.  
Proxy for Japanese government bonds: Bloomberg Barclays Japanese Aggregate Total Return Index Unhedged JPY; proxy for Japanese equities: Nikkei 225 Index JPY).

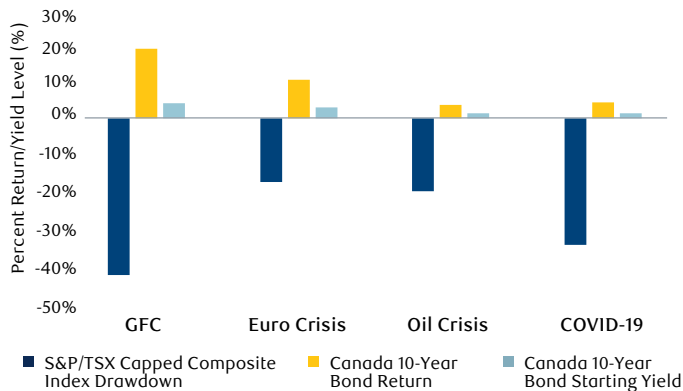
### Downside protection

Downside protection is a key property of core fixed income and highlights how the diversification elements of bonds hold up in extreme market events. Typically, downside events play out as follows:

- There is some kind of economic, market, or public health catalyst;
- risk assets sell-off sharply;
- investors flee to the safety of bonds; and
- this flight to quality drives up bond prices and bond returns.

Historically, government bonds in particular have demonstrated a great ability to produce healthy returns in the midst of market crises when equity markets have plummeted. Figure 6 compares the returns of the S&P/TSX Capped Composite Index and 10-year Government of Canada (GoC) bonds over the last four major financial crises; on average, the former returned ~-30.8% over these four periods, while the latter returned ~-10.1%. Taking a closer look however, as the starting yield on GoC 10-year bonds at the beginning of each crisis has come down over time, the overall returns from government bonds have also come down, suggesting potentially lower downside protection. Unfortunately this is the current reality for Canadian fixed income investors, but Canadians are not alone. As shown in Figure 7, regions with lower starting yields got much less downside protection from their bonds during the pandemic crisis than countries with higher starting yields, as evidenced by the smaller change in overall yield levels. Specifically, higher starting points in Canada and the U.S. allowed for about 1% in yield compression; in contrast, in regions where starting yields were lower such as the U.K., Eurozone, or Japan, yield compression was closer to 25-50bps.

<sup>2</sup>Source: RBC GAM, Bloomberg.

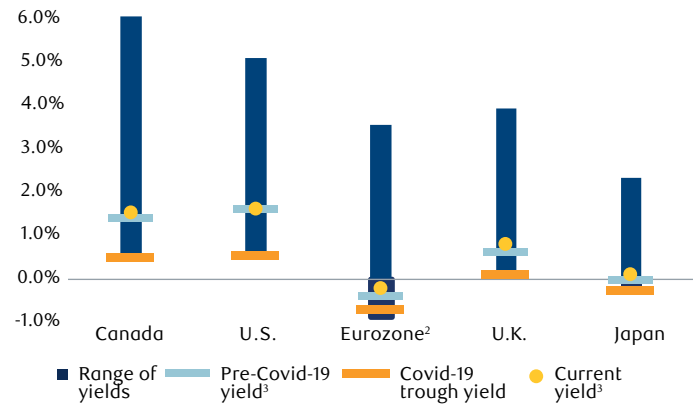
**Figure 6: Downside protection during different crises<sup>1</sup>**

<sup>1</sup>Great Financial Crisis; 10/31/2007 – 03/09/2009; Euro Crisis: 05/02/2011 – 10/04/2011; Oil Crisis: 04/20/2015 – 01/20/2016; COVID-19: 02/19/2020 – 03/23/2020.

<sup>2</sup>Eurozone represented by Germany.

<sup>3</sup>Pre COVID-19 yield as of February 19, 2020; Current yield as of February 19, 2021.

Source: RBC Global Asset Management, Bloomberg, as at February 19, 2021 based on daily yield data.

**Figure 7: 10-year Government Bond Yields over the past 20 years**

With the recent rise in government bond yields, the good news in Canada is that our overall interest rate levels are at relatively higher levels than those of the U.K., Eurozone, or Japan. In addition to having room for a meaningful compression in yield levels last year, with yields trading back near their pre-pandemic levels, we have regained some cushion for the next crisis. As such, our verdict on downside protection is that it remains mostly intact in Canada and the U.S., but a bit more of a mixed picture in other major developed markets.

## Liquidity

Arguably one of the most important roles of a core fixed income allocation within an investment portfolio is to provide liquidity. Interestingly, downside events tend to go hand-in-hand with liquidity crises, and March 2020 was a prime example:

- With the onset of the COVID-19 pandemic and the sharp economic decline, risk assets witnessed one of their sharpest sell-offs while core bonds rallied as investors flocked to the safety of government bonds;
- this triggered the need for leveraged investors to meet margin calls and other investors to re-balance their portfolios according to their investment policies; and
- in order to source liquidity for these purposes as well as to meet usual monthly disbursements such as benefit payments, investors turned to the bond market.

Although liquidity was stressed in the provincial bond market and poor in the corporate bond market, investors were nevertheless able to source liquidity from Government of Canada bonds. As the old cliché goes, “Liquidity is like oxygen,

you don’t notice you need it until it is gone,” and low-yielding Government of Canada bonds were oxygen in the crisis last year. Liquidity was restored in the months that followed as the Bank of Canada introduced various bond purchase programs.

In sum, while it is difficult to pinpoint the exact degree of liquidity required in any given portfolio, it is nevertheless a critical component of portfolio construction and should always be given careful consideration. As it relates to core fixed income, the investor experience last spring demonstrates that the liquidity in core bonds is worth paying for. As such, our view is that the liquidity property of core bonds remains firmly intact.

## Returns

Certainly one of the primary purposes of core fixed income is to provide investors with income and relatively high yield levels, which translate into returns. However, as interest rates have declined and given that starting yields have historically been a good predictor of future returns, their ability to fulfill this role has naturally been called into question.

Consider Figure 8. In 2001, the starting yield on long-term Government of Canada bonds (labelled here as risk-free rate) was 5.60%, and the subsequent annualized return on these bonds over the next 20 years was 6.85%. If we look at corporate bonds we see a similar picture. The starting yield in 2001 was 6.95%, with 5.60% of that coming from the underlying risk-free rate, 0.60% from a liquidity spread, and 0.75% from an embedded credit spread<sup>3</sup>. The subsequent annualized return on corporate bonds over the next 20 years of 8.10%, with the realized returns on the credit and liquidity components being very much in line with their starting spread levels.

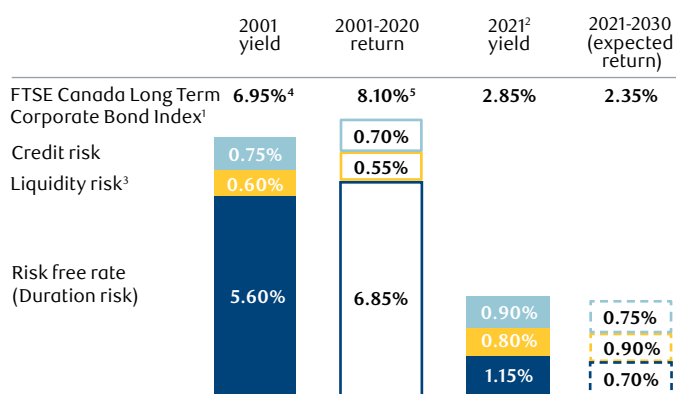
<sup>3</sup>Please note that the liquidity risk premium is proxied by the spread on the FTSE Canada Long Term Provincial Bond Index over the FTSE Canada Long Term Government Bond Index. The credit risk premium is proxied by the spread of the FTSE Canada Long Term Corporate Bond Index over the FTSE Canada Long Term Provincial Bond Index.

The right-hand side of Figure 8 brings us to today, and shows starting yields at the beginning of 2021 (the long-term risk-free rate and the respective credit & liquidity risks) as well as forecasted returns to long-term Canada, provincial, and corporate bonds over the next 10 years. Comparing past and present, and recognizing that starting yields tend to be strong predictors of future returns, we can make a few key observations:

- The payoff for risk-free bonds is expected to be very modest (less than 1%).
- The payoff for taking on credit and liquidity risk appears to be consistent with what we've seen in the past – credit and liquidity returns have been agnostic to the long-term downward trend in risk-free rates.

With the above factors in mind, it is evident that the return profile of core fixed income is lower than it once was, however the returns to bondholders for bearing credit and liquidity risk remain intact.

**Figure 8: Returns: Historical and forward-looking expectations**



Source: RBC Global Asset Management, FTSE Russell.

<sup>1</sup>Expected returns are for illustrative purposes only and are not guaranteed. PH&N Institutional accepts no liability for any failure to meet such forecast or target.

<sup>2</sup>Yield as of December 31, 2020.

<sup>3</sup>Represents FTSE Long Term Provincial Bond Index.

<sup>4</sup>As at January 1, 2001.

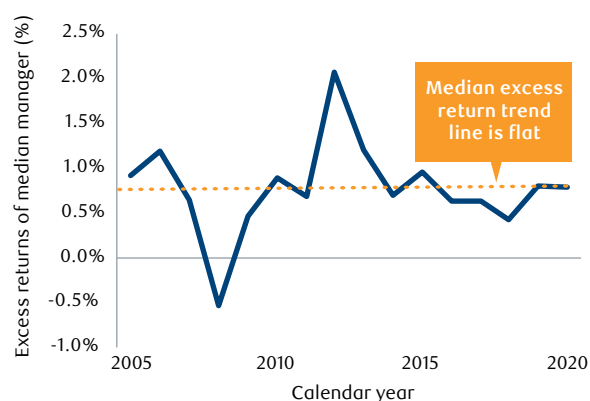
<sup>5</sup>As of December 31, 2020.

## The role of active management

Though bond yields have declined by more than 50% over the past 15 years<sup>4</sup>, the potential for active management to generate alpha has remained fairly consistent. Specifically, as shown in Figure 9 below, the median Canadian core plus manager has produced ~80 basis points of alpha per year over the last 15 years<sup>5</sup>.

In consideration of the relatively lower yield levels today versus 15 years ago, the potential value-added from active management now makes up a significantly greater proportion of the total return an investor can expect to earn on their fixed income holdings. For example, a core plus fixed income strategy with an alpha target of 125 basis points; the proportion of active management's expected contribution to total return accounts for ~50% today compared to ~23% 15 years ago as shown in Figure 10. Thus, the opportunity to enhance returns through active management is even more compelling in an environment of historically low interest rates.

**Figure 9: Median core plus manager 4-year rolling excess returns vs. FTSE Canada Universe Bond Index**

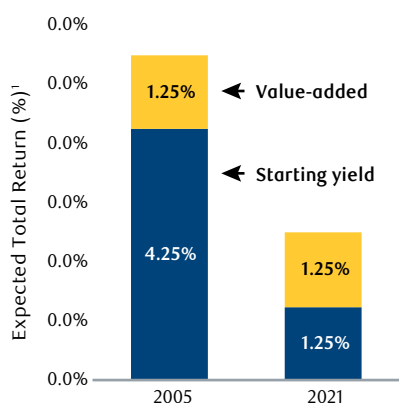


Source: eVestment Canadian Core Plus Fixed Income Universes, RBC Global Asset Management. Annualized 4 year performance for periods ending December 31. Return characteristics presented in C\$. Gross of fees performance. Benchmark: FTSE Canada Universe Bond Index.

<sup>4</sup>Source: Bloomberg, FTSE Canada Universe Bond Index as proxy for bond yields.

<sup>5</sup>Core plus strategies go beyond core Canadian bonds by allowing fixed income managers to invest in non-benchmark sectors such as high yield bonds, mortgages, private debt, and global bonds.

**Figure 10: Active management's proportionate share of total returns**



Source: RBC Global Asset Management, FTSE Global Debt Capital Markets Inc. Starting yields as of December 31, 2005 and December 31, 2020.

<sup>1</sup>Expected total return is a function of the starting yield on the FTSE Canada Universe Bond Index and a value-add target of 1.25%.

## Conclusion

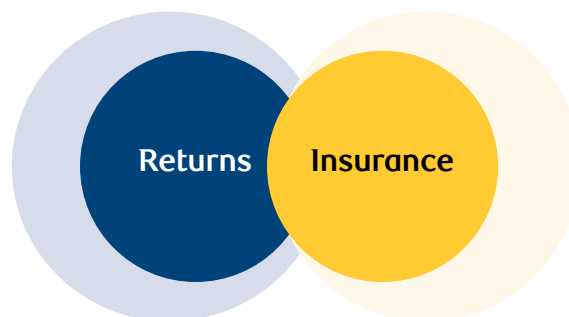
When we consider the properties of core fixed income within the prevailing low interest rate environment, we observe the following:

- As it relates to the **insurance properties** of bonds, return stability is somewhat bruised but diversification, downside protection, and liquidity features remain intact.
- Regarding **return properties**, while risk-free returns have been impaired, credit and liquidity risk should continue to deliver in the long run for investors.
- The potential value-add from active management is more important than ever.

With the above conclusions in mind, it is fair to say that the reduced return levels expected from fixed income have increased the cost of portfolio insurance. However, considering that most investors can't afford for their portfolios to be uninsured, core fixed income will continue to play an important role in most portfolios.

Lastly, having summarized the primary roles of fixed income allocations within investment portfolios and how the performance of these functions has been affected by the ultra low rate environment, we hope the above has provided a helpful framework for plan sponsors seeking to determine whether their current portfolio structure will continue to perform as intended. Our upcoming publications in this series will focus on potential approaches to addressing the specific investment challenges faced by pension plans in the ultra low rate environment.

**Figure 11: Core Fixed Income**



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