# Interest rate developments

## Financial market developments

When the Federal Reserve increased interest rates in December 2015, the message from Federal Reserve Chair Janet Yellen was that it will be different this time: the Fed would be patient and markets should expect a long, gradual march to monetary policy normalization. In 2016, even though the Fed's patience may have been tested, they have yet to hike rates again due to domestic and global developments that called for maintaining easy monetary policy. Looking ahead we know the Fed will at some point raise rates again, but when will depend upon global economic and financial conditions. This very patient Fed suggests that interest rates will remain "lower for much longer" but even so as we've seen recently markets will continue to be volatile. This volatility can affect the value of financial portfolios, especially fixed income investments. Interest rates and the value of existing bonds share an inverse relationship — when interest rates increase, bond prices fall, triggering potential losses in bond portfolios.

## The future is anything but certain

Clearly developments in the U.S. economy will play an important role in Federal Reserve policy decisions, but as we've seen in recent months the Fed also pays close attention to global economic and market developments. Many global economies are struggling and central banks are keeping rates low and turning to negative rates in some cases. RBC Wealth Management considers it important to educate their financial advisors and clients about the potential impact of these global developments on investment portfolios. Rather than simply stating a market expectation, RBC Wealth Management® strategists provide guidance on when, why, and how these changes may take place, in addition to providing professional opinion on potential reactions and solutions to changes in the market.

## What you can expect

Using the Federal Reserve's most recent interest rate forecasts, the "dots," the terminal or peak federal funds rate at the end of this new tightening cycle in several years will be approximately 3%. Recent comments from senior Fed officials, however, suggest this rate could ultimately be lower and closer to market forecasts of 2.5%. RBC Wealth Management strategists have published findings that suggest historically short-term and long-term interest rates will converge at this peak fund rates and the yield curve will flatten. So whether it is 2.5% or 3%, with current yields of 0.71% on two-year Treasury notes and 1.53% on 10-year Treasury notes, short maturities may experience the most price volatility so investors would be better off considering longer-dated issues. It is important to note, however, that based upon Federal Reserve guidance, rate increases will likely take place at a gradual pace, not overnight.

## What not to expect

One of the Federal Reserve's primary mandates is to set the U.S. economy on a strong sustainable growth track. Unfortunately, growth has been inconsistent and the economy is still struggling to grow at significantly better than 2%. Current forecasts suggest growth will finish the year on a strong note, third quarter GDP may hit 3.5%, but until global economies stabilize, the U.S. is unlikely to experience break-away growth of 3% or better on a consistent basis. Slow domestic growth and global economic issues that will keep global central banks on easy street and are the reasons that current low levels of interest rates are likely to persist for the next several years. A development that bears watching which could change the path for interest rates and central bank policy is the increasing talk from governments of the need for fiscal stimulus. This indicates a possible shift away from the fiscal austerity mindset that has left economic management in the hands of central bankers in recent years. If broadly accepted the combination of easy monetary policy and fiscal stimulus could have a powerful impact on global economies, but this won't happen overnight and by no means is guaranteed.

## Duration and convexity — important concepts for all fixed investors

Fixed income investors are very familiar with terms such as coupon, maturity, and yield to maturity but individual investors may not be as familiar with concepts such as duration and convexity. These aren't new concepts; institutional investors have used them for years in evaluating fixed income portfolios and individual investments. It is our view, however, that individual

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investors can benefit from these concepts as well. They should be of great use in evaluating whether a specific fixed income investment is appropriate or in determining the performance of their portfolios, but before one can use these tools, they must be understood.

## Duration

Modified duration is the percentage change in the price of a fixed-income instrument per basis point change in yield. For a 1% change in yield, an instrument with a modified duration of 1.5 can be expected to change 1.5% in price in the opposite direction. Macaulay duration is the present value weighted-average term to maturity of a fixed-income instrument expressed in years. It is calculated as the average life of the present values of all future cash flows of an instrument with the time delay until receipt of each cash flow weighted by the contribution of that cash flow to the total present value of the instrument. Both are measures of price sensitivity to interest rate changes. The longer its duration, the more sensitive an instrument is to changes in interest rates.

## Convexity

In a fixed-income instrument, convexity is a measure of the way duration changes as interest rates change. An instrument is said to have positive convexity if its value increases by more than duration predicts when interest rates drop, and decreases by less than duration predicts when interest rates rise. An instrument for which the opposite is true is said to have negative convexity. For example, since a non-callable bond's duration usually increases as interest rates decrease, it is said to have positive convexity. A callable bond or a mortgage-backed security on the other hand will see their duration shorten as interest rates fall and as such they are said to exhibit negative convexity.

Price volatility and liquidity risks increase in fixed income markets due to increased investor expectations for higher rates as the Federal Reserve slowly begins to remove monetary stimulus. As such, we feel it is important for all investors to become familiar with the concepts of duration and convexity — they are important tools that will help them manage their fixed income portfolios.

## Potential solutions

In the past seven years, with interest rates remaining low, investors either purchased short duration bonds in anticipation of rates rising or long duration bonds in order to receive higher yields. In hindsight it is the latter strategy that worked best and now that we understand just how patient the Fed will be longer-dated issues should continue to offer opportunities. Nonetheless, markets will continue to see bouts of volatility in anticipation of changes of Fed policy which will impact both short and long-term bonds. For this reason we recommend that investors review their holdings with their financial advisors to get a perspective of how their investments may perform under different interest rate scenarios. This analysis can indicate which bonds would be most affected by interest rate hikes or a prolonged period of low rates, and help to decide whether to swap out these securities for more stable investments or bonds with more call protection.

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