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FIXED INCOME 101

Getting to Know Canadian Real Return Bonds

Among the many acronyms in the arena of fixed income securities resides real return bonds (RRBs). RRBs, or “real bonds,” are fixed income securities issued by the Canadian government and some of its provinces. These types of bonds may also be referred to as “linkers” in other regions. They are issued with a fixed or zero coupon rate and can be “stripped” into principal and coupon components. RRBs are unsecured, unconditional obligations of Her Majesty in right of Canada. They may not be called for redemption prior to maturity, and they have a nominal principal amount of CAD 1,000.¹ The bonds pay interest semiannually (in June and December), have set maturities, and are linked to the Consumer Price Index (CPI) for Canada.

To the extent that the government of Canada issues additional real return bonds of a series, such additional bonds and the larger amount outstanding may enhance the liquidity of the series.

THE RRB MARKET

According to Bank of Canada data, there were seven real bond issues outstanding with a par amount of CAD 41.8 billion as of May 31, 2016.² The maturities of these seven bonds range from 2021 to 2047. In addition to the real bonds, the government of Canada has issued CAD 463 billion in notes and bonds along with CAD 147 billion in Treasury bills. Although they are of average liquidity, Canadian government RRBs are slightly less liquid than Canadian government notes and bonds but more liquid than their provincial counterparts. To the extent that the government of Canada issues additional RRBs of a series, such additional bonds and the larger amount outstanding may enhance the liquidity of the series.

UNIQUE CHARACTERISTICS OF REAL OR INFLATION-LINKED BONDS

Real bonds are like any other bond, except for an additional structural enhancement. The principal and coupon are indexed to changes in the CPI. At the time of purchase, a conventional bond provides a number of known characteristics in regard to coupon and principal payment. Over the life of a conventional bond, coupon payments will be subject to not only reinvestment risk due to changes in interest rates, but also inflation risk, as the purchasing power of the cash flow will depend on the prevailing level of inflation at the time of payment.

¹ “Canada Real Return Bonds,” Bank of Canada, Nov. 25, 1994. Accessed Dec. 8, 2013.

² “Government of Canada Treasury Bills and Domestic Marketable Bonds Outstanding,” Bank of Canada, May 31, 2016.

However, due to the inflation factor, real bonds do not provide a known value of cash flow, but rather the real return is set at the time of purchase. A base value of the CPI is associated with each issued bond, and is known as the CPI_{base} . Thereafter, both the principal and the coupon are indexed according to the CPI_{base} . The effect is that both the principal and interest pay in constant dollars, thus providing protection from future inflation. At issuance, an index ratio is 1.0 and is adjusted daily through the linear interpolation of the CPI data measured in the two preceding months, and this is known as the reference CPI. The index ratio ($\text{index ratio} = \text{reference CPI} \div CPI_{base}$) will therefore increase along with inflation and decrease along with deflation. Once the index ratio is known, it is multiplied by the real price of the bond (in constant dollars) to get the price in current dollars: $\text{corrected price} = \text{real price} \times \text{index ratio}$.

As the index ratio changes, the principal and coupon on the bond adjust on a percentage basis, either up (with inflation) or down (with deflation).

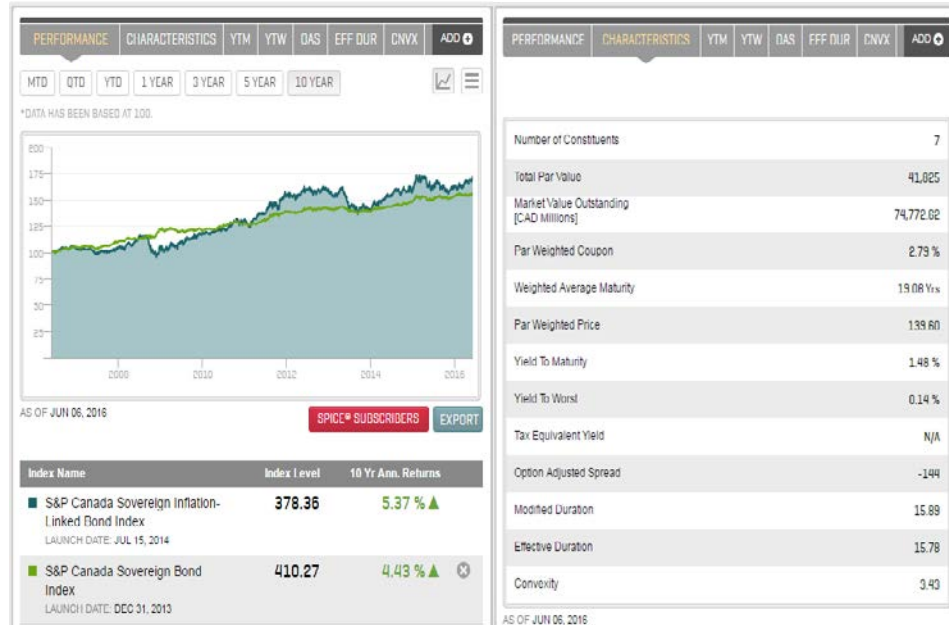
As the index ratio changes, the principal and coupon on the bond adjust on a percentage basis, either up (with inflation) or down (with deflation). An RRB quote consists of two numbers: the real price and real yield. You can determine the approximate market value of an RRB by multiplying the real price by the index ratio.

Canadian RRBs are different from U.S. Treasury inflation-protected securities (TIPS), for which the redemption value of the principal cannot go below 100%, even if the TIPS index goes below 1.00 (indicating deflation). Ergo deflation, or long periods of price declines, can be a risk to RRBs, as these periods could lead to the inflation-adjusted principal amount falling below the original amount and declining coupon payments, though it is considered unlikely.

THE INDEX

S&P Dow Jones Indices has developed an index that seeks to measure the performance of these bonds. The [S&P Canada Sovereign Inflation-Linked Bond Index](#) is a comprehensive, market-value-weighted index that is designed to track the performance of Canadian dollar-denominated, inflation-linked securities publicly issued by the Canadian government for the domestic market.

Exhibit 1: The S&P Canada Sovereign Inflation-Linked Bond Index Performance and Characteristics



Source: S&P Dow Jones Indices LLC. Data as of June 6, 2016. Past performance is no guarantee of future results. Chart and table are provided for illustrative purposes.

Real bonds are relatively safe in regard to credit quality, as they are unconditionally guaranteed by the government of Canada.

THE BENEFITS OF RRBs

Real bonds are relatively safe in regard to credit quality, as they are guaranteed by the government of Canada. Since Canada's local currency long-term debt credit rating has been 'AAA' since the early 1990s, RRBs provide the highest of ratings and purchasing power protection. Inflation-linked real bonds offer potential protection against higher inflation and higher rates, thus their returns are highly correlated to inflation. The bonds provide a predefined real rate of return and historically have had a low correlation of return with other asset classes, thus making them a potential tool for diversifying.

RRBs AS A MARKET INDICATOR

As with other inflation-linked bonds, the level of expected inflation is forecast by the market yield of real bonds. The break-even rate is the difference between the yield on a conventional Treasury bond and the real yield on an inflation-linked bond of similar maturity and credit quality. The break-even rate reflects the market's expectation for inflation and helps to determine which asset will outperform. If the inflation rate averages more than the break-even rate, the inflation-linked bond will outperform the conventional Treasury bond. Conversely, if inflation underperforms the break-even rate, the conventional Treasury bond will outperform the inflation-linked bond. Theoretically, if the inflation rate remains at the break-even rate, neither security will outperform the other.

TAX CONSEQUENCES

Coupon payments and increases in inflation compensations must be included annually as ordinary income, even though the inflation compensation will not be paid out until the maturity of the bond. In times of high inflation, it is possible that the taxes owed in a given year may be greater than any coupons received for that year. Because the inflation indexing of the capital results in deemed income from individual bonds, with no cash immediately received, it is widely recommended that RRBs be held in tax-sheltered accounts.

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RELATED S&P DOW JONES INDICES RESOURCES

For more on inflation and indexing, please see [“Where Inflation and Interest Rates Intersect”](#) or, [“Let’s Get Real About Indexing Real Assets: Introducing the S&P Real Assets Index.”](#)

Exhibit 2: Inflation-Linked Bond Indices

Global Developed Sovereign Inflation-Linked Indices

Index Name	Ticker	First Value Date	Launch Date
S&P Global Developed Sovereign Inflation-Linked Bond Index	SPFIRLIT	Jan. 30, 1998	Aug. 1, 2014
S&P Global Developed Sovereign Inflation-Linked Bond Index (USD)	SPFILIUT	Jan. 30, 1998	Aug. 1, 2014
S&P/ASX Government Inflation-Linked Bond 0+ Index	SPBDAI0T	May 31, 2011	Aug. 1, 2014
S&P Canada Sovereign Inflation-Linked Bond Index	SPFICAIT	Jan. 30, 1998	Aug. 1, 2014
S&P Denmark Sovereign Inflation-Linked Bond Index	SPFIDKIT	May 31, 2011	Aug. 1, 2014
S&P Eurozone Sovereign Inflation-Linked Bond Index	SPFID4IT	Oct. 30, 1998	Aug. 1, 2014
S&P Eurozone Sovereign Inflation-Linked Bond Index (USD)	SPFIDIUT	Oct. 30, 1998	Aug. 1, 2014
S&P France Sovereign Inflation-Linked Bond Index	SPFIFRIT	Oct. 30, 1998	Aug. 1, 2014
S&P Germany Sovereign Inflation-Linked Bond Index	SPFIDEIT	March 31, 2006	Aug. 1, 2014
S&P Italy Sovereign Inflation-Linked Bond Index	SPFIITIT	Feb. 28, 2005	Aug. 1, 2014
S&P Spain Sovereign Inflation-Linked Bond Index	SPFIESIT	May 30, 2014	Aug. 1, 2014
S&P Israel Sovereign Inflation-Linked Bond Index	SPFIILIT	Sept. 29, 2006	Aug. 1, 2014
S&P Japan Sovereign Inflation-Linked Bond Index	SPFIJPIT	March 31, 2004	Aug. 1, 2014
S&P New Zealand Sovereign Inflation-Linked Bond Index	SPFINZIT	Dec. 1, 1998	Aug. 1, 2014
S&P South Korea Sovereign Inflation-Linked Bond Index	SPFIKRT	Feb. 27, 2009	Aug. 1, 2014
S&P Sweden Sovereign Inflation-Linked Bond Index	SPFISEIT	Nov. 28, 2003	Aug. 1, 2014
S&P U.K. Gilt Inflation-Linked Bond Index	SPFIGBIT	Jan. 30, 1998	Aug. 1, 2014
S&P U.S. Treasury Inflation Protected Security Index	SPBDUSPT	Dec. 31, 2001	March 31, 2011

Source: S&P Dow Jones Indices LLC. Data as of May 31, 2016. Table is provided for illustrative purposes.

Exhibit 2: Inflation-Linked Bond Indices (cont.)			
Global Emerging Sovereign Inflation-Linked Indices			
Index Name	Ticker	First Value Date	Launch Date
S&P Global Emerging Sovereign Inflation-Linked Bond Index	SPFIEMIT	Nov. 2, 2001	March 18, 2015
S&P Global Emerging Sovereign Inflation-Linked Bond Index (USD)	SPFIEIUT	Nov. 2, 2001	March 18, 2015
S&P/BM&F Brazil Sovereign Inflation-Linked Bond Index	SPFIBRIT	Nov. 30, 2005	March 18, 2015
S&P/BM&F Brazil Sovereign Inflation-Linked Series B Bond Index	SPBMBRIT	March 31, 2006	Sept. 17, 2015
S&P Chile Sovereign Inflation-Linked Bond Index	SPFICLIT	Nov. 30, 2005	March 18, 2015
S&P Colombia Sovereign Inflation-Linked Bond Index	SPFICOIT	Feb. 27, 2004	March 18, 2015
S&P India Sovereign Inflation-Linked Bond Index	SPFIINIT	June 28, 2013	March 18, 2015
S&P/Volmer Mexico Government Inflation-Linked 1+ Month UDIBONOS Index	SPVIF0UT	Dec. 31, 2003	March 18, 2015
S&P Peru Sovereign Inflation-Linked Bond Index	SPFIPEIT	May 30, 2008	March 18, 2015
S&P Poland Sovereign Inflation-Linked Bond Index	SPFIPLIT	May 31, 2010	Aug. 20, 2014
S&P South Africa Sovereign Inflation-Linked Bond Index	SPFIIZAT	Nov. 1, 2001	Aug. 20, 2014
S&P Thailand Sovereign Inflation-Linked Bond Index	SPFITHIT	July 29, 2011	March 18, 2015
S&P Turkey Sovereign Inflation-Linked Bond Index	SPFITRIT	Feb. 28, 2007	Aug. 20, 2014
Source: S&P Dow Jones Indices LLC. Data as of May 31, 2016. Table is provided for illustrative purposes.			

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