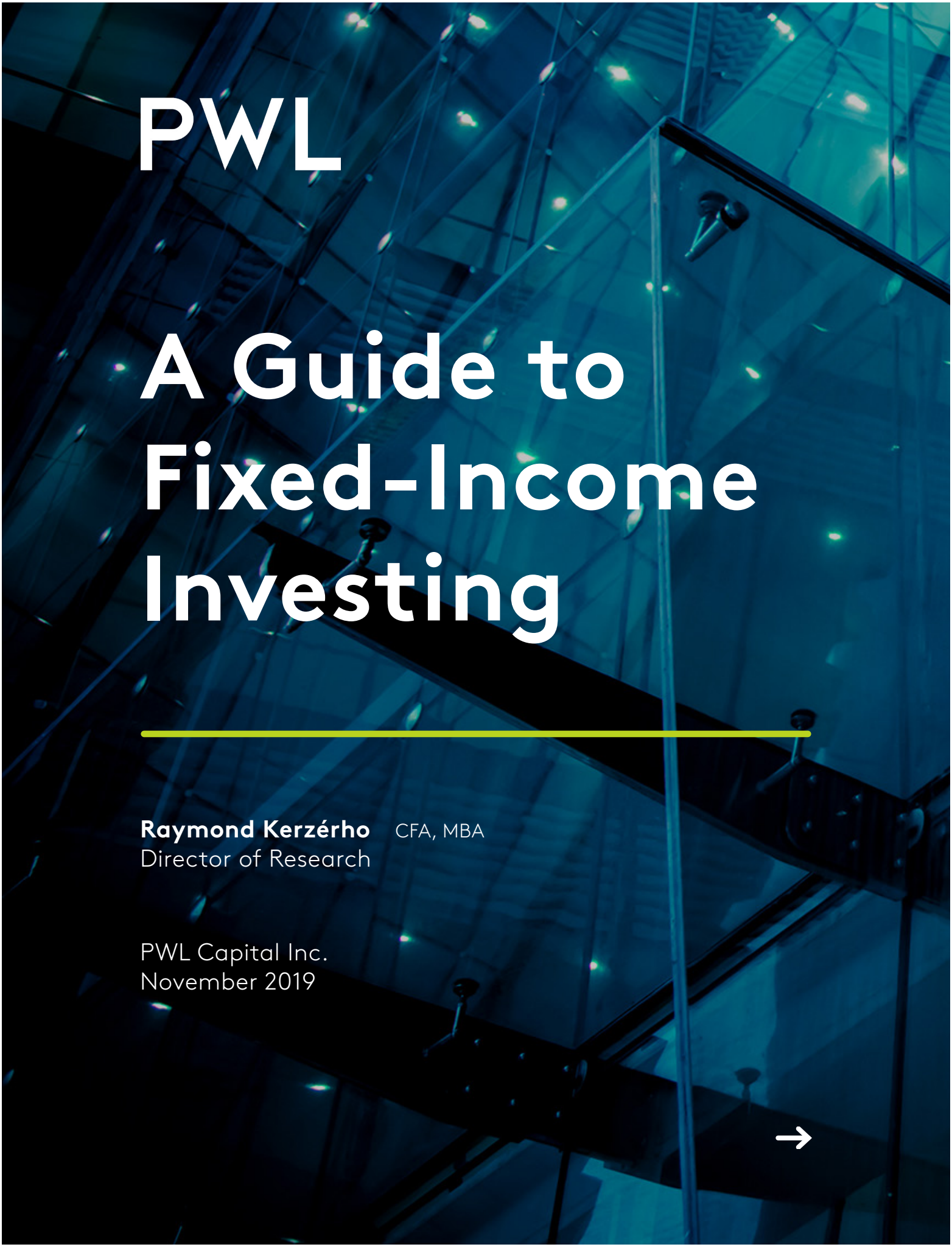

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# A Guide to Fixed-Income Investing

**Raymond Kerzérho** CFA, MBA
Director of Research

PWL Capital Inc.
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This report was written by Raymond Kerzérho, PWL Capital Inc. The ideas, opinions, and recommendations contained in this document are those of the author and do not necessarily represent the views of PWL Capital Inc.



Raymond Kerzérho, *Director of Research*, PWL Capital Inc.,"A Guide to Fixed-Income Investing"

For more information about this or other publications from PWL Capital, contact:
PWL Capital – Montreal, 3400 de Maisonneuve Ouest, Suite 1501, Montreal, Quebec H3Z 3B8
Tel 514-875-7566 • 1-800-875-7566 Fax 514-875-9611
info@pwlcapital.com

# 2. Bond Pricing

What drives the ups and downs in bond prices? What makes some bonds more volatile than others? What are the key indicators that bond investors track in order to make decisions? This section addresses the drivers of bond returns.

## a. Price/Yield Relationship

The coupon and maturity of a bond are set when it is issued and will remain the same for life. However, most bonds are not held to maturity by their initial holder. In order to make transactions possible, prices must be allowed to fluctuate. "Yield to maturity" is the market interest rate of a bond at a given point in time, taking into account its current price. Let's say an investor purchases a 10-year bond featuring a 3% coupon for a price of $95 (which means they are paying only 95% of its nominal value). The yield to maturity will then be more than 3%, since the investor paid less than the full face value to get the same income and, in addition, they pocket a 5% capital gain at maturity (100%–95%). The opposite is true for investors who pay $105 for the same bond. In general, bond prices and yields move in opposite directions. Table 1 below illustrates the price/yield relationship.

### Table 1: Yields on a 10-year bond with a 3% coupon at various price levels

| Coupon | Price | Yield to maturity |
|---|---|---|
| 3% | 95 (at 5% discount) | 3.60% |
| 3% | 100 (at par) | 3.00% |
| 3% | 105 (at 5% premium) | 2.43% |

Source: PWL Capital

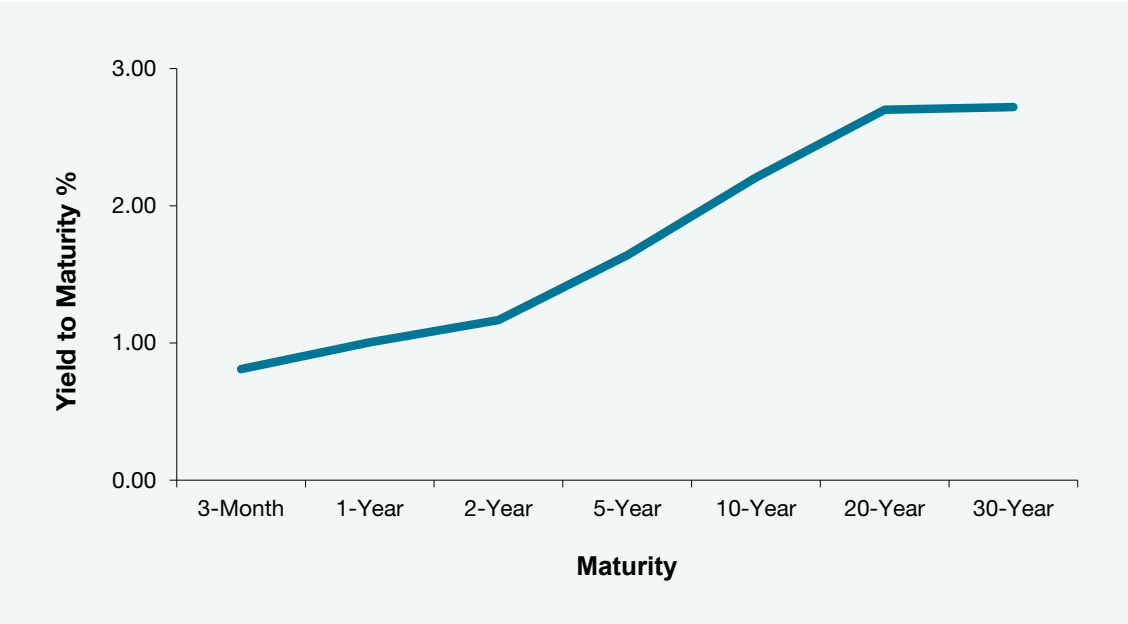
## b. Bond Duration and the Opportunity for Profit or Loss

Duration is a measure of the average maturity of a bond's interest and principal repayment. The duration of a bond is always shorter than its maturity, since a lot of the cash flow (coupon payments) generated by a bond occur before its maturity. For example, a 10-year bond will likely have a duration of 8 to 9 years. The longer is the bond's duration, the more profit or loss it can generate when its yield fluctuates: a security with a longer maturity represents a greater commitment from the investor; therefore, long-duration bonds are much more volatile than short ones.

## c. Yield Curve

The yield curve is a chart that depicts the yields for bonds from a same issuer but for various maturities. When experts discuss "the yield curve," they usually refer to the rates on top-quality government bonds. Most times, yields increase along with maturity. The longer the duration, the riskier the bond. As a result, it should command a higher yield. But on rare occasions, the yield curve will become flat or even inverted, meaning that longer-duration securities will carry a lower yield.

### Chart 2: Sample "Normal" Yield Curve




Source: PWL Capital

## d. Credit Ratings

When bond traders are making the decision of how much they are willing to pay for a bond, they will look at the yields of other bonds of similar maturity and quality. While bond investors are likely to make their own assessment of the creditworthiness of a particular issue, they will also pay attention to the credit ratings, which are letter codes issued by a bond rating agency. Credit ratings are illustrated in Table 2.

### Table 2: Credit Ratings


| | Investment-Grade | | | | Speculative-Grade | | | Distressed Debt | | Defaulted |
|---|---|---|---|---|---|---|---|---|---|---|
| S&P | AAA | AA | A | BBB | BB | B | CCC | CC | C | D |
| Moody's | Aaa | Aa | A | Baa | Ba | B | Caa | Ca | C | - |

Sources: Standard and Poor's, Moody's

While professional bond investors pay close attention to the credit ratings of corporate bonds, they are also fully aware that credit ratings are quite slow to adapt to changing business conditions. Rating agencies are reluctant to change ratings too quickly because the ratings need to be minimally stable to remain credible. Professionals watch bond issuers' stock prices as an early indicator in real time of a bond's financial health. A plunging stock price can sometimes (but not always) be indicative of a decline in the issuer's creditworthiness going forward.

## e. Sources of Bond Returns

Bond returns are calculated from the current coupon income and capital gains or losses. For example, a bond with a 3% coupon that is purchased at par at the beginning of the year and that appreciates to $105 by the end of the year has produced a return of (105-100+3)/100 = 8%.

This section has discussed how bond returns are generated. In addition to the current income, the capital appreciation or depreciation will have a key role in the bond's realized returns. These gains or losses in bond value are triggered by changes in the yield to maturity. The longer is the duration of a bond, the greater will be the profit or loss triggered by a given change in yield.

In the next section, we will discuss risk in fixed-income investing and the associated risk premiums.

# The Author

**Raymond Kerzérho** MBA, CFA
Director of Research

PWL Capital Inc.
www.pwlcapital.com/author/raymond-kerzerho
raymondk@pwlcapital.com

CONTACT RAYMOND

# PWL

www.pwlcapital.com


**PWL Montreal**
3400 de Maisonneuve O.
Suite 1501
Montreal, Quebec
H3Z 3B8

T 514.875.7566
1-800.875.7566
F 514.875.9611
montreal@pwlcapital.com
www.pwlcapital.com/montreal

**PWL Ottawa**
265 Carling Avenue,
8th Floor,
Ottawa, Ontario
K1S 2E1

**T** 613.237.5544
1-800.230.5544
**F** 613.237.5949
ottawa@pwlcapital.com
www.pwlcapital.com/ottawa

**PWL Toronto**
8 Wellington Street East
3rd Floor
Toronto, Ontario
M5E 1C5

**T** 416.203.0067
1-866.242.0203
**F** 416.203.0544
toronto@pwlcapital.com
www.pwlcapital.com/toronto

**PWL Waterloo**
20 Erb St. West
Suite 506
Waterloo, Ontario
N2L 1T2

**T** 519.880.0888
1-877.517.0888
**F** 519.880.9997
waterloo@pwlcapital.com
www.pwlcapital.com/waterloo