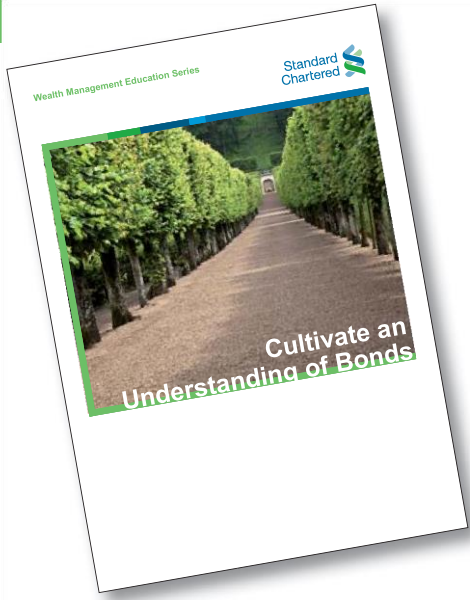


# Cultivate an Understanding of Bonds

Here for good



Managing your wealth well is like tending a beautiful formal garden – you need to start with good soil and a good set of tools. Just as good soil has the proper fertility to nourish a plant, having the right foundation in financial literacy should empower you to potentially cultivate a successful investment portfolio. ***Cultivate an Understanding of Bonds*** is part of our **financial education series** to help educate you on the fundamentals of investing as you tend your very own financial garden.





# What is a Bond?



If you are looking to build up a well-diversified portfolio, you will usually be advised to include both stocks and bonds among your investments. While stocks may offer you the potential for capital appreciation, bonds may provide a steady stream of investment income, and play an important role of potentially lowering your overall portfolio risks.

A bond is a debt security where the bond issuer (the borrower) issues the bond for purchase by the bondholder (the lender). It is also known as a fixed income security, as a bond usually gives the investor a regular or fixed return.

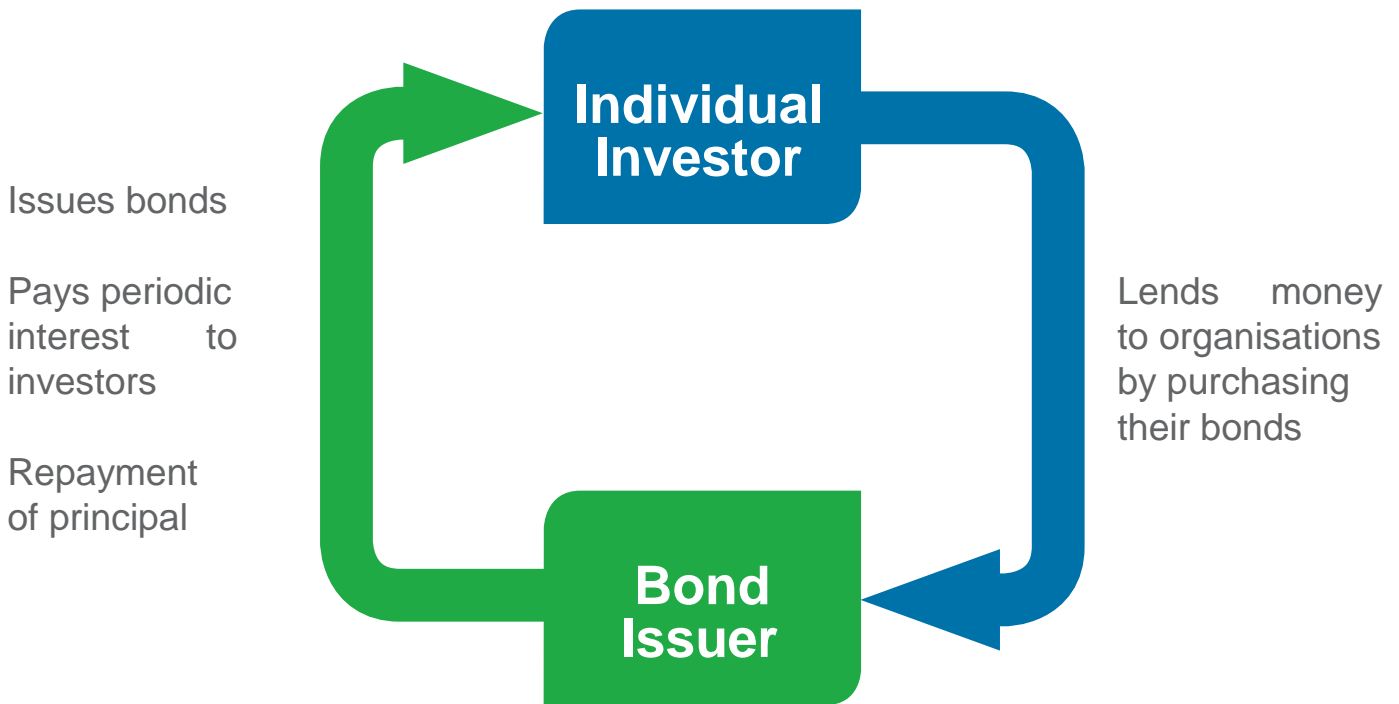
When you invest in a bond, you are essentially lending a sum of money to the bond issuer. In return, you are usually entitled to receive

**interest payments** (coupon) at scheduled intervals; and **capital repayment** of your initial principal amount at an agreed date in the future (maturity date).

Typical bond issuers include:

- Sovereign entities
- Governments/Government agencies
- Banks
- Non-bank financial institutions
- Corporations

## How do Bonds Work?



### Example of bond issuers and their funding needs

#### Corporations

- Cash for operating expenses
- Capital for growth and expansion
- Funds for corporate acquisitions

#### Government Treasury

- Cash for budgeted national expenditure
- Funds for repayment of national debt

#### States, Cities, Townships

- Cash for operating expenses
- Funds to build public infrastructure (for example, roads, housing, parks)



# What is Bond Quality?

# What is Bond Quality?

Before you make an investment decision to invest in a bond, it is important to consider the **quality** of the bond (or the creditworthiness of the issuer). You can do that by looking at its assigned bond rating. This is a credit rating given to the bond by specialized rating agencies, after they have reviewed the issuer’s financial condition and debt repayment ability.

Bonds assigned ratings above a certain threshold are considered **investment grade**, while bonds rated below the threshold are known as **sub-investment grade** or **high-yield bonds**.

## Credit Ratings by Specialized Rating Agencies

Grade/ Quality of Bond	Credit Rating Agencies		
	Moody's	Standard & Poor's	FITCH
Highest	Aaa	AAA	AAA
High	Aa	AA	AA
Upper Medium/ Medium	A Baa Baa3	A BBB BBB-	A BBB BBB-
Speculative/ Highly Speculative	Ba1 B Caa	BB+ B CCC CC C	BB+ B CCC CC C
Default	Ca	D	D

↑  
Investment Grade

↓  
Below  
Investment Grade  
(sub-investment grade  
or high-yield bonds)



# Which Bond is Suitable for You?



Depending on your risk appetite, when making your investment decision you may choose to invest in either an investment grade bond, or a high-yield bond.

An **investment grade bond** is a more secure investment and should give you a stable source of investment income.

A **high-yield bond** pays a relatively higher return but carries with it a higher risk of default – and will therefore require closer monitoring.

However, in all cases, the repayment of bonds is always subject to the creditworthiness of the particular issuer.



# What Types of Bonds are there?

### Bonds are differentiated by their varying payment features

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#### Fixed-rate bond

The interest or coupon rate of the bond is fixed for the entire term (tenor) of the bond. If the bond comes with an *embedded issuer call option*, the bond issuer may prepay the bond at certain pre-determined dates.

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#### Floating-rate bond

Unlike Fixed-rate bonds, the coupon or interest rate of a Floating-rate bond is variable. The interest rate is reset at each coupon payment date, in accordance with a predetermined interest rate index. As in the case for Fixed-rate bonds, *issuer call options* may also be embedded.

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#### Subordinated bond

This type of bond has a lower repayment priority than other bonds issued by the same issuer in the event of the liquidation or bankruptcy of the issuer. A subordinated bond has a lower credit rating because it carries higher risks but pays higher returns than other non-subordinated bonds of the same issuer. These bonds are usually issued by banks.

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#### Convertible bond

These bonds allow the bondholder and/or issuer to convert them into shares of common stocks/shares in the issuing corporation at a pre-determined price in the future when certain conversion criteria are fulfilled. Such bonds are usually issued by companies and tend to pay lower coupon rates than ordinary bonds of the issuer due to the attractiveness of the conversion feature.

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#### TIPS (Treasury Inflation Protected Securities)

These bonds peg their principal amount to the inflation index, therefore protecting the bondholder against inflation. Such bonds are issued by governments.

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#### Zero-coupon bond

Also known as a *discount* or *deep discount* bond, this bond is bought at a price lower than its face value, with the face value repaid at the time of maturity. It does not make periodic interest or coupon payments, hence the term *zero-coupon* bond.

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# Buy, Hold or Sell?

After you invest in a bond, you can choose to hold on to the bond until maturity. You will receive all the scheduled coupon payments in the intervening period and recover the principal repayment at the end of the term. The rate of return which you will earn from buying and holding the bond to maturity (expressed as a percentage) is referred to as the **bond yield**.

### Historical Bond Yields



Please note that historical returns are not an indication or guarantee of actual returns that may be achieved in any future investments.

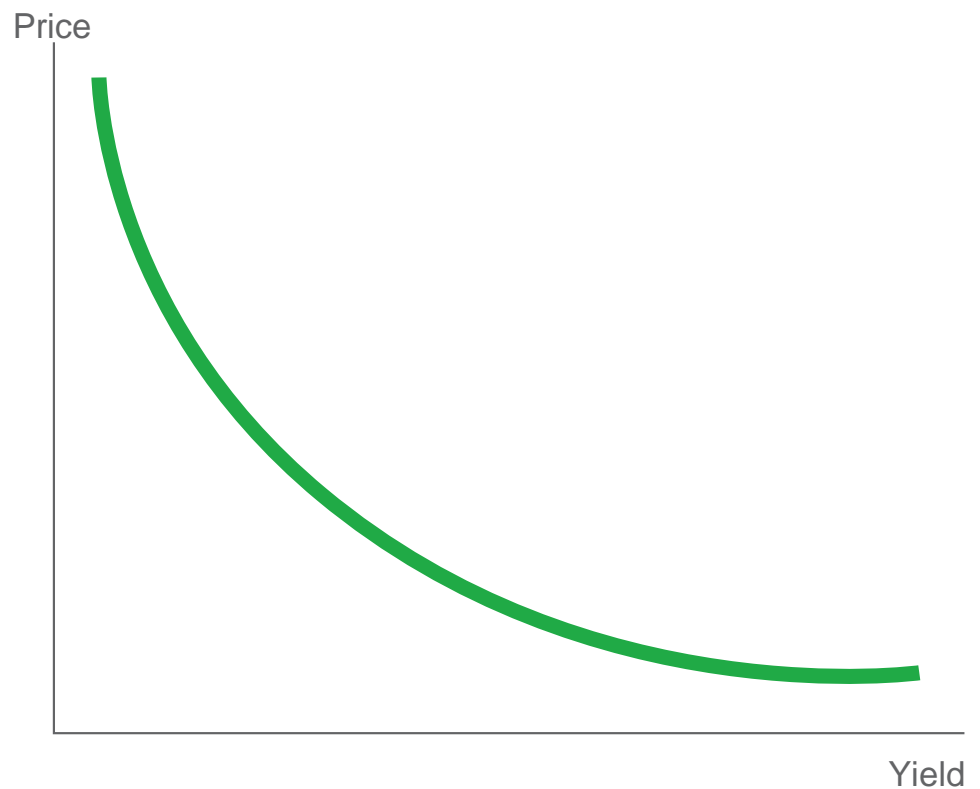
Alternatively, as bondholder you may choose to sell the bond in the open market prior to its maturity date. There are secondary bond markets, where - just as in the stock markets - you can monitor bond prices and trade them to try and realise **capital gains**. To do so, you will need to understand a key determinant of price movements in the bond market – **interest rates**.



# What is the Inverse Relationship?

## What is the Inverse Relationship?

There is typically an inverse relationship between **bond prices** and **interest rates**. That is, when interest rates rise, bond prices will tend to fall, and vice versa.



A simple way to understand this relationship is for you to look at various bonds (and their issuers) as competing recipients for your investment funds. When making your investment decision you will tend to invest in the option which earns you a higher return.

## What is the Inverse Relationship?

Consider a bond (Bond A) which is currently giving you a 5% rate of return



When the **interest rate goes up**, a newly issued bond (Bond B) will yield more than 5% to keep up with the market. The logical thing in this situation would be to sell the original Bond A and buy the new Bond B to earn a higher return. Such selling pressure on Bond A will depress the price of the bond, causing it to trend **downwards** – in the **opposite** direction of interest rates. Alternatively, you could also view it as Bond A having to lower its price to make itself a sufficiently attractive investment for investors to own it.



Conversely, when the **interest rate goes down**, Bond A will seem a more attractive investment when compared to the newer Bond B which is being issued at a lower yield. The buying interest for Bond A will start to push **up** the price of the bond – causing it again to move in the opposing direction from the interest rates.

As illustrated in the above example, bondholders may potentially benefit in an environment of falling interest rates as the price of their bond holdings will tend to rise.

Please note that this is an example only and any potential returns set out herein are not indicative of actual returns that may be achieved in any investments that you may decide to make.



## What is the Inverse Relationship?

### Example

On August 18, 2010, you buy a Company ABC bond for a nominal amount of US\$100,000. It has a fixed coupon of 4.50% p.a. twice a year and matures on September 21, 2015.

This means every March 21 and September 21, a fixed coupon payment of US\$2,250  $[(4.5\% \times \$100,000)/2]$  will be paid out.

The bond purchase settles 3 business days later on August 23, 2010. The current offer of the bond is at a price of US\$106.80 or 3.044% yield to maturity.

### You have to pay:

Principal payable (US\$100,000 X US\$106.80/Par Value of US\$100)	= US\$ 106,800
Accrued Interest <sup>^</sup> for 152 days (4.5% X US\$100,000 X 152/360days)	= US\$ 1,900
<b>Total</b>	<b>= US\$108,700</b>

<sup>^</sup> Seller has the right to collect interest accrued since the last coupon was paid. ie. interest accumulated for 152 days between the last coupon date (March 21, 2010) and settlement date (August 23, 2010).

If you decide to hold the bond to maturity, ie. September 21, 2015, you will not be subject to the price fluctuations of the bond. If the issuer does not default, you will receive the full nominal amount of the bond, that is, US\$100,000 plus the fixed coupon paid twice a year.

## What is the Inverse Relationship?

However, you may decide to sell the bond before maturity.

### Scenario

#### 1 Interest Rate Falls = Bond Price Rises

One year later, interest rates fall, and you decide to sell the bonds on September 12, 2011 at a yield of 2.83% or a price of US\$107.61. Settlement takes place 3 business days later on September 15, 2011.

##### You will receive:

Principal due (US\$100,000 X US\$107.61)/ Par Value of US\$100	= US\$	107,610
Accrued Interest <sup>#</sup> for 174 days (4.5% X US\$100,000 X 174/360days)	= US\$	2,175
<b>Total</b>	<b>= US\$</b>	<b>109,785</b>
Gain from Principal (US\$107,610 – US\$106,800)	= US\$	810
Coupon paid on September 21, 2010 and 2011 (US\$100,000 x 4.5%)	= US\$	4,500
Accrued Interest earned from last coupon	= US\$	2,175 payment date <sup>#</sup>
<b>Total Returns</b>	<b>= US\$</b>	<b>7,485</b>

<sup>#</sup> Seller has the right to collect interest accrued since the last coupon was paid. i.e. interest accumulated for 174 days between the last coupon date (March 21, 2011) and settlement date (September 15, 2011).

## What is the Inverse Relationship?

### Scenario

# 2

#### Interest Rate Rises = Bond Price Falls

One year later, interest rates rise, and you decide to sell the bonds at a yield of 3.20%p.a. or a price of US\$105.98. Settlement takes place 3 business days later on September 15, 2011.

#### You will receive:

Principal due = US\$ 105,980  
(US\$100,000 X US\$105.98)/Par value of US\$100

Accrued Interest for 174<sup>#</sup> days = US\$ 2,175  
(4.5% X US\$100,000 X 174/360)

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**Total** = **US\$108,155**

Loss of Principal = US\$ (820)

Coupon paid on September 30, 2010 = US\$ 4,500 and March 21, 2011

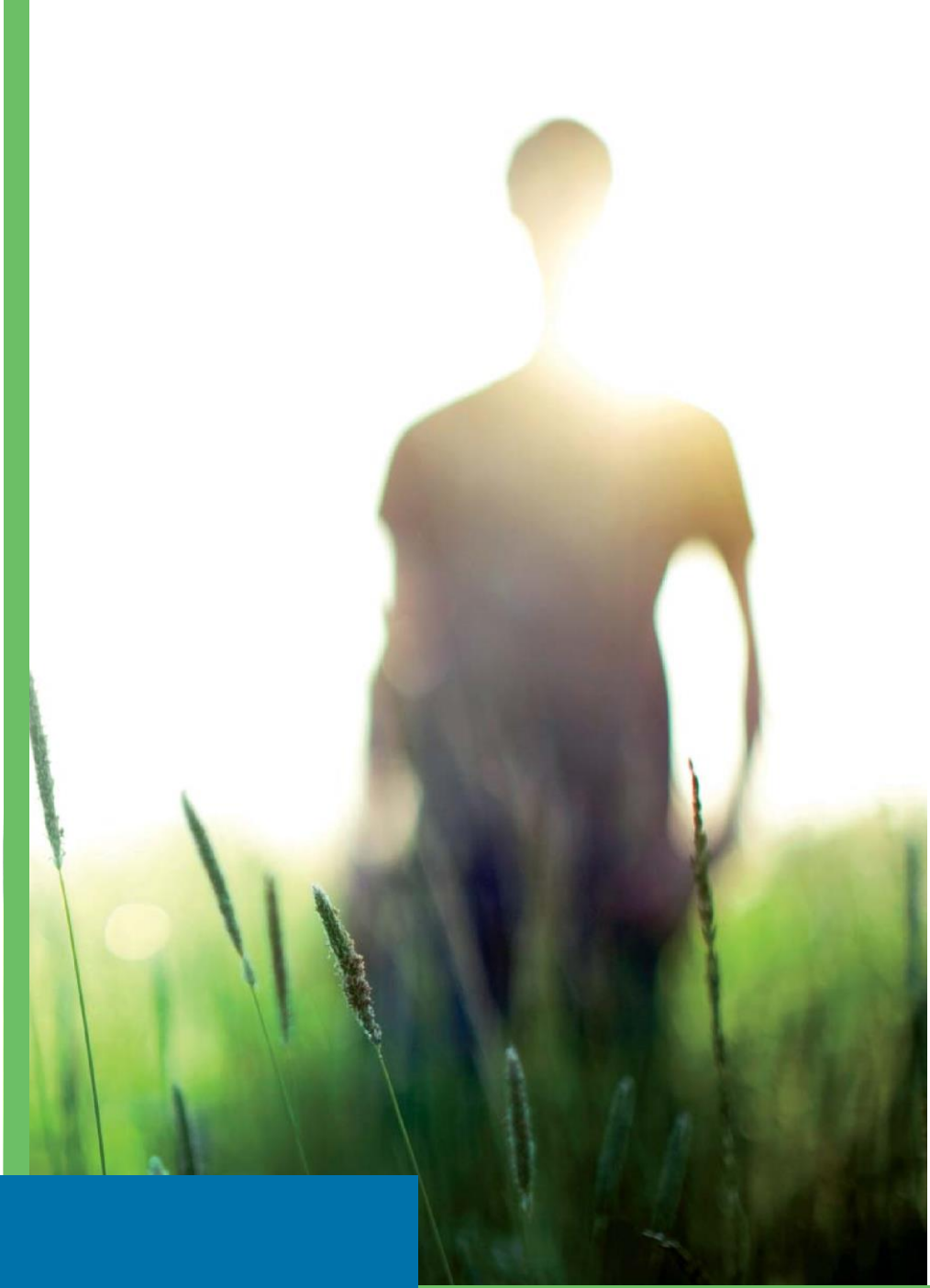
Accrued interest earned from last coupon date<sup>#</sup> = US\$ 2,175

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**Net Returns** = **US\$ 5,855**

<sup>#</sup> Seller has the right to collect interest accrued since the last coupon was paid. i.e. interest accumulated for 174 days between the last coupon date (March 21, 2011) and settlement date (September 15, 2011).

Please note that these are examples only and any potential returns set out herein are not indicative of actual returns that may be achieved in any investments that you may decide to make.



# Why Invest in Bonds?

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### 1. Higher returns than bank deposits

Bonds typically pay a higher yield (return) than bank deposits of a similar term (tenor).

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### 2. Regular income

Bond issuers are bound by the terms of the bond to pay out regular coupon income to bondholders (subject to credit risk of the issuer).

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### 3. Hedge against inflation

With proper bond selection, you may potentially earn an investment return which keeps pace with or even exceed the inflation rate.

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### 4. Capital appreciation

Like all instruments traded in the secondary market, the price of bonds can appreciate (or depreciate) over and above (or below) the initial purchase price, and allow you to realise capital gains (or capital losses).

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### Did you know?

If you hold a bond to maturity, your pay-out will not be affected by the interest rate fluctuations during the holding period. So, in this case, as long as the bond's credit



# What are the Risks?

## What are the Risks?

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### **Credit or Default risk**

This is the risk that the bond issuer or borrower is unable to meet the coupon or principal payments on any outstanding bonds or debt (not just the bonds you may be holding) when they fall due (for example, due to bankruptcy or insolvency), and go into default.

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### **Interest rate risk**

Interest rates and bond prices are inversely related. Should interest rates rise, the price of your bond will tend to fall (and vice versa). The longer the time to maturity of a bond, the greater the interest rate risk.

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### **Foreign Exchange risk**

Some bonds are denominated (and the issuer's payments made) in a foreign currency, which may fluctuate against your home currency. The impact of such foreign exchange movements may offset any interest or capital returns you may receive from the bond investment.

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### **Liquidity risk**

This is the risk of having to sell a bond at discounted prices due to the lack of a ready market or buyer. When a bond has a low credit rating (for example, due to the fact that it is part of a small issue or that the issuer's financial situation is questionable), the liquidity risk will tend to be higher.

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### **Event risk**

Events such as leveraged buyouts, mergers, or regulatory changes may adversely affect both (i) the bond issuer's ability to make payments on the bond, and (ii) the price of the bond.

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### **Sovereign risk**

Payment of the bond may be affected by the political and economic events in the country of the issuer of the bond. For example, the issuer may be forced to make payments in the local currency of the issuer's country instead of the original currency of the bond.

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# Notes

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Do you have a question on what you have just read?

Would you like to have a further discussion on this subject?

Contact your Relationship Manager, or any of our Standard Chartered Bank locations closest to you for more information.



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