CANTOR Fitzgerald

Investment Guide to BONDS

An investor's guide to the fundamentals of the bond market, including pricing and interest rates, the risks of investing in bonds and the traditional role of bonds in an investment portfolio.



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What is a Bond?

The bond market is by far the largest securities market in the world, providing investors with virtually limitless investment options. Many investors are familiar with aspects of the market, but as the number of new products grows, even a bond expert is challenged to keep pace.

First and foremost, a bond is a loan that the bond purchaser, or bondholder, makes to the bond issuer. Governments, corporations and municipalities issue bonds when they need capital. If you buy a government bond, you're lending the government money. If you buy a corporate bond, you're lending the corporation money. Like a loan, a bond pays interest periodically and repays the principal at a stated time/date.

The price of most bonds is set so that face value/par value per unit is repaid on the maturity date. Between the issue date and the maturity/redemption date the bond price can vary depending on many factors. One such factor affecting the price is interest rates at the time. If, for example, the bond pays an annual coupon of 5% and interest rates are lower than this, investors will find the bond income stream attractive and will be prepared to pay a higher price for it.

A bond maturity refers to the specific future date on which the principal invested will be repaid. Generally bond maturities range from 1 year to 30 years and are frequently categorised as:

Short Term Bonds: Maturing in less than 5 Years.

Medium Term Bonds: Maturing in 5 - 10 years.

Long Term Bonds: Maturing in more than 10 years.

How long it takes for a bond to reach maturity can play an important role in the amount of risk as well as the potential return an investor can expect. A €1 million bond repaid in five years is typically regarded as less risky than the same bond repaid over 30 years because many factors can have a negative impact on the issuer's ability to pay bondholders over a 30-year period. The additional risk incurred by a longer maturity bond has a direct relation to the interest rate, or coupon, the issuer must pay on the bond. In other words, an issuer will pay a higher interest rate for a long-term bond. An investor therefore will potentially earn greater returns on longer-term bonds, but in exchange for that return, the investor incurs additional risk.

Every bond also carries some risk that the issuer will "default", or fail to fully repay the loan. Independent credit rating services assess the default risk of most bond issuers and publish credit ratings in major financial newspapers. These ratings not only help investors evaluate risk but also help determine the interest rates on individual bonds. An issuer with a high credit rating will pay a lower interest rate than one with a low credit rating. Again, investors who purchase bonds with low credit ratings can potentially earn higher returns, but they must bear the additional risk of default by the bond issuer.

WARNING: The value of your investment may go down as well as up and you may lose some or all of the money you invest.

WARNING: Past performance is not a reliable guide to future performance.

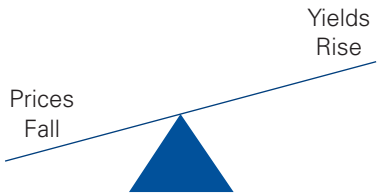
WARNING: Investments denominated in foreign currencies are subject to fluctuations in exchange rates, which may have an adverse effect on the value of investments.

What determines the price of a Bond in the open market?

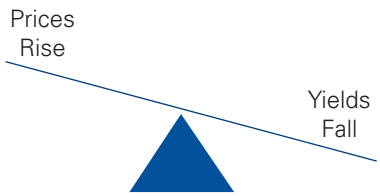
Bonds can be traded in the open market after they are issued. It's price in the marketplace will fluctuate depending on the particular terms of the bond as well as general market conditions, including prevailing interest rates, the bond's credit rating and other economic or corporate factors. When listed on the open market, a bond's price and yield determine its value. Obviously, a bond must have a price at which it can be bought and sold. A bond's yield is the actual annual return an investor can expect if the bond is held to maturity. Yield is derived from a combination of the purchase price of the bond and the coupon.

A bond's price always moves in the opposite direction of its yield, as illustrated below. The key to understanding this critical feature of the bond market is to recognize that a bond's price reflects the value of the income that it provides through its regular interest payments, or coupon payments.

If interest rates rise...



If interest rates fall...



Understanding Bond Market Prices

In the market, bond prices are quoted as a percent of the bond's face value. The easiest way to understand bond prices is to add a zero to the price quoted in the market.

For example, if a bond is quoted at '99' in the market, the price is €990 for every €1,000 of face value and the bond is said to be trading at a **'discount'**.

If the bond is trading at '101', it costs €1,010 for every €1,000 of face value and the bond is said to be trading at a **'premium'.**

If the bond is trading at 100, it costs €1,000 for every €1,000 of face value and is said to be trading at **'par'**.

Another term you might hear is **'par value',** which is simply another way of saying face value.

Government Bonds

Broadly speaking, government bonds and corporate bonds remain the largest sectors of the bond market, but there are a growing number of subcategories within these broad groups. There are also large segments of the market, such as mortgage-backed and asset-backed securities, which do not fall easily into either category. Here's what you need to know about the major sectors of the bond market:

Government Bonds

A government bond is a bond issued by a national government usually in the country's own currency. They have long been considered the most secure bonds, as governments have many tools to find money to repay their own bonds, including raising taxes and "printing " money. However it is a mistake to assume all government bonds are risk-free. A number of emerging market governments have defaulted on their bonds in the past.

All bonds carry a credit rating which is an important tool in measuring the credit worthiness or risk of default on a bond.

Irish Treasury, UK Gilts, US Treasuries* and German Bunds are all examples of government bonds.

Index-linked bonds are bonds whose annual coupon and eventual capital value or repayment are linked to the Retail Price Inflation Index. Over their life they offer investors the certainty of preserving the value of their capital and income from the effects of inflation.

*Government of Canada Bonds (GoC's), Japanese Government Bonds (JGB's), French OAT's

Government Bonds

RATINGS	ISSUER	COUPON	MATURITY
AA-	Irish Treasury	0.20%	15/05/2027
AAA	German Treasury	1.30%	15/10/2027
AAA	Dutch Treasury	0.75%	15/07/2027
AA+	US Treasury	4.13%	30/09/2027

Source: Bloomberg, October 2022

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Corporate Bonds

The next largest segment of the bond market is corporate bonds. Corporations borrow money in the bond market to expand operations or fund new business ventures. The risk default in corporate bonds is typically reflected in a higher yield than government bonds over the same period. Corporate bonds fall into two broad categories: investment-grade and speculative-grade (also known as high yield or "junk") bonds. Speculative-grade bonds are issued by companies perceived to have a lower level of credit quality and higher default risk compared to more highly rated, investment-grade companies. Within these two broad categories, corporate bonds have a wide range of ratings, reflecting the fact that the financial health of issuers can vary significantly (see table).

Speculative-grade bonds tend to be issued by newer companies, companies that are in a particularly competitive or volatile sector, or companies with troubling fundamentals. While a speculative-grade credit rating indicates a higher default probability, higher coupons on these bonds often compensate for the higher risk. Ratings can be downgraded if the credit quality of the issuer deteriorates or upgraded if fundamentals improve.

Covered bonds are corporate bonds with an important enhancement— they have recourse to a pool of underlying assets that "covers" the bond if the issuer (usually a financial institution) becomes insolvent. They are the highest ranking debt of a financial institution and are rated higher than senior or subordinated debt. The underlying pool is typically a pool of mortgages or public sector loans. The issuer must continually ensure that the pool backs the covered bond, removing non-performing loans and replacing them with good loans. They are usually over-collateralised, meaning the value of the pool is greater than the value of the bonds, providing an additional element of security.

European Corporate Bonds

RATINGS	ISSUER	COUPON	MATURITY
" AA-"	HSBC	1.38%	15/01/2026
BBB	Ryanair	0.88%	25/05/2026
AA+	Apple	2.00%	17/09/2027

Source: Bloomberg, October 2022

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The role of Bonds in portfolio management

Investors have traditionally held bonds in their portfolio for three reasons: income, diversification, and protection against economic weakness or deflation. Let's look at each of these in more detail.

Income/Yield

Most bonds provide the investor with "fixed" income. On a set schedule, perhaps quarterly, twice a year or annually, the bond issuer sends the bondholder an interest payment.

Diversification

Diversification means not "putting all of your eggs in one basket." A stock market investor faces the risk that the stock market will decline and the value of his portfolio may decline. To offset this risk, investors have long turned to the bond market because the performance of stocks and bonds is often non-correlated. Although diversification does not ensure against loss, an investor can diversify a portfolio across different asset classes that perform independently in market cycles to reduce the risk of low, or even negative, returns.

Protection against Economic Slowdown or Deflation

Bonds can help protect investors against an economic slowdown for several reasons. Recall that the price of a bond depends on how much investors value the income that bonds provide. Most bonds pay a fixed income that doesn't change. When the prices of goods and services are rising, an economic condition known as "inflation," a bond's fixed income becomes less attractive.

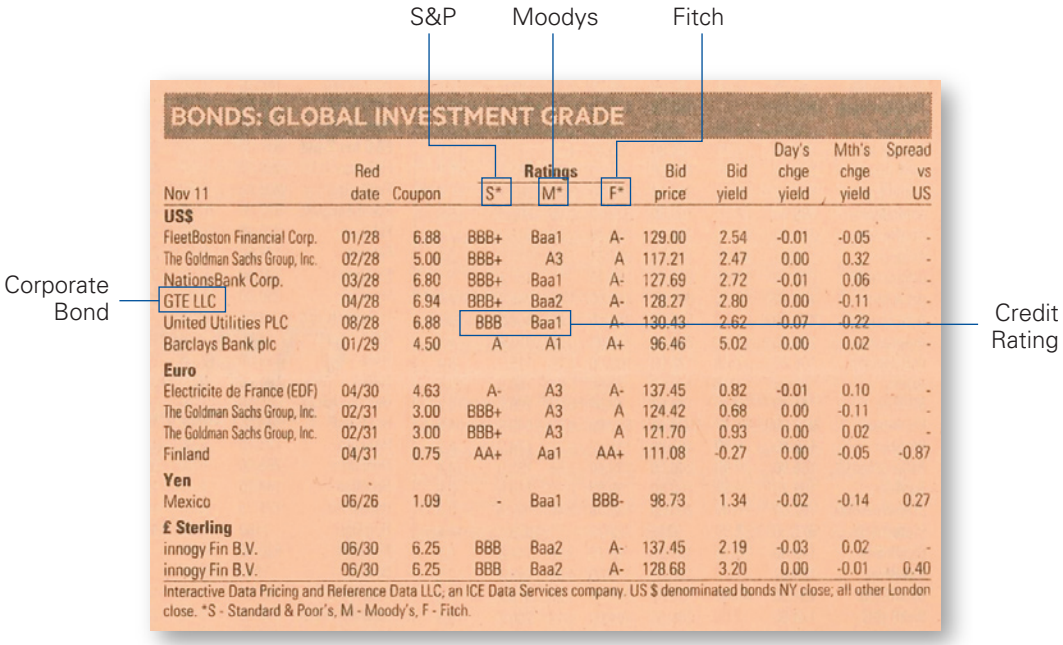
Bonds offer investors fixed-income payments, portfolio diversification and a hedge against an economic slowdown. As the largest securities market available, bonds offer a plethora of choices for investors seeking price protection. The unique characteristics of the many bond issuers in today's market create opportunities for investors with a broad spectrum of risk/return objectives.

As bonds are all about security and predictability, the selection criteria you use when choosing them are substantially different from those required for equities. They should be informed exclusively by both your opinion concerning future inflation and interest rates, and your personal tax position. So, if you expect interest rates to rise, don't consider bonds beyond the short and medium ranges - otherwise you risk locking into an investment paying interest below that available in a deposit account, and you would also sustain a capital loss unless you held the bond to redemption. Conversely, if you anticipate deflation, then consider a longer-term bond.

What is a credit rating?

Credit Risk/Credit Rating

Every bond also carries some risk that the issuer will "default", or fail to fully repay the loan. Independent credit rating services assess the default risk of most bond issuers and publish their "credit ratings" in major financial newspapers. Credit ratings are forward looking opinions about the ability and willingness of the issuer, whether country or corporate, to meet its financial obligations on time and in full. These ratings not only help investors evaluate risk but also help determine the interest rates on individual bonds. An issuer with a high credit rating will generally pay a lower interest rate on their bonds than an issuer with a low credit rating.



BONDS: GLOBAL INVESTMENT GRADE

Nov 11	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
US$										
FleetBoston Financial Corp.	01/28	6.88	BBB+	Baa1	A-	129.00	2.54	-0.01	-0.05	-
The Goldman Sachs Group, Inc.	02/28	5.00	BBB+	A3	A	117.21	2.47	0.00	0.32	-
NationsBank Corp.	03/28	6.80	BBB+	Baa1	A-	127.69	2.72	-0.01	0.06	-
GTE LLC	04/28	6.94	BBB+	Baa2	A-	128.27	2.80	0.00	-0.11	-
United Utilities PLC	08/28	6.88	BBB	Baa1	A-	130.43	2.62	-0.07	0.22	-
Barclays Bank plc	01/29	4.50	A	A1	A+	96.46	5.02	0.00	0.02	-
Euro										
Electricite de France (EDF)	04/30	4.63	A-	A3	A-	137.45	0.82	-0.01	0.10	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	124.42	0.68	0.00	-0.11	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	121.70	0.93	0.00	0.02	-
Finland	04/31	0.75	AA+	Aa1	AA+	111.08	-0.27	0.00	-0.05	-0.87
Yen										
Mexico	06/26	1.09	-	Baa1	BBB-	98.73	1.34	-0.02	-0.14	0.27
£ Sterling										
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	137.45	2.19	-0.03	0.02	-
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	128.68	3.20	0.00	-0.01	0.40

Interactive Data Pricing and Reference Data LLC; an ICE Data Services company. US $ denominated bonds NY close; all other London close. *S - Standard & Poor's, M - Moody's, F - Fitch.

Source: Financial Times.

There are three credit ratings agencies, Standard and Poor's, Fitch and Moody's. Each will issue their own rating as seen above which may not be the same. In the attached for example, GE capital get a AA+ rating from S&P, A1 from Moody's and is not rated by Fitch.

What do the Credit Rating letters mean?

CREDIT RISK	MOODYS	STANDARD & POORS	FITCH
Investment Grade			
Highest Quality	Aaa	AAA	AAA
High Quality (very strong)	Aa	AA	AA
Upper medium grade (strong)	A	A	A
Medium grade	Baa	BBB	BBB
Below Investment Grade			
Lower medium Grade (Somewhat speculative)	Ba	BB	BB
Low grade (Speculative)	B	B	B
Poor Quality (May default)	Caa	CCC	CCC
Most speculative	Ca	CC	CC
No interest being paid or bankruptcy petition filed	C	C	C
In default	D	D	D

Source: Moody's, Standard & Poor's, Fitch

Why do Credit Ratings change?

Each agency uses its own methodology for measuring creditworthiness. These can change depending on shifts or changes in the economy, business environment or more narrowly focused on issues affecting a specific industry, country or individual debt issue.

WARNING: The return on your investment is linked to the solvency of the issuer and guarantor. If both were to default, you will lose some or all of your investment.

How to read a Bond Table

Irish Government Bonds

Bond	Price	Yield
IRISH 3.9 20/03/23	100.93	1.48%
IRISH 3.4 18/03/24	101.71	2.13%
IRISH 5.4 13/03/25	107.56	2.10%
IRISH 1.0 15/05/26	96.31	2.09%
IRISH 0.2 15/05/27	91.32	2.23%
IRISH 0.9 15/05/28	92.66	2.33%
IRISH 1.1 15/05/29	92.64	2.34%
IRISH 2.4 15/05/30	100.19	2.37%
IRISH 0.2 18/10/30	84.04	2.43%
IRISH 1.35 18/03/31	92.35	2.37%
IRISH 0 18/10/31	80.09	2.51%

The Issuer

The Country or Company that is issuing the bond (Irish Government in this example).

Coupon

The Coupon or fixed interest rate that the issuer pays to the lender.

Maturity Date

This is the date on which the bond matures and the borrower repays the investor their principal amount.

Bid Price

The price someone is willing to pay for the bond. It is quoted in relation to 100 no matter what the par value is.

Yield

The yield indicates the annual return in % until the bond matures.

Source: Bloomberg

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Income Schedule

Irish Government Bond	
Maturity Date	2027
Fixed Annual Coupon	0.20%
Current Price	0.916
Yield to Maturity*	2.17%
Nominal units purchased	100,000
Purchase price	0.916
Accrued interest paid**	€94.25
Dealing Commission (0.50%)	€458
Total Investment Amount	**€92,152**
Annual Income Received	
2023	€ 200
2024	€ 200
2025	€ 200
2026	€ 200
2027	€ 200
Gross Income Received	€ 1,000
Capital returned at maturity	€ 100,000
Capital Gain at maturity	€ 7,848
Total Investment Return	**€ 8,848**

Irish Government Bond	
Maturity Date	2032
Fixed Annual Coupon	0.35%
Current Price	0.8041
Yield to Maturity*	2.61%
Nominal units purchased	100,000
Purchase price	0.8041
Accrued interest paid**	€15.34
Dealing Commission (0.50%)	€402
Total Investment Amount	**€80,827**
Annual Income Received	
2023	€ 350
2024	€ 350
2025	€ 350
2026	€ 350
2027	€ 350
2028	€ 350
2029	€ 350
2030	€ 350
2031	€ 350
2032	€ 350
Gross Income Received	€ 3,500
Capital returned at maturity	€ 100,000
Capital Gain at maturity	€ 19,173
Total Investment Return	**€ 22,673**

Notes:

***Yield to Maturity:** is the annual rate of return anticipated on a bond if held to maturity.

The Calculation takes into account the bond's current market price, redemption price of 100c, annual coupon interest rate and time to maturity.

Annual Cantor Fitzgerald Account Fees will apply in addition to the above commission charges.

****Accrued Interest Paid:** The interest that has accumulated on the bond since the last interest payment, but not including the settlement date.

Taxation on Irish Government bonds is outlined in the "Tax Matters" taxation guide available from your Cantor Fitzgerald portfolio manager.

Prices and Yields as at 1/11/22 - source Bloomberg.

Tax

Tax Implications

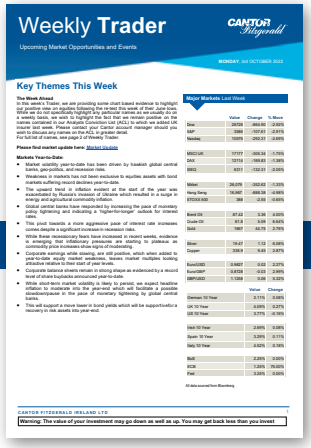
- Government Stamp Duty is not applicable on the purchase of either government or corporate bonds.
- Government bonds are exempt from Capital Gains Tax.
- Repayment of corporate bonds at maturity can trigger a capital gain/loss.
- Income received from both corporate and government bonds is subject to tax.

Cantor Fitzgerald does not provide tax advice. A copy of our *Investment Tax Guidelines* (produced in partnership with Grant Thornton) can be made available through your Cantor Fitzgerald broker or portfolio manager.

Monitoring Your Investment

Weekly Bond Market Commentary

We issue a weekly Bond Market Commentary as part of our Weekly Trader which issues every Monday and can be made available to you on request.


Weekly Trader

Upcoming Market Opportunities and Events

Key Themes This Week



Your Portfolio At Your Fingertips

Our client portal can be accessed directly through our website, allowing you to:

- Access and track all of your account information through a single login
- View information updates in the Notifications Centre
- Download documents at a time that is suitable to you

Frequently Asked Questions

What commission is payable on Bonds?

€0 - €100,000 0.50%

Balance 0.50%

Minimum €115

Are there any other charges in addition to the dealing commission on each trade?

Yes, an annual account fee applies. Please see our rate card for further details.

Where is the bond investment held?

Your Government or Corporate Bond investment is held in a nominee account (in the client name) with Cantor Fitzgerald. Irish Government Bonds can also be lodged with the Irish Central Bank directly.

What is the minimum investment amount when investing in Bonds?

Government Bonds = 1,000 Units, Corporate Bonds = 50,000 (can also be higher).

Is stamp duty payable on Government or Corporate Bonds?

No.

Is commission payable when the bond matures?

No commission is payable on maturity, the proceeds will be paid back into the client's Cantor Fitzgerald dealing account.

If I sell a Bond before maturity date what is my risk?

The bond price will move up or down on a daily basis. The risk in selling before maturity date is that the price could be lower and you could suffer a capital loss on your investment.

In the event that something happens to Cantor Fitzgerald what happens my investment?

Your investment is held with Pershing Securities International, who is a division of Bank of New York, one of the strongest financial institutions in the US. Your assets are completely segregated from Cantor Fitzgerald.

What type of clients can purchase Government or Corporate Bonds?

Bonds can be purchased in a Personal, Pension, Aviva SDIO, Corporate, Charity and ARF/AMRF capacity.

How can the price of a Government or Corporate Bond be monitored?

All Cantor Fitzgerald clients receive online access to their account. Government and Corporate Bond prices are updated weekly. We issue a weekly Bond Market Commentary as part of our Weekly Trader which issues every Monday and can be made available to you on request.

Is there Currency risk associated with certain Government or Corporate Bonds?

Yes, all non Euro denominated Government or Corporate Bonds will leave investors open to foreign exchange risk on any annual income received, the potential maturity proceeds and any sale proceeds should the bond be sold prior to maturity. Investors should speak to their broker prior to considering non Euro denominated Government or Corporate Bonds.

Definitions

Face Value/Nominal: The value of a bond as stated on the actual security. Also the amount that will be returned to the bond holder when the bond reaches 'maturity'.

Coupon: The stated interest rate on a bond when it is issued. In the U.K., most coupons are paid twice a year while annual payments are more common in Europe.

Coupon Types:

FIXED RATE: pays an absolute coupon rate over a specified period of time.

FLOATING RATE: Pays a coupon that varies according to the underlying benchmarks movement.

ZERO COUPON: Pays no coupon but is issued at a deep discount to par and will pay par at maturity.

Redemption Types:

CALLABLE: Gives the bond issuer the right to redeem the bond at an earlier date to maturity date.

CONVERTIBLE: Gives bond holders the right to convert their bond into a predetermined number of shares in the company on a predetermined date or dates.

Maturity: The amount of time before the bond repayment is due. A bond with a '10-year maturity' is repaid by the issuer in the tenth year.

Default: Default occurs when a bond issuer fails to make full payments on the bond (either the coupon or the face value). Default is usually the result of bankruptcy.

Price: The market price of a bond is the present value of its future cash flows, including coupon payments and principal. Bond prices are usually quoted as a percentage of the bond's face value.

Yield: The term 'yield' usually refers to yield-to maturity, which is the average annual return on a bond if held to maturity. Another term, current yield, refers to a bond's annual interest income.

Running Yield: The annual income from an investment divided by its current market value.

Gross Redemption Yield: The total yield from holding a bond, including the income and capital gain/loss for the whole period up to the date of maturity.

Basis Point: A basis point is 1/100 of a percent, i.e., 100 basis points equals one percent. Changes in bond yields are often quoted in basis points. For example, a drop in bond yields from 5% to 4.5% would be a 50 basis point decline. Returns can also be quoted in basis points.

Credit Spread: Credit spreads reflect the additional return investors require to take on more credit risk. Bonds with lower credit ratings have larger credit spreads. For example, a corporate bond quoted at a credit spread of 100 basis points means investors are requiring 100 basis points of additional yield to buy that bond rather than a riskfree alternative such as a government bond.

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