



G&T TRADER

# Beginner's Guide to Bonds

Chapter 1.1 - 1.4

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## Bonds

### Chapter 1.1 / A Basic Description

Welcome to this first chapter on Bonds which will give a brief introduction to the history of bonds and explain what they are used for.

If you are already familiar with the basics of bonds, we recommend that you view the next chapter, chapter 2, where we will take you through the key terminology and phrases used when trading bonds.

#### What is a Bond?

In essence, a bond is simply an IOU, where the borrower – in other words, the issuer – borrows money from a lender – in other words, the investor. Bonds are typically issued by governments, public entities and companies. As a financial instrument, they have been around for millennia.

The main reason why an issuer will choose to issue a bond – rather than borrow the money directly from a bank – is that the amount the issuer needs to borrow is larger than the amount they could borrow from a single bank. So the issuer borrows the money by issuing a bond. With a bond, multiple investors each lend the issuer a fraction of the total issued amount. Also, for many large corporates, it makes sense to borrow directly from investors, instead of a bank. It is both cheaper and more efficient.

A key difference between an IOU between two individuals and a bond is that the bond is transferable and has some standardised definitions and terminologies. These enable the bond to be traded easily between investors after it has been issued.

As with any other debt, borrowing money by issuing a bond doesn't come free. The issuer will pay interest on the bond – also known as the coupon – at fixed intervals to the investor.

Furthermore, a bond also has a date at which the amount borrowed will be paid back to the investor. This date is known as the maturity date.

#### Who or what issue Bonds?

Many companies that issue bonds have also issued stocks (Shares). A key difference between stocks and bonds is that bonds are debt whereas stocks are equity.

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The implications of this difference are as follows:

1. As a bond investor, you become a creditor to the issuer. This means that you would have a higher claim on the issuer's assets than stockholders would. So, in case of bankruptcy, the bondholders would receive payment before the stockholders.
2. Because bondholders are simply creditors to the issuer, they don't have voting rights. Neither do they have the right to receive any dividends paid by the issuer to the stockholders.

Therefore, bondholders are in a better position versus the issuer in case of bankruptcy. But they don't have the upside potential that stockholders have in the event that the issuer performs better than expected by the market. These include being able to sell the stock at a higher price than it was bought for and being able to receive dividends from the issuer.

Even though bondholders are in a better position relative to stockholders, the price of a bond is also influenced by the credit worthiness of the issuer. If the credit worthiness of the issuer goes up, then the price of the issued bonds will – everything else being equal – also go up. If the credit worthiness goes down, the price will go down.

We take a closer look at credit worthiness in one of the special focus chapters you can find on the right-hand side of this Bonds page. It's titled:

### **Credit Quality & Ratings**

So, before moving on to the next chapter, let's summarise the basic concepts of a bond:

1. Bonds have existed as a means to raise money for thousands of years.
  2. In essence, bonds are an IOU that can be traded between investors.
  3. Issuers of bonds pay interest – known as a coupon – at fixed intervals and they repay the borrowed amount at a predefined date, known as the maturity date.
  4. Bonds can be viewed as a safer investment than stocks, because they have a higher claim in case of bankruptcy of the issuer. But bond investors don't have the same upside potential as stock investors. Neither do bond investors have the right to receive stock dividends from the issuer.
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5. Finally, the creditworthiness of the issuer can influence the price of a bond. If the creditworthiness of the issuer increases, the bond price will – everything else being equal – go up, and visa versa.
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## Chapter 1.2 / Basic Terms and Definitions

Several terms and definitions are commonly used in bond trading. We will begin by explaining what a Bond is, who issues them, and what the various terms used when trading bonds actually mean.

Firstly, let's have a look at what a Bond is, who issues it and who invests in it.

A bond is a debt investment in which INVESTOR lends money to an entity that borrows the funds for a defined period of time at an interest rate paid at predefined intervals.

The ISSUER is the entity that borrows the money by issuing a Bond. Issuers are typically divided into categories that are defined by their governance structure. These are:

1. Supranationals - for example, the World Bank and European Development Bank.
2. Governments - for example, Germany, Brazil and Russia.
3. Municipalities - for example, the City of Buenos Aires.
4. Corporations - for example Gazprom, Volkswagen and Petrobras.
5. Banks – such as Deutsche Bank, Citigroup etc.

The INVESTOR is the person or entity buying the Bond. He or she pays a price when buying the bond and receives interest at predefined intervals. If the INVESTOR holds the Bond until it expires, they will also receive the invested nominal value at maturity.

### Key Characteristics

Let's look closer at some of the characteristics of a Bond.

The Bond principal is also referred to as the 'face value' or 'par value'. It is the amount that the investor will get back when the bond matures.

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Typically Bonds are issued with a minimum total principal amount of 250 million euros or dollars. The most frequent issued amount is between 250 and 750 million euros or dollars. Some large corporations have issued Bonds with a principal amount of two billion euros or dollars.

### **Maturity**

Maturity is the date on which the Bond expires, and the principal is paid back to the investors.

### **Interest**

Interest is also known as the coupon. This term defines the rate of interest that is paid on the bond by the borrower.

The most common types of interest are fixed or floating. A bond with a fixed coupon pays the same rate of interest throughout its life at fixed intervals, typically once a year or semi-annually.

A Bond with a floating coupon typically pays a fixed rate of interest that is on top of a benchmark interest rate, for example, the three-month Libor rate. As a result, the coupon is set to be paid at predefined intervals – for example every three or six months.

Yield to maturity

The yield to maturity expresses the return that the INVESTOR gets on the Bond investment if it is held to maturity. It is shown as a percentage.

The yield to maturity equals all the interest payments the investor will receive plus any gain or loss between the price the Bond was bought at and the repayment price, which is usually 100. The formula assumes that the INVESTOR will re-invest future coupon payments at the same rate as the current yield on the bond.

### **Repayment**

Repayment, also known as the instalment of the Bond, can be made in various ways. The most commonly used is the 'bullet-type' repayment, which applies to 90% of all issued Bonds. With bullet-type bonds, the principal is paid back in one amount at maturity.

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## Trading venues

Bonds are either traded via an exchange or over the counter, which is also known as 'OTC'. Bonds are usually listed on an exchange but, unlike equities, their liquidity is poor so the trading is done OTC.

In the next chapter, we'll take a closer look at how bonds are traded OTC.

We've now come to the end of this chapter, which explains the basic terms and definitions used when trading bonds.

### So, let's summarise:

1. Bonds are debt instruments where the issuer borrows money from the investor who buys the Bond.
  2. The issuer pays the investor interest, also known as a coupon, for borrowing the money. The coupon is typically paid annually or semi-annually and can be fixed for the entire life of the bond or it can float, meaning that the amount of the coupon varies.
  3. There are various types of issuers, ranging from supranationals to corporations.
  4. The total amount of a Bond issued is called the principal. In 90% of all cases, this is repaid in one amount at the maturity date in a 'bullet-type' repayment.
  5. The investor's return on the bond is termed the 'yield to maturity'. It defines the total return – in percentage terms – that the investor earns on the investment if they hold it to maturity. This is not to be confused with the interest or coupon paid on the bond. The coupon is the agreed interest paid at predefined intervals on the bond by the issuer.
  6. The majority of Bonds are traded over the counter, also known as OTC.
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## Chapter 1.3 / Trading Bonds

### Introduction

Welcome to chapter 3 on bonds. In this chapter, you will be introduced to the most commonly traded types of bonds and learn how they are traded. If some of the terms and definitions are unfamiliar to you, we encourage you to refer to the previous chapters for an in-depth explanation.

### Types of bonds

As we saw in the previous chapter, there are several types of bond issuers. These are:

- Supranationals
- Governments
- Local governments and municipalities
- Corporates

Bond trading can be done in two ways – either via exchange or over the counter, which is known as 'OTC'.

The majority of bonds are OTC-traded. Exchange-traded bonds are typically domestic government bonds that are issued in the local currency.

When trading OTC, you simply trade directly with your counterparty, which is normally your broker or your bank. You agree with your counterparty on the price that you will buy or sell the bond at. When you contact your broker or your bank, you need to provide the details of the bond you want to trade. These are:

- The name of the issuer
  - The coupon of the bond
  - The maturity date of the bond
  - The unique ID of the bond, for example its ISIN number
  - The nominal amount that you want to trade
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The dealer will quote a bid and offer price, which you can accept, or you may have the possibility of asking the dealer to work an OTC order for a specific price target of your choice.

When the trade is executed, it will be settled two or three days later. You will need to pay the broker a commission fee for executing the trade.

If you trade via an exchange, your broker or bank will route your order to buy or sell a bond to an exchange. There your order will be executed against the bid or offer that is available on the exchange.

As the majority of bonds are OTC-traded, we will concentrate on this method from now on in this chapter.

When trading bonds, there are two basic terms and definitions to be aware of. These are:

- a) Trade and lot size, and
- b) Price and quotation.

Trade and lot size refer to the total amount traded and the increments that a bond is traded at. Therefore we operate with a 'minimum lot size' and a 'lot size'.

The 'minimum lot size' is the minimum nominal amount of a bond you can trade. Most OTC-traded bonds have a minimum lot size of 50,000 euros or higher.

The 'lot size' is the incremental nominal amount that can be traded.

Let's take a look at an example:

A corporate bond has a minimum lot size of 100,000 euros and a lot size of 50,000 euros. Thus, the minimum amount that can be traded is 100,000 euros. Above this amount, the bond can be traded in nominal sizes of 150,000; 200,000; 250,000 and so on. Each time the amount increases with the lot size.

## **The Price of bonds**

Bonds are always quoted at a price. The price is quoted as the amount of money that you have to pay for a nominal value of 100 currency units of the bond. This is called the clean price.

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If a bond is quoted at a price of 105, this means that for each nominal value of 100, you pay 105. Using the example we had before, where a bond has a minimum lot size of 100,000 euros and the price is 105, you would need to pay 105,000 euros to buy the bond

## **Price spread**

The price spread of a bond expresses the difference between the bid, which is the price you can sell at; and the offer, which is the price you can buy at.

In the example we used before, you could buy at 105, which is the offer price. The price you can sell at – the bid price – will be lower, for example, it may be 103.75.

The price spread – or bid-offer spread – on a bond is subject to several parameters, the most common being the rating of the bond, the type of bond, and the market liquidity of the bond.

Market liquidity expresses the trader's ability to convert the bond to cash quickly. If there are many buyers and sellers willing to trade the bond, we have good liquidity in the market and the bid-offer spread tends to narrow. So it could move from being 103.75 – 105.00 to being 104.00 – 105.00. The opposite will happen if market liquidity is poor as a result of there being few sellers and buyers.

## **Interest**

On top of the price, you will also have to pay or receive accrued interest. Accrued interest is the interest that has been accumulated since the last coupon payment.

As it is always the holder of the bond that receives interest at the time of the coupon payment, you need to modify the payment of a bond to allow for the accrued interest if the trade is done between coupon dates. If you sell a bond, you need to be compensated for the interest that the bond has earned since last coupon date by the buyer, since it is the buyer who will receive the full coupon amount on coupon day.

As coupon payments are dependent on the interest calculation method, you will need to know the specifics of the bond that you are trading before you can calculate the exact value of the coupon payment.

Let's look at an example.

We have a bond with a coupon of 5%, which is paid annually on February 15. You now want to buy that bond, with settlement date of the trade being August 15. The settlement

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day is typically two or three days after the day you trade.

Assume that there are no leap days, so the year is a 365-day year. The number of days that have passed since the last coupon payment is 181. This is the number of days from February 15 to August 15.

Finally, you want to buy for nominal 100,000 euros.

The accrued interest calculation looks like this: 5% of 100,000 euros multiplied by 181 and divided by 365. This gives an amount equal to 2,479.45 euros, which you, as a buyer, pay the seller of the bond.

On top of this, you will, of course, also pay the price of the bond. Using the earlier example, let's assume the price is 105.

Thus the amount you need to pay consists of two elements:

- A The price. This is 105 divided by 100 and multiplied by 100,000 euros, which equals 105,000 euros, and
  - B ...the accrued interest, which is the 2,479.45 euros we just calculated.
- In total, you pay 107,479.45 euros.

The resulting price when adding the accrued interest to the clean price is 107.48. This is also known as the dirty price. When you want to find out if you have made a profit or a loss on a bond investment, you have to look at:

1. The difference between the price you bought the bond at and the price you can sell it at, which is the clean price difference.
2. The accrued interest you paid when buying the bond and the accrued interest you will receive when selling the bond.
3. Any coupon payments that you have received during the holding period.

Let's take a look at an example, using the same bond we've used in previous examples.

When you bought nominal 100,000 euros of the 5% bond, you paid a price of 105. On top of this, you paid accrued interest of 2,479.45 euros.

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The accrued interest you will receive is 808.22 euros.

59 days have passed since last coupon payment, so we use the following formula –  $59/365 * 5\% * 100,000$  – to find the accrued interest you will receive.

To find the profit or loss on your bond position, you can make the following calculation:

The buy sum was 105,000 euros.

The amount of accrued interest that you paid when buying the bond was -2,479.45 euros.

You received a coupon payment of 5,000 euros.

When selling the bond, you received accrued interest of 808.22 euros.

The sell sum was 106,000 euros.

So you made an overall profit of 4,328.77 euros.

In percentage terms, the investment has yielded 4.12 % over an eight-month period. This roughly translates into an annual yield of 6.18%.

## Summary

We have now come to the end of this chapter, which explains how bonds are traded. So let's summarise what we have covered:

1. Bonds are issued by different types of issuers, which range from supranationals to corporations.
2. When buying or selling a bond you need to inform your bank or broker of the specifics of the bond, which are:
  - a. The name of the issuer.
  - b. The coupon.
  - c. The maturity date.
  - d. The unique ID of the bond.
  - e. The nominal amount that you want to trade.
3. Bonds have a minimum lot size and a lot size. These define the amounts you can trade.

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5. Besides the price, accrued interest is to be paid to the seller as well as a com-



5. Besides the price, accrued interest is to be paid to the seller as well as a commission to your bank or broker.
  6. When calculating your profit or loss on a bond position, you need to take any paid coupons and accrued interest into the calculation as well as the difference between the price you bought at and the price you can sell at.
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## Bonds

### Chapter 1.4 / Bond trading strategies

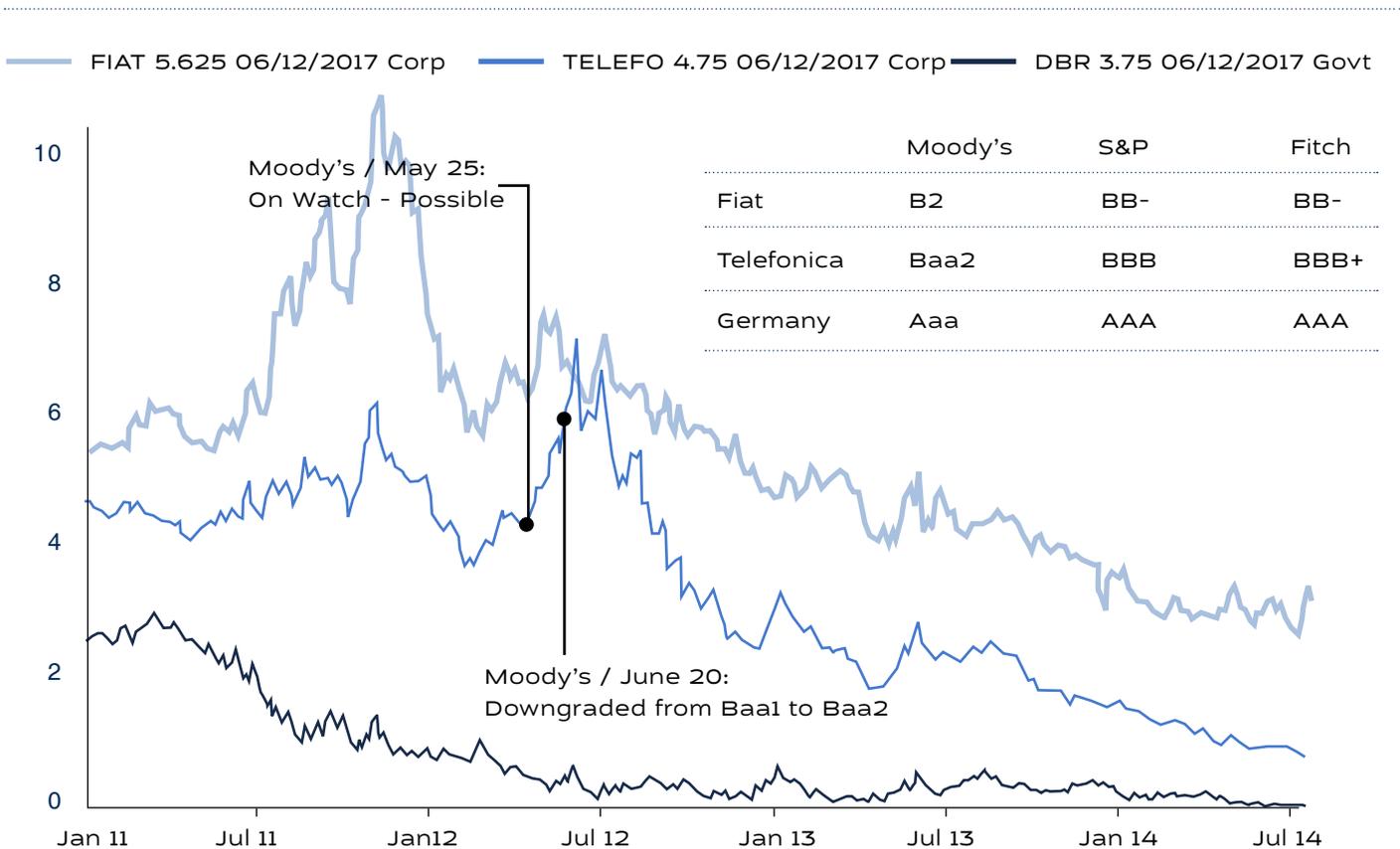
#### Introduction

Welcome to chapter 4 on Bonds. Most investors typically have a strategy behind their bond investments. In this chapter, we will take a closer look at two widely used strategies. These are the yield pick-up strategy and using Bonds as an alternative to stocks.

If some of the terms and definitions are unfamiliar to you, we encourage you to take a look at the previous chapters in the Academy training for an in-depth explanation.

#### The yield pick-up strategy

Investors who use the yield pick-up strategy are aiming to get a better return on their investment in a Bond issued by a company or municipality than they would if they bought a comparable government Bond. At the same time, they want to enjoy a high level of certainty with regard to the bond's expected cash flow. They achieve this by investing in investment-grade bonds or higher rated, high-yield Bonds. In the following example, we look at three Bonds and the yield to maturity that they were traded at from January 2011 to August 2014.





As you can see, the high-yield Bond issued by Italian car manufacturer Fiat– and the investment-grade bond issued by Spanish telecommunications company Telefonica are both trading at better yields to maturity than the comparable German government Bond. The Bonds are comparable because they are all issued in the same currency, the euro, and they all have the same maturity date.

There are risks associated with the yield pick-up strategy. So what are these risks?

Firstly, there is a risk of greater volatility in the price of corporate bonds compared with government Bonds due to changes in market sentiment.

Secondly, in rare cases, even investment-grade Bonds can suffer sharp declines in price due to the deteriorating credit quality of the issuer, which is evident if the issuer has had their credit downgraded.

### **Bonds as an alternative to stocks**

Another widely used strategy is to buy Bonds from issuers that also have issued stocks. Many companies fund themselves both by issuing stocks and by issuing bonds.

The price of a corporate Bond will – everything else being equal – not fluctuate as much as the stock issued by the same company. The price of a stock is based on expectations of a company's future earnings. The price of a Bond will be linked to the future cashflow that it generates for the investor. This cashflow consists of future coupon payments and the final payment instalment. The price of a Bond also reflects any shifts in the credit rating of the issuer.

Thus, Bonds have certain characteristics that make them more attractive than stocks to some investors. The price of a Bond tends to fluctuate less than the price of a stock. The investor benefits from the certainty of receiving a known coupon at fixed intervals from a Bond compared with the uncertainty of receiving unknown future dividends from a stock.

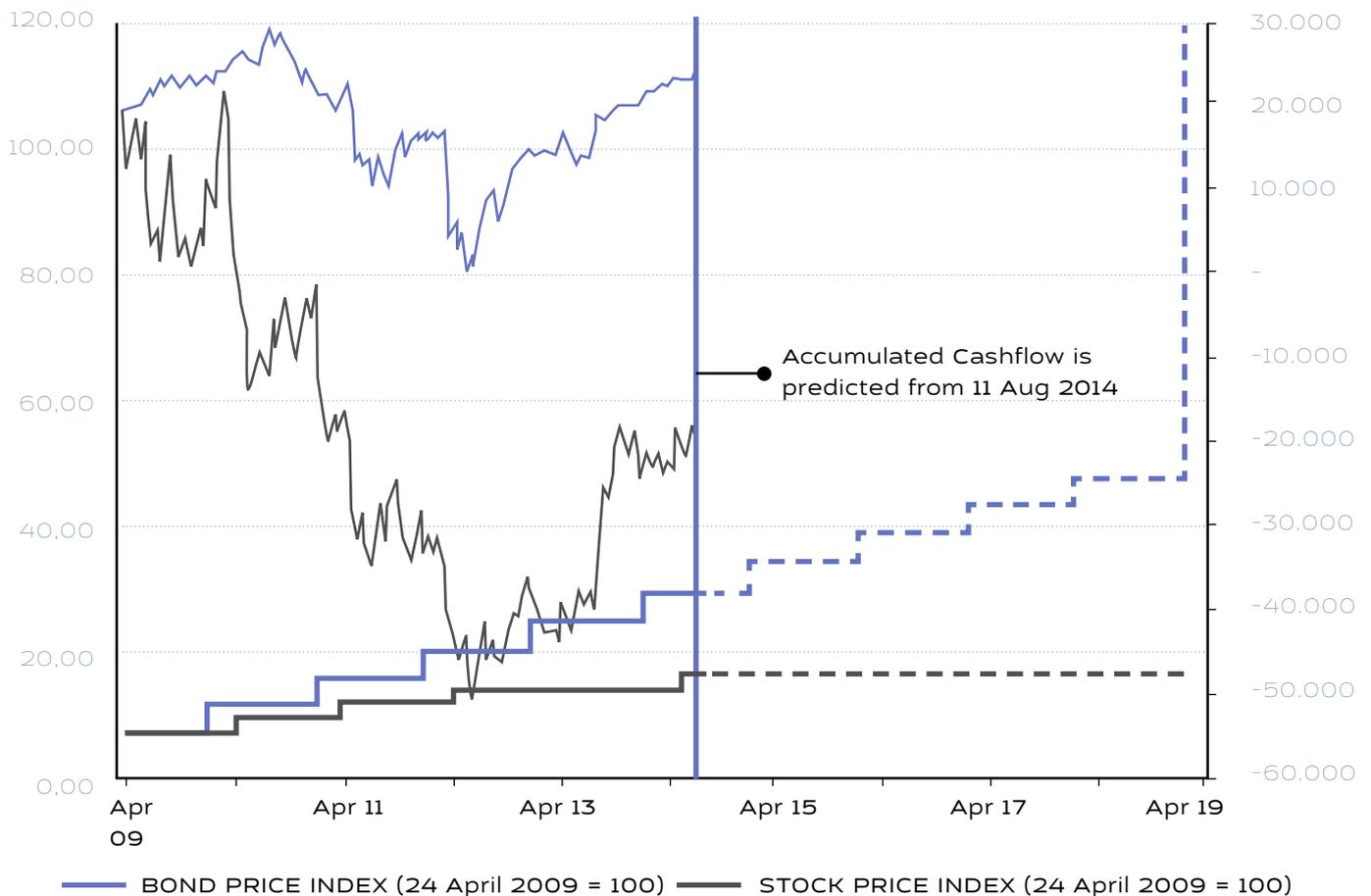
In most cases, investors are better off having invested in a bond if the issuer faces financial distress. This is because they absorb any losses later than stockholders. You can learn more about security structure by looking at our explainer on this.

On the other hand, by investing in a Bond the investor doesn't have the upside potential that an investment in a stock offers. For example, if the issuer performs better than anticipated by the market.

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In the following example, we look at the Finnish electronics producer Nokia and compare the performance of Nokia's stock with the performance of one of its Bonds.



We assume that on 24 April 2009 the investor bought nominal 50,000 euros worth of a Nokia Bond with a maturity of February 2019 and a coupon of 6.75%. He also bought an equal amount of the Nokia stock.

As the graph shows, the price fluctuation of the Bond was smaller than the price fluctuation of the stock over a five-year period. Meanwhile, the accumulated expected cashflow from the bond was more certain than the cashflow from the stock, because Nokia lowered its dividend payout in 2012 and it didn't pay any dividend at all in 2013.



## Summary

To conclude, in this chapter, we have looked at two commonly used Bond strategies.

1. The first strategy was the yield pick-up strategy. With this strategy, the investor gets a higher yield by switching their investment from a high-rated government Bond to a lower-rated corporate Bond, accepting slightly more risk at the same time.
2. The second strategy consists of buying bonds as an alternative to stocks. This results in the investor gaining more certainty with regard to future cash flows and being affected by less potential price fluctuation. On the other hand, their ability to benefit from the upside potential of the company performing better than expected is minimal.

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