# Chapter 11

# Structural Issues: Coupons

What's in this chapter:

- loan coupons
- bond coupons
- deferred pay coupons, zeros, and PIKS
- how the coupon is determined
- modeling changes in coupons

LEVERAGED FINANCE DEBT instruments have several types of coupon structures. Most coupons are floating rate or fixed rate, but other structures do occur, especially in private debt markets and when new debt is issued in financial restructurings. The most important structures are the cash-paying fixed and floating-rate coupons, but an understanding of deferred pay structures is important as well. While price movements and the associated widening and tightening of spreads are an important focus of understanding the leveraged finance markets, over longer periods of time, the bulk of the return in leveraged finance is interest income from coupon payments.

## Loan Coupons

The interest rate on bank loans is usually a floating rate, not a fixed rate. This means that the interest rate moves at a set spread to some base rate: as the base rate moves, so does the coupon. The base rate is usually a short-term rate that is readily accessible and has a liquid market. Most loan floating-rate structures use a one- or three-month rate and typically the reset of the coupon date matches the duration of the rate, so the coupon does not move every day with the base rate but is reset periodically. If the coupon resets quarterly, the instrument uses a three-month base rate.

The most common base rate used in the leveraged loan market for many years was LIBOR. However, LIBOR is being phased out in many markets, and different countries are promoting various market-based short-term rates. In the USA, it appears that SOFR will be the most common. It is is based on the cost of short-term borrowing, securitized by US Treasury securities. In the United Kingdom, it appears that SONIA will be the replacement; in Europe ESTR; and in Japan TONAR.[9] Which region's base rate gets used is typically determined by the currency that the debt is issued in, not by where the company is based. If a Japan-based company were to issue Euro-denominated floating-rate debt, the base rate would utilize ESTR.

A typical US-dollar-based bank loan might be said to have a rate of LIBOR (or SOFR) plus 625 bps. This means that the rate would be 6.25 percentage points over LIBOR. If the LIBOR rate is 2.5%, the company that borrowed this bank loan would be paying 8.75%. It is common for bank loans, generally, to pay interest based on their base rate; if a loan is using three-month LIBOR, it would pay quarterly.

Some bank agreements include other features that can impact the coupon. For example, some loans may have a LIBOR floor that is triggered if LIBOR goes below a certain rate. If LIBOR drops from 2.5% to 1.5% for a loan without a floor, the terms require the company to pay its lenders 7.75% (the 1.5% LIBOR rate plus 625 bps). However, loans with a floor of 2% use 2.0% as the base rate and pay 8.25% (or 2% floor + 625 bps rate).

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9 SONIA = sterling overnight index average; ESTR = European short-term rate; TONAR = Tokyo overnight average rate.

Some loans also have what is known as a pricing grid, shown in Exhibit 11.1. This was very common for a period of time but is less common now in syndicated institutional loans. In this structure, the rate the company pays on the loan may move, depending on some financial metric—usually a debt/EBITDA or a senior secured debt/EBITDA (the loan would typically use the secured leverage test because bank debt is usually ranked senior secured). The grid moves the spread if the ratio moves up or down significantly.

**Exhibit 11.1: Pricing Grid**

| If the quarterly senior secured debt/EBITDA ratio is between | | the spread to LIBOR is |
|---|---|---|
| < | 2.00× | +250 |
| 2.01× | 4.00× | +350 |
| 4.01× | 6.01× | +450 |

## Bond Coupons

Leveraged finance bonds have several types of interest structures. By far the most common is a fixed-rate structure. This is where the bond pays a set rate, such as 10% per year. Bonds typically pay interest semi-annually. Buyers who purchased €1 million of a 10% bond would be paid two installments a year of €50,000 each.

Some bonds have a floating-rate structure, as described in the bank agreements. Floating-rate bonds usually have a floor, but this type of bond is atypical.

Some bonds have step coupons. They take two typical forms:

1. *Step coupon occurring upon an event*: It is not uncommon for a weaker investment-grade company to have a provision that if the bond gets downgraded to high yield (assume BB+), then the coupon on the bond increases by +25 bps, which may step up for each downgrade. If the initial coupon on the bond was 3%, upon the downgrade, the bond starts paying 3.25% interest to investors.

2. *Bond coupon increasing on a certain date*: If a bond with a ten-year maturity is issued with a 5% coupon, that coupon may step up to 7% on the fifth anniversary of the date it was issued. This is done because the market would likely require a higher interest rate than 5% to buy the bonds at the time they were issued. However, the company might not be able to service the debt initially, but is expecting to grow its cash flow. So, it will offer investors an increase in the coupon in later years.

## Deferred Pay Coupons, Zeros, and PIKs

Periodically, deferred pay bonds are issued. The four common types of deferred pay bonds are zero-coupon, zero-step, pay-in-kind, and toggle bonds.

A deferred pay bond pays no cash interest for all, or part, of the bond's life. So usually, if investors forgo cash interest during the life of the bond, they require a higher yield than they would if it were a regular cash-paying bond. The deferred pay structure also, as a rule, makes the bond more volatile to changes in interest rates than a similar-yielding cash-paying bond would be. Generally, deferred pay structures are issued by companies going through a start-up phase or major transition of some kind, and cannot afford all the interest payments that investors would require to be attracted to buy the debt. For this reason, they tend to be higher risk and also require more yield. Typically, these companies are expected to see meaningful growth rates or deleveraging through asset sales at high multiples.

### Zero-Coupon Bonds

A zero-coupon bond is the simplest deferred pay structure and has not been that commonly used in leveraged finance, but it is an important base to start from. With a straight zero coupon for life, the company issues a bond to buyers at a deep discount from par. For example, suppose the company sells a five-year bond at 55.75% of face value. If it were selling a face amount of $100 million in bonds, it would raise $55.75 million from investors. Bondholders would pay $55.75 million. If investors were to own the bond until maturity, they would get $100 million from the company when the bond matures in five years, which would be equal to a 125 return. The bond's value goes up each day (accretion) as it gets closer to maturity. Exhibit 11.2 shows the amount of the bond when it was issued and what the accreted value is on selected dates. If the bond were bought on that date in Exhibit 11.2 at the accreted price, the yield (return to

maturity) would be 12%. If the purchaser were to pay more than the accreted value, the yield would be less than 12%. If the purchaser were to pay less than the accreted value, the yield would be more than 12%. This is just like buying a cash-pay bond at a discount to par. The YTM is higher than the coupon. However, the accreted value is the claim value of the bond and changes each day. The return on the investment comes in the form of this principal accretion, as opposed to coming from cash interest payments.

**Exhibit 11.2: Annual Accretion on a $100 Million Five-Year Zero-Coupon Note**

| Date | Accreted Value in $000,000s |
|---|---|
| At issuance | 55.75 |
| End of year 1 | 62.74 |
| End of year 2 | 70.50 |
| End of year 3 | 79.20 |
| End of year 4 | 88.90 |
| End of year 5 | 100.00 |

## Deferred Pay Bonds and the Balance Sheet

When working with deferred pay bonds, or any debt that is issued at a discount and accretes to par, it is important to understand the differences between looking at the whole debt issue as it appears on the company financials and looking at an individual bond.

When looking at a financial statement model for a credit or a company's financial statement, the focus is on the whole bond issue. Using the data shown in Exhibit 11.2, the company issued $100 million bonds at 55.75% of face value. On the balance sheet immediately after the bonds were issued, a new debt obligation of $55.75 million would appear. One year from now, that bond would appear on the balance sheet as $62.74 million because it accreted to that amount. The difference would have been recorded on the income statement as an interest expense of $6.99 million ($62.74 million - $55.75 million). The statement of cash flows would show this as a noncash interest payment.

When figuring out how the bond will trade, and when talking to a trader, the analyst must think on a per-bond basis. The typical bond is in $1,000 increments for trading purposes and must be translated into a per-bond basis and quoted on a percentage of face value basis.

Continuing with the example, 100,000 bonds were issued. Because a round number such as $100 million is outstanding, it is not difficult to figure that at the end of year 1, if investors wanted to buy the bond at the accreted value to equal a yield of 12%, they would pay 62.74 per bond.

To change this example, assume that the company issued $200 million in bonds. At the time the bonds were issued, the accreted value was 55.75% of face value. However, on the balance sheet this would not appear as $55.75 million, but as a debt of $111.5 million ($200 million × 0.5575). At the end of year 1, the balance sheet would show a debt of $125.48 million ($200 million × 0.6274). However, if an analyst were informing a portfolio manager of the price of the bond if it were supposed to trade at the accreted value, the analyst would not say, "111.5 at the time of issuance" or "124.88 at the end of one year," but would still quote 55.75 or 62.74, respectively. This is because bond prices are quoted as a percentage of par value.

Exhibit 11.3 shows, as an example, the balance sheet accreted value for the $200 million of bonds and how the bond's trading price (accreted value per bond) would be quoted.

**Exhibit 11.3: Annual Accretion on a $200 Million Five-Year Zero-Coupon Note Issued @ 12%**

| Date | Balance Sheet Accreted Value in $000,000s | Accreted Value Per Bond in Percentage |
|---|---|---|
| At issuance | 111.50 | 55.75 |
| End of year 1 | 125.48 | 62.74 |
| End of year 2 | 141.00 | 70.50 |
| End of year 3 | 158.40 | 79.20 |
| End of year 4 | 177.80 | 88.90 |
| End of year 5 | 200.00 | 100.00 |

This accreted value is an important concept in bankruptcy because the principal claim that a bond has in bankruptcy is only for the accreted value.

Note that the accreted value changes every business day. We show only the difference annually for illustrative purposes. Most bond-calculating systems show this calculation for any given day. Bond-calculating systems typically give the accreted value on a per-bond basis. The analyst must multiply it against the face amount to calculate the full amount of the debt on the balance sheet. For all these deferred pay structures, keep in mind that the accretion, or growth in the debt, must be modeled onto the debt structure section of any model, and the distinction between cash and noncash interest must be modeled correctly.

### Accretion in Cash-Pay Bonds

This concept of accretion also can be a factor in cash-paying debt. Sometimes a loan or a bond with a cash-paying coupon is issued at a slight discount, enhancing the return to investors to entice them to invest (this happens quite often in the leveraged loan market). This discount is referred to as an original issue discount (OID). It is usually not that large, perhaps one to two bond points. However, it appears on the balance sheet and is amortized over the life of the bond, just as would happen with a zero-coupon bond. Similar to what occurs with a zero-coupon bond, if a company goes bankrupt, the claim in bankruptcy of the holder of the bond, or loan, with an OID will not be par but whatever the accreted value is on the day that the bankruptcy was filed.

## Zero-Step Coupon Bonds

Another type of deferred pay issue is a zero-fix or zero-step coupon bond. We will use the term *zero-step* because the interest rate, or coupon, steps up. These bonds are issued as a zero coupon and, after a set number of years, begin to pay cash interest.

A typical structure is for the bond to be issued at a discount, accrete for five years to par, and then begin paying cash interest. The bond accretes from its discounted issue price to par (the face amount) during the period in which it

is not paying cash interest. When the bond begins to pay cash, it pays on the full face amount. The rate at which the bond accretes during the zero period is usually the same as that of the cash coupon when it starts paying. The bonds are generally callable at a premium on the date that the cash interest begins accruing. Exhibit 11.4 is a schedule of what the accretion and cash interest payments on an eight-year bond might look like.

**Exhibit 11.4: $100 Million Zero-Step 12% Eight-Year Bond; Goes Cash Pay at the End of Year 5**

| Date | Accreted Value in $000,000s | Annual Cash Interest Payments |
|---|---|---|
| At issuance | 55.75 | - |
| End of year 1 | 62.74 | 0 |
| End of year 2 | 70.50 | 0 |
| End of year 3 | 79.20 | 0 |
| End of year 4 | 88.90 | 0 |
| End of year 5 | 100.00 | 0 |
| End of year 6 | 100.00 | 12.00 |
| End of year 7 | 100.00 | 12.00 |
| End of year 8 | 100.00 | 12.00 |

## PIK and PIK Toggle Bonds

Another type of deferred pay bond is pay-in-kind (PIK). In this structure the bonds are usually issued at face amount. However, for a period of time, most commonly three or five years, interest is paid not in cash but by issuing additional bonds, thus paying the interest in kind rather than in cash.

You should remember a few things about this type of structure:

- *Increasing payments*: After the new bonds are issued, the next interest payment is made on the new number of bonds outstanding, so each successive next interest payment is actually larger (see Exhibit 11.5). When modeling the bond, the number of bonds increases by the amount of the interest payment (similar to the accretion of a zero coupon).

- *Par value*: If bonds are trading at a significant discount, the coupon payment will initially be valued at less than par. The same could be true if the bonds were trading at a premium. This can impact how the bonds trade. An investor who owns $1 million of an 8% PIK bond on a semiannual coupon payment would receive $40,000 of new bonds. However, if that bond were trading in the market at 105, the market value of the interest payment would be $42,000 ($40,000 × 1.05).
- *No accrued interest*: Although cash-pay bonds are traded with accrued interest, PIK bonds do not trade with accrued interest. Theoretically, during the period between interest payment dates, the price rises for the amount of interest that is accruing. It declines after the interest payment is made by a like amount.

After the bond finishes its PIK period, it begins paying cash interest.

**Exhibit 11.5: Interest Payments on a $100 Million 10% PIK Bond in $000,000s**

| Date | Amount Outstanding | Amount of PIK Payment | New Amount Outstanding |
|---|---|---|---|
| At issuance | 100.00 | - | - |
| Issuance + 6 months | 100.00 | 5.00 | 105.00 |
| Issuance + 12 months | 105.00 | 5.25 | 110.25 |
| Issuance + 18 months | 110.25 | 5.51 | 115.76 |
| Issuance + 24 months | 115.76 | 5.79 | 121.55 |
| Issuance + 30 months | 121.55 | 6.08 | 127.63 |
| Issuance + 36 months | 127.63 | 6.38 | 134.01 |

An innovation to the PIK structure is a PIK toggle note. In this structure, during the period in which the company would typically use the PIK structure, the issuer may choose, at the beginning of any interest period, to pay the coupon with a PIK payment or cash payment, or frequently, a combination of the two. Sometimes this type of note has a different coupon rate if the company chooses PIK versus pay cash (the coupon is usually lower for a cash payment).

Deferred pay bonds are typically used to help preserve cash during a company's developmental or transitional period, when it would probably be difficult to service the full interest payments on the debt if it were all cash pay. Another

way this type of problem has been addressed is with overfunding. In this overfunded structure, the bond is issued in an amount more than the company actually needs. The extra money is put in an escrow account to service the interest payments for a period of time, generally two or three years.

## How the Coupon Is Determined

The interest rate or coupon is determined when the bond or bank loan is issued. Multiple factors influence the rate. They include the general interest rates currently prevailing in the country where the bonds are being issued and the average rates on high yield bonds and loans in the same industry and with the same rating. If the company has bonds or loans outstanding, the level at which these bonds are trading will be a factor, based on the outstanding yields and spreads when the new debt is issued. The better the issuer is perceived, and the better the structure of the new debt, the lower the coupon. Maturity, seniority, covenants, and other structural issues will be factored in by investors when comparing a new bond or loan to existing investment opportunities in the marketplace. Additionally, market supply and demand at the time of issuance can be a factor in determining the coupon. Frequently, the stated intention of the use of a new debt issue's proceeds is to retire existing debt. This can sometimes increase demand for a new issue, as holders of the debt that is being retired may want to roll into the new issue.

If an issuer has improved considerably over the years after its issuance of the debt, and interest rates have not moved much, the bonds will trade over the issue price and will offer a lower yield. In this case, the company may start thinking about trying to refinance the notes or loans at a lower rate to save money.

## Modeling Changes in Coupons

Impending debt maturities can be a significant factor for a company. Depending on how the company is doing and the marketplace, there may be refinancing risk. At the very least, the new financing may change a company's cost of capital and impact its financial liquidity.

Refinancing risk can be hard to estimate over a longer time period or during a phase of exceptionally high interest rate volatility. When modeling scenarios,

consider modeling fixed- and floating-rate debt and factor in a sensitivity analysis with increased interest rates.

Interest rate hedges also have to be considered. Companies can purchase a hedge to lock in rates and effectively turn a floating-rate coupon into a fixed rate. This hedge has a cost. It usually has an expiration as well, so a company may be hedged for two or three years and then face floating-rate risk. Always read the footnotes to financial statements with an eye toward seeing if some or all of the debt is hedged to make sure the model is showing the correct interest expense and understand the risks to the cost of capital.

The high yield market can move with interest rates, but historically, it is much less sensitive and less correlated to interest rate movements than many other fixed-income markets. Other large segments of the bond market live and die by minor moves in general interest rates. These include government and/or sovereign bonds and those of related entities, mortgage-backed securities, and high-grade corporates. All these other debt markets tend to have much longer duration than the leveraged debt markets.

This lower correlation with interest rates for high yield debt is due to a number of factors. The first is that credit improvements and declines in high yield companies tend to have much more influence on the yields the bank debt and bonds trade at than relatively small moves in general interest rates. Second, the coupon on these notes tends to be much higher than that on other types of fixed-income securities mentioned here, so a change in interest rates has a smaller impact on these issues. Third, it is rare for leveraged companies to issue bonds with maturities much longer than ten years; longer maturities are fairly common in government and high-grade bonds. Intuitively, the longer the bonds are outstanding, the more sensitive they can be to a minor change in rates. The coupon and the maturity are major influences when calculating the duration of a debt instrument, and duration helps to measure the sensitivity of a debt instrument to changes in interest rates or credit spreads. Below-investment-grade debt tends to have a much lower duration than asset classes such as investment-grade corporate bonds.

## Closing Comment

The coupon is the contractual return that an investor gets for loaning the money to a company, and it is a major component in the cost of capital for a corporate issuer of debt. On the surface, the coupon on leveraged finance debt instruments looks like a relatively straightforward part of the structure. There are several nuances and potential variability in the structure of coupons that can make the analysis of coupon structures more complex. When undertaking forward-looking credit analysis, it is important to always consider that the average interest expense that a company has to pay changes over time as new loans and bonds are issued to retire older debt securities. These changes in the cost of servicing debt impact the ability of a company to generate FCF.