5.1.5

Mezzanine Debt

LEARNING OBJECTIVES

Upon completion of this lesson, candidates should be able to:

Demonstrate knowledge of mezzanine debt.

Including:

- ☐ Identify structures of mezzanine debt.
- ☐ Understand how mezzanine debt can lower the weighted average cost of capital.
- ☐ Compare mezzanine debt financing to other forms of financing.
- ☐ Understand basic examples of mezzanine financing.
- ☐ Discuss major types of investors in mezzanine debt.
- ☐ Identify characteristics of mezzanine debt.

KEYWORDS

warrant	**weighted average cost of capital**
PIK toggle	**sponsored lending**
bridge financing	**stretch financing**
takeout provision	**acceleration**
blanket subordination	**springing subordination**

Mezzanine financing, by definition, defies generalization. Some investors, such as insurance companies, view mezzanine financing as a traditional form of debt. Insurance companies seek preservation of capital and consistency of cash flows, and they invest in mezzanine debt that tends to meet these priorities. Other investors, such as mezzanine limited partnerships, leveraged buyout (LBO) firms, and commercial banks, seek potential capital appreciation. Issuers may try to structure mezzanine debt so as to offer potential capital appreciation such that the return profile can becomes equity-like (typically through the use of warrants).

Mezzanine Debt Structures

Mezzanine debt becomes equity-like when an equity kicker is attached to the debt. This equity kicker, is usually in the form of equity warrants to purchase stock, with a strike price as low as $0.01 per share. A **warrant** is a call option issued by a corporation on its own stock. The number of warrants included in the equity kicker is inversely proportional to the coupon rate: The higher the coupon rate, the fewer warrants need to be issued. The investor receives both a coupon payment and participation in the upside of the company, should it achieve its growth potential. The equity component can be substantial, representing 5% to 20% of the outstanding equity of the company. For this reason, mezzanine debt is often viewed as an equity investment in the company as opposed to an unsecured lien on assets.

The idea that mezzanine debt becomes more equity-like when call options are attached is clarified through the application of option theory to the capital structure of a firm. Within Merton's view of the capital structure of a firm, corporate debt may be seen as the combination of a long position in the firm's assets and a short position in a call option (written to the shareholders), with a strike price equal to the face value of the firm's debt (and a time to expiration equal to the maturity of the debt). Equation 1 illustrates this structural view of corporate debt:

$$\text{Corporate Debt} = \text{Firm's Assets} - \text{Call Option on Firm's Assets}$$

When explicit long positions in equity kickers (i.e., call options) are attached to the corporate debt on the left side of Equation 1, the options hedge the debt holders' implicit short positions in call options on the right side of the equation. The net result is that the remaining exposure is the debt holders' implicit long position in the firm's assets. Thus, mezzanine debt with equity kickers can behave like an unlevered long position in the firm's underlying assets.

There is no typical or standard mezzanine deal structure. Each financing consists of unique terms and conditions that depend on the preferences of the user and provider and that emerge from a highly negotiated process. The flexibility of mezzanine financing is what makes it so popular with borrowers and investors alike. Both sides can tailor the financing to fit their borrowing and investment criteria.

Mezzanine financing provides a higher risk profile to an investor than does senior debt because of its unsecured status, lower credit priority, and equity kicker. However, the return range sought for mezzanine debt is substantially below that for venture capital and leveraged buyouts. The reduced return reflects a lower risk profile than is found in equity ownership. Typically, the total return sought by investors

in mezzanine financing is in the range of 12% to 17%. The largest piece of the total return is the coupon rate on the mezzanine security, usually 10% to 14%. The remainder of the upside comes from the equity kicker, either warrants or some other equity conversion. The equity kicker can provide an additional return to the mezzanine finance provider.

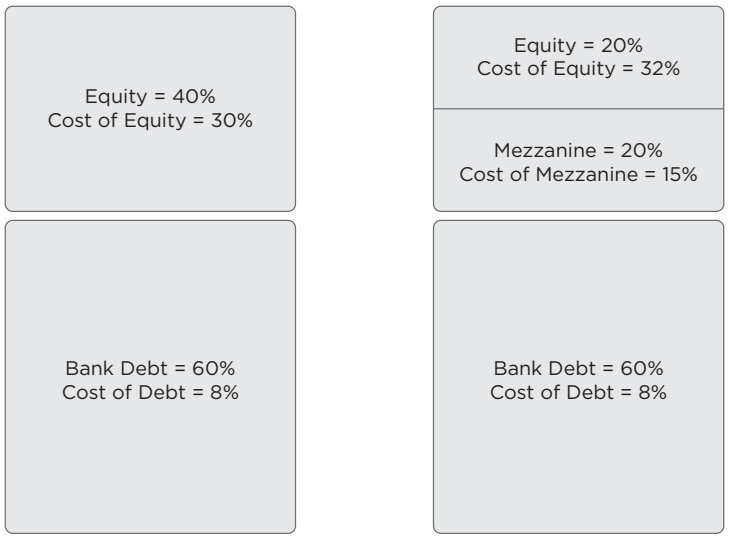
The typical exit strategy for mezzanine debt occurs when the underlying company goes public or obtains capital through a large equity issuance. In addition, the mezzanine debt may be paid prior to maturity if the borrowing firm is acquired or recapitalized. When one of these events happens, the mezzanine debt provider gets back the face value of the mezzanine debt plus the sale of stock from the conversion rights or sale of warrants attached to the mezzanine debt.

With a mezzanine fund (and other lending strategies), the J-curve effect is not as strong a factor when compared to other private fund strategies. One of the distinct advantages of lending strategies is the immediate cash-on-cash return. Private debt bears a coupon that requires twice-yearly interest payments to investors. As a result, mezzanine financing funds may avoid the steep early negative returns associated with venture capital or leveraged buyout funds.

Stylized Example of Mezzanine Debt Advantage

The left-hand side of Exhibit 1 shows a simple capital structure for a company faced with a 60% bank loan–40% equity capital structure. Bank debt is assumed to be cheap, and equity is assumed to be expensive. Unfortunately, a bank may be willing to lend only up to 60% of the total capital structure of the company. Therefore, expensive equity capital might be used to fill the remaining capital gap if mezzanine debt is unavailable. The **weighted average cost of capital** for a firm is the sum of the products of the percentages of each type of capital used to finance a firm times its annual cost to the firm. Exhibit 1 illustrates a relatively high weighted average cost of capital (WACC) using only bank loans and equity. Without mezzanine debt, the weighted average cost of capital is 16.8%.

EXHIBIT 1: Mezzanine Financing and the Cost of Capital



The right-hand side of Exhibit 1 lays out how mezzanine capital might lower the capital costs for a company. In this example, half of the equity capital is replaced with mezzanine debt at a coupon rate of 15%. This makes the equity riskier and therefore likely to increase its cost of capital, which is assumed to rise to 32%. At the bottom of Exhibit 1, the new weighted average cost of capital for the company is calculated. When mezzanine debt is added to the capital structure, the WACC declines from 16.8% to 14.2%.

The reduced weighted average cost of capital is generated by replacing relatively expensive equity financing with less expensive mezzanine financing. The reduction in capital costs illustrated in the above exhibit demonstrates the motivation for a firm to use mezzanine financing.

This simplified example assumes that the required return on equity changes only slightly when half of the equity is replaced with mezzanine debt and the leverage is increased. In the case of very-well-functioning capital markets, it would usually be argued that sources of financing are efficiently priced and that different capital structures cannot be used to generate lower aggregate costs of capital (i.e., lower weighted average costs of capital). The justifications for advantages to mezzanine debt are based on inefficiencies and imperfections in the capital markets for the size of companies that tend to use mezzanine financing.

APPLICATION A

Suppose that the structure on the right-hand side of Exhibit 1 is changed such that the mezzanine debt rises to being 30% of the capital structure, and the bank debt falls to being 50% of the capital structure. If the costs of bank debt and equity remain the same (8% and 32%, respectively), what must the new cost of mezzanine debt be such that the weighted average cost of capital would be 15.8%?

The answer is found by solving for x: 15.8% = (0.20 × 32%) + (0.30x) + (0.50 × 8%). The solution is that the cost of mezzanine debt, x, is 18%.

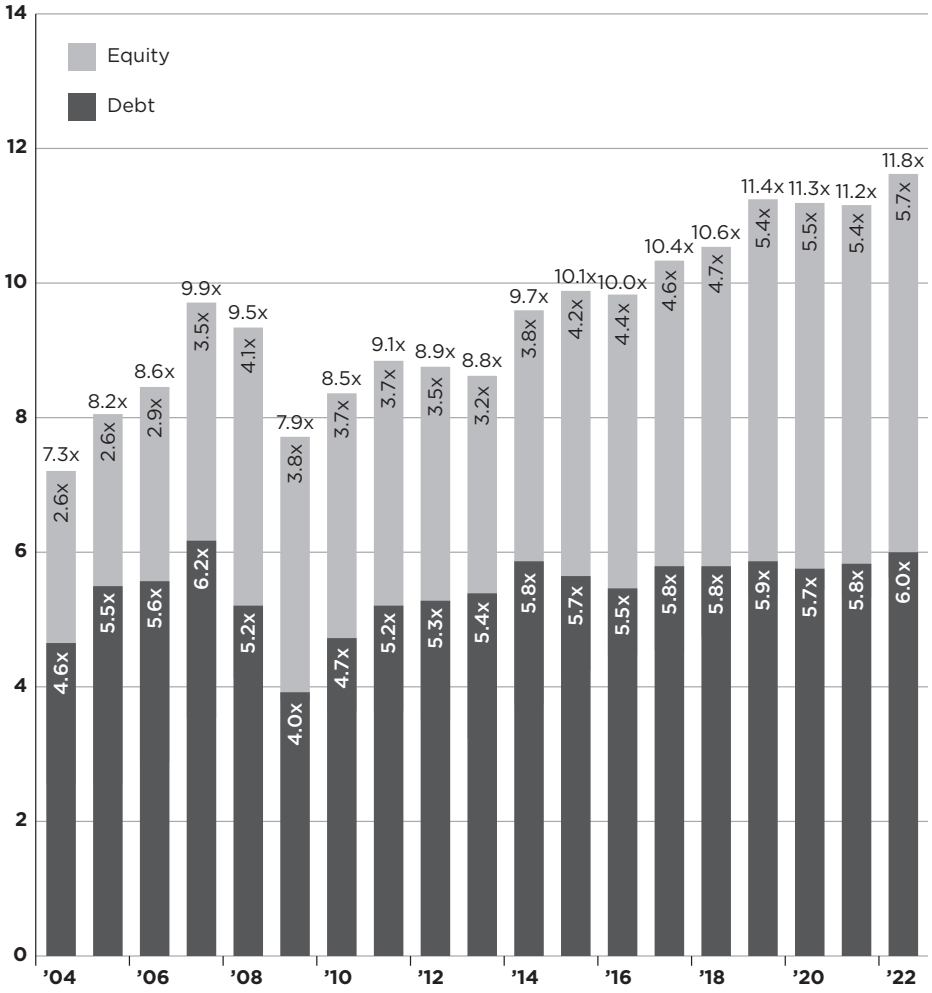
Mezzanine Financing Compared with Other Forms of Financing

Generally, mezzanine financing occurs in amounts below $400 million. In other words, mezzanine financing is generally used by middle-market companies, which are the larger stocks within the small-cap classification. These firms do not usually have access to the large public debt markets as a relatively efficiently priced source of debt capital. High-yield debt issues tend to start at sizes of $400 million. The same is true for leveraged loans.

Mezzanine financing is highly negotiated and can be tailored to any company's situation. The flip side is that the level of tailoring makes mezzanine debt illiquid. Exiting mezzanine debt involves a lengthy negotiation process for the investor, either with the company that issued the mezzanine debt to buy back its securities or with a secondary private equity investor to purchase the position. In both cases, mezzanine debt is often sold at a large discount.

Mezzanine debt is typically held by mezzanine debt funds raised by private credit firms. Mezzanine financing stands behind senior debt and is usually analyzed on an earnings before interest, taxes, depreciation, and amortization (EBITDA) multiple basis. Bank loans and other senior loans generally require a loan-to-EBITDA multiple of no more than 2x to 2.5x. In other words, a firm with EBITDA of $100 million per year would typically be allowed to borrow between $200 million and $250 million in senior loans. However, mezzanine debt typically allows for a higher loan-to-EBITDA multiple. Thus, with a multiple of 4x to 4.5x (or higher), a firm with EBITDA of $100 million per year could expand its total debt to between $400 million and $450 million, including perhaps $225 million of senior debt and $200 million of mezzanine debt. As shown in Exhibit 2, debt multiples for buyout transactions steadily increasing from 2009 to 2022, peaking at roughly six times EBITDA.

EXHIBIT 2: Deal Multiples and Leverage Multiples Have Been Rising in Large U.S. LBOs



Source: JP Morgan, Pitchbook, 2023 Annual US PE Breakdown.

Because mezzanine debt is not backed by collateral, it carries a higher coupon payment than does senior debt. Mezzanine debt is generally medium-term money, usually with maturities from five to seven years. Typically, mezzanine financing requires only payment of interest until maturity; there is no amortization of the underlying debt. Mezzanine debt can includes a payment in kind (PIK) toggle feature. A **PIK toggle** allows the underlying company to choose whether it will make required coupon payments in the form of cash or in kind, meaning with more mezzanine bonds (i.e. more principal is due at maturity). Leveraged loans do not have such a provision.

The next exhibit compares mezzanine debt to leveraged loans and high-yield bonds. Notice that leveraged loans have the strictest debt covenants, which lead to greater protection from default but also to a lower return. Also, a credit rating is typically required before a bank will lend credit through a leveraged loan, whereas this is not necessary for mezzanine debt. In addition, leveraged loans typically have a floating interest rate, whereas mezzanine debt has a fixed coupon.

EXHIBIT 3: Comparison of Leveraged Loans, High-Yield Bonds, and Mezzanine Debt

	Leveraged Loans	**High-Yield Bonds**	**Mezzanine Debt**
Seniority	Most or second-most senior	Contractual and structural subordination	Lowest priority
Type of security	First or second lien on assets	Unsecured	Unsecured
Credit rating	Usually required	Required	Not required
Loan covenants	Extensive	Less comprehensive	Minimal: typically related only to payment of coupons
Term	5 years	7–10 years	4–6 years
Amortization	Installments	Bullet payment	Bullet payment
Coupon type	Cash/floating	Cash/fixed	Cash/PIK/fixed
Coupon rate	floating + spread	5%–8%	8%–11%
Prepayment penalty	Usually none	High: usually the company must pay a call premium	Moderate: sometimes equity conversion is forced
Equity kicker	None	Sometimes	Almost always: usually equity warrants
Recovery if default	60%–100%	40%–50%	20%–30%
Liquidity	High	Low	Minimal

The risk of bonds or loans can be differentiated even further based on whether a transaction is sponsored or unsponsored. Many private credit funds participate in **sponsored lending**, whereby the borrowing firm is backed by an investment from a private equity fund or buyout fund sponsor. Investing in the debt that's generated through an LBO transaction might be a bit safer because there's a private equity or a buyout fund that owns the equity and maybe some of the debt of the firm. When that firm starts to experience distress, hopefully, the private equity or buyout manager will step in and inject additional capital, which might help to protect the value of their equity investment. A sponsored lending transaction may be therefore less risky than a nonsponsored lending transaction, because a nonsponsored transaction

doesn't have that private equity manager who might be willing to come and invest additional equity in the firm when it becomes distressed.

One last point is that leveraged loans do not contain any type of equity kicker, so they do not share in any upside of the company. Mezzanine financing often includes future equity participation through a convertible security or warrants attached to the mezzanine debt. This is distinctly different from bank loans, which focus exclusively on the cash yield. High-yield bonds fall somewhere between these two forms of financing.

Examples of Mezzanine Financing

As noted earlier, mezzanine financing can be viewed as filling either a gap in a company's financial structure or a gap in the supply of capital in the financial markets. This makes mezzanine financing extremely flexible. The diversity of transaction types that follow demonstrates this flexibility.

The following includes example transactions to which mezzanine debt may be applied.

- *Mezzanine financing for a management buyout (MBO):* When the senior management team of a firm leads an MBO, mezzanine debt can fill the gap between senior debt claims and equity.
- *Mezzanine financing for growth and expansion:* A company pursuing growth that cannot raise traditional bank financing or public financing may seek mezzanine financing.
- *Mezzanine financing for an acquisition:* A middle-market company seeking to purchase an even smaller company may seek mezzanine debt financing as part of the capital for the acquisition.
- *Mezzanine financing to recapitalize a company:* Mezzanine debt may be used as part of a new capital structure for a firm to create a new balance sheet, such as having a senior term loan, senior subordinated mezzanine debt, junior subordinated mezzanine debt, convertible preferred stock, and common equity.
- *Mezzanine financing in commercial real estate:* Mezzanine capital fills the gap between first-mortgage financing, which usually has a loan-to-value ratio of 40% to 75%, and the equity contributed to the project. Typical equity contributions for real estate are in the 10% to 15% range. It is in between bank loans and equity that mezzanine financing exists, historically supplying 10% to 40% of a project's capital structure.

- *Mezzanine financing in a leveraged buyout:* Mezzanine financing is an established component of many leveraged buyouts. An LBO requires a large amount of debt, and not all debt can be senior. A significant amount of the financing may come from mezzanine investors.
- *Mezzanine financing as bridge financing:* Often, a good portion of the initial debt in an LBO is raised as bridge financing. **Bridge financing** is a form of gap financing—a method of debt financing that is temporarily used to maintain liquidity while waiting for an anticipated and reasonably expected inflow of cash.

Investors in Mezzanine Debt

This section reviews the major types of investors in mezzanine debt:

1. *Mezzanine funds:* Mezzanine funds are typically structured as drawdown funds. Investors in mezzanine funds are generally major institutional investors such as pension funds, sovereign wealth funds, endowments, and foundations. These institutional investors do not have the internal infrastructure or expertise to invest directly in the mezzanine market. Therefore, they enter this alternative investment strategy as limited partners through a mezzanine fund.

   Mezzanine funds tend to charge a fee structure similar to other private equity style funds: a management fee in the 1% to 2% range and an incentive fee of 20%. Mezzanine funds are managed by a general partner who has full investment discretion. Some mezzanine funds are managed by merchant banks that have experience with gap financing or by mezzanine professionals who previously worked in the mezzanine departments of insurance companies and banks.

   Mezzanine funds seek total rates of return in the 12% to 17% range. Contrasted to debt, mezzanine financing is the most expensive because it is the last to be repaid, ranking at the bottom of the creditor spectrum, just above equity. Mezzanine funds are inundated with financial engineers who are experienced at structuring and negotiating loans that incorporate the use of equity kickers and warrants.

   Mezzanine funds look for businesses that have a high potential for growth and earnings but do not have a sufficient cash flow to receive full funding from banks or other senior creditors. Banks may be unwilling to lend because of a short operating history or a high debt-to-equity ratio. Mezzanine funds look for companies that can repay the mezzanine debt over the next four to seven years through a debt refinancing, an initial equity offering, or being acquired. Mezzanine funds are typically considerably smaller than

the huge ($20 billion plus) leveraged buyout funds. This reflects the fact that mezzanine financing is distinctly a middle-market phenomenon and cannot support megafunds of the type commonly associated with LBOs.

Mezzanine funds are risk lenders. This means that in a liquidation of the company, mezzanine investors expect little or no recovery of their principal. Mezzanine debt is rarely secured. As the last rung of the financing ladder, it is often viewed as a form of equity by the more senior lenders.

2. *Insurance companies:* Insurance companies are a major source of mezzanine financing. They are natural providers of mezzanine debt because the durations of their liabilities (life insurance policies and annuities) are best matched with longer-term debt instruments. These investors take more of a fixed-income approach and place a high value on the scheduled repayment of principal. Insurance companies are more concerned with a higher coupon payment than with the total return, including equity warrants. Therefore, insurance companies act more like traditional lenders than like equity investors. They provide mezzanine financing to higher-quality credit names and emphasize preservation versus appreciation of capital.

3. *Traditional senior lenders:* Interestingly, banks and other providers of senior secured debt often participate in mezzanine financing. This financing takes the form of so-called **stretch financing**, where a bank lends more money than it believes would be prudent with traditional lending standards and traditional lending terms. This excess of debt beyond the collateral value of a company's business assets is the "stretch" part of the financing. Senior lenders may ask for an equity kicker, such as warrants, to compensate the institution for stretching financing beyond the assets available.

Characteristics of Mezzanine Debt

Mezzanine debt has a number of characteristics that help distinguish it from other sources of financing and types of investments:

- *Board representation:* In some cases, mezzanine lenders may request board observation rights; in certain cases, mezzanine lenders may insist on a seat on the board of directors with full voting rights.
- *Restrictions on the borrower:* Although mezzanine debt is typically unsecured, it may still come with restrictions on the borrower. The mezzanine lender may have the right to approve or disapprove of additional debt and require that any new debt be subordinated to the original mezzanine debt. The lender may also enjoy final approval over any contemplated acquisitions, changes in the management team, or payment of dividends.

- *Flexibility:* There are no set terms to mezzanine financing. The structure of mezzanine debt can be as flexible as needed to accommodate the parties involved. For example, mezzanine debt can be structured so that no interest payments begin for two to three years.
- *Negotiations with senior creditors:* The subordination of mezzanine debt is typically accomplished with an intercreditor agreement. As discussed in the Real Estate section, an intercreditor agreement is an agreement with the company's existing creditors that places restrictions on both the senior creditor and the mezzanine investor. The intercreditor agreement may be negotiated separately between the senior creditors and the mezzanine investor, or it may be incorporated directly into the loan agreement between the mezzanine investor and the company. Intercreditor agreements usually restrict amendments to the credit facility so that the terms of the intercreditor agreement cannot be circumvented by new agreements between the individual lenders and the borrower.
- *Subordination:* The subordination (lowered priority) may be either a blanket subordination or a springing subordination. A **blanket subordination** prevents any payment of principal or interest to the mezzanine investor until after the senior debt has been fully repaid. A **springing subordination** allows the mezzanine investor to receive interest payments while the senior debt is still outstanding. However, if a default occurs or a covenant is violated, the subordination springs up to stop all payments to the mezzanine investor until either the default is cured or the senior debt has been fully repaid.
- *Acceleration:* The violation of any covenant may result in acceleration. **Acceleration** is a requirement that debt be repaid sooner than originally scheduled, such as when the senior lender can declare the senior debt due and payable immediately. This typically forces a default and allows the senior lender to enforce the collateral security.
- *Assignment:* Senior lenders typically restrict the rights of the mezzanine investor to assign, or sell, its interests to a third party. However, senior lenders generally allow an assignment, providing the assignee executes a new intercreditor agreement with the senior lender.
- *Takeout provisions:* A **takeout provision** allows the mezzanine investor to purchase the senior debt once it has been repaid to a specified level. This is one of the most important provisions in an intercreditor agreement and goes to the heart of mezzanine investing. By taking out the senior debt, the mezzanine investor becomes the most senior level of financing in the company and, in fact, can take control of the company. At this point, the mezzanine investor usually converts the debt into equity through either convertible bonds or warrants and becomes the largest shareholder of the company.

5.1.6

Advanced Mezzanine Debt Features

LEARNING OBJECTIVES

Upon completion of this lesson, candidates should be able to:

Demonstrate knowledge of mezzanine debt

Including:

- ☐ Describe subordinated debt with step-up rates
- ☐ Understand and apply subordinated debt with payment-in-kind (PIK) interest
- ☐ Describe subordinated debt with profit participation
- ☐ Interpret subordinated debt with warrants
- ☐ Understand project finance and public-private partnerships

KEYWORDS

subordinated debt with step-up rates

ticking fee

subordinated debt with profit participation scheme

project finance

subordinated debt with warrants

Here, we introduce advanced mezzanine debt features and their potential complexity.[1]

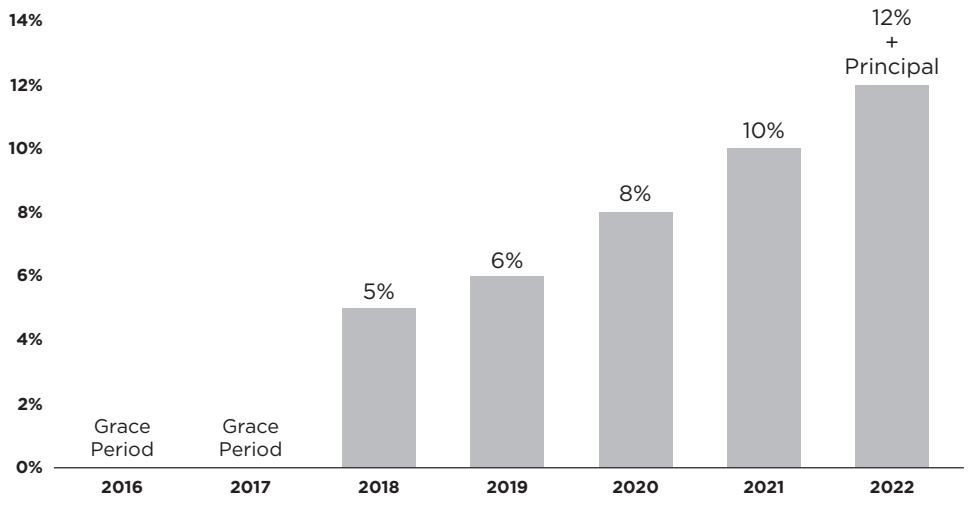
The next five sections present an overview of: (1) step-up rates; (2) subordinated debt with PIK interest; (3) subordinated debt with profit participation; (4) subordinated debt with warrants; and (5) project finance.

Subordinated Debt with Step-Up Rates

Subordinated debt with step-up rates is a mezzanine debt product that is used in cases in which a firm cannot take on more debt with a fixed-rate scheme, because the current levels of senior and subordinated debt are exhausting the current cash flows. Interest rates in subordinated debt with step-up rates increase as the debt ages. The step-up schedule can be adapted to the firm's projected cash flows following a time-based or a criteria-based schedule. More often, a hybrid model that combines time-based or a criteria-based schedule.

Consider firm XYZ, which cannot take on more debt with a fixed-compensation mechanism due to the high levels of senior debt it already has on its balance sheet and short-term forecasts of insufficient cash flow to support fixed rate debt. The firm is offered subordinated debt with the time-based step-up rate mechanism depicted in Exhibit 1, in which interest payments increase toward the end of the life of the loan (a time at which, presumably, the company will have both created additional cash flows to service the debt and paid down outstanding senior debt).

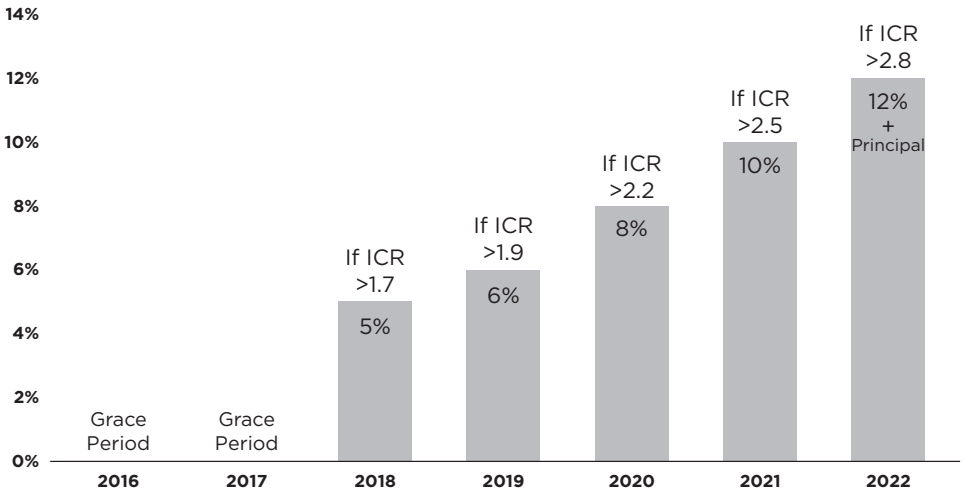
EXHIBIT 1: Example of a Time-Based Step-Up Rate Schedule



A problem with the time-based step-up rate is that there is no guarantee that the company will have experienced sales and margins high enough to honor its debt in the years in which interest rates increase. An alternative consists of designing a mechanism in which interest rates increase only if certain financial parameters have been met, such as in the next example.

Suppose that firm XYZ will pay higher interest rates in future years only if the interest coverage ratio (ICR) is greater than a certain value, as shown in Exhibit 2. For example, the firm will pay an interest rate of 8% in 2020 if the ICR exceeds 2.2 that year. Use of the ICR is just one example of a criterion; any agreed-upon criterion could be used.

EXHIBIT 2: Example of a Criteria-Based Step-Up Rate Schedule



The time-based and criteria-based step-up rate mechanisms are often too rigid. In practice, market participants use a hybrid mezzanine rate step-up model. A hybrid mezzanine rate step-up model has a step-up schedule in which a certain level of fixed interest rates are paid each year, independent of firm performance (this would be the time-based step-up rate part), and additional interest is paid depending on firm performance and based on an agreed criterion (this would be the criteria-based step-up rate part).

Subordinated Debt with PIK Interest

Subordinated debt with payment-in-kind (PIK) interest is a type of obligation that does not provide any cash flows (interest or principal repayment) from the borrower to the lender prior to the maturity of the loan (or the refinance date), but rather accrues an increasing debt balance. This means that both interest and principal payments become due in one balloon (bullet) payment when the debt matures.

Consider a 5-year, £1,000,000 non-amortizing loan at 12% PIK annual compounding interest rate. The total PIK interest to be paid by the borrower can be calculated as follows. The PIK interest owed for the first year would be £120,000 (i.e., £1,000,000 × 0.12), which is paid in a security issued by the borrower and is added to the principal amount of the debt, increasing the total amount owed to £1,120,000 at the end of the first year. During the second year, the 12% annual rate is applied against the new principal balance, resulting in a total amount of £134,400 (i.e., £1,120,000 million × 0.12). The same process continues until the fifth year (see Exhibit 3). The total PIK interest, which will be paid in the fifth year, amounts to £762,342 (rounded), which when combined with the principal determines a balloon payment of £1,762,342.

EXHIBIT 3: PIK Interest Example

Year	Beginning Debt Balance	PIK interest	Ending Debt Balance
1	£1,000,000	£120,000	£1,120,000
2	£1,120,000	£134,400	£1,254,400
3	£1,254,400	£150,528	£1,404,928
4	£1,404,928	£168,591	£1,573,519
5	£1,573,519	£188,822	£1,762,341
Total PIK Interest		£762,341	

APPLICATION A

A 5-year bond with an initial principal amount of $2,000,000 is a nonamortizing loan with a 10% PIK annual compounding interest rate. Calculate all the cash payments that investors will receive, assuming that there is no default.

Without amortization and with the PIK feature, there will be no cash interest payments prior to maturity. The principal of the bond will increase at the 10% PIK annual compounding interest rate through the entire maturity of the bond. Growing $2,000,000 for 5 years at 10% results in a value of $3,221,020, which is the total cash due when the bond matures in 5 years. The value may be found using the same math as is used to compute future values.

Interest on PIK loans provides the lender with three sources of cash flow: (1) an arrangement and/or a commitment fee; (2) the (accrued or compounded) interest; and (3) sometimes, a ticking fee. A **ticking fee** is a payment paid by the borrower to the lender to account for the time lag between the commitment on a loan and the actual disbursement.

As noted in the prior reading, PIK toggle notes or bonds are a variant of a PIK bond that allows the borrower to pay interest (partly or in full) in each period, or to accrue a part or the whole interest payment due. Usually, if the borrower pays only part or nothing at all, the overall interest rate is increased following certain rules (often between 25 and 100 basis points). PIK toggle notes usually stipulate specific cash flow triggers that would effectively trigger interest payments during a certain period. PIK toggle notes often come with light covenants.

Subordinated Debt with Profit Participation

A **subordinated debt with profit participation scheme** provides a risk balance between debt and equity to mezzanine lenders, offering a level of downside protection and also a way to participate in the upside potential. The following example illustrates a profit participation scheme.

Suppose a £10 million loan is arranged as part of a profit participation model. The loan will be repaid at maturity. The profit participation scheme (PPS) is 4% of earnings before interest and taxes (EBIT), with annual floors and caps of £160,000 and £250,000, respectively. The forecasted EBIT for the next 4 years are £3,200,000, £3,500,000, £3,800,000, and £5,200,000.

In the first year, the PPS provides a payment of £128,000 (i.e., 4% of £3,200,000). This is lower than the floor payment of £160,000; therefore, the floor would be binding in 2016 and would require a payment of £160,000. The same phenomenon happens in the next 2 years. However, in the fourth year the continuing rise in EBIT causes the PPS is equal to £208,000, which is greater than the floor of £160,000 but lower than the cap of £250,000. Therefore, this is the payment for that year.

Subordinated Debt with Warrants

None of the mezzanine debt products presented so far are likely to be attractive to a mezzanine lender when a firm has exhausted its capacity to assume further senior and subordinated debt and has unpredictable future cash flows. In such cases, to justify assuming the risk that comes with the investment, the lender may seek an equity exposure to the firm. A warrant is a security that fits perfectly in this situation, as it allows the investor to benefit from the potential upside in the equity value of the firm. Long positions in equity warrants included with a subordinated debt issue can be call and put warrants or a combination of both.

As noted in the previous reading, warrants are similar to equity options, but they differ in that they: (1) are generally issued by unlisted firms and are thus regarded as OTC securities; (2) are dilutive when issued by the firm itself since their exercise is satisfied by additional shares of common stock; (3) tend to have much longer maturities (often years) than traditional equity options (which usually have maturities measured in months); and (4) are not standardized securities.

Warrants are often attached to bonds or preferred stocks as a sweetener, as they allow investors to potentially receive an extra return (coming from the warrant) above the coupons received from the bond (or the fixed dividend received in the case of a preferred stock). In turn, warrants allow borrowers to make considerably lower interest payments compared to subordinated loans of similar risk with no warrants attached. Subordinated debt with warrants is different from other mezzanine securities because it eventually grants investors actual equity in the firm.

Consider the following example: firm ABC issues bonds with a $100 face value. The bonds also have warrants attached, providing each bondholder the right to purchase 10 shares of firm ABC stock at $15 per share over the next five years.

Subordinated debt with warrants differs from a convertible bond because in the case of convertibles, the option is exercised by handing over the underlying bond rather than being exercised independently of the debt security. Subordinated debt with warrants offers two distinct advantages to issuers: lower interest costs and less restrictive covenants compared to most other bonds. Investors in convertibles are willing to accept lower yields and less restrictive covenants in exchange for receiving both a more senior security that provides comparative income stability (the debt) and the possibility of enjoying a high return if the underlying value of the shares rises (the warrant).

Project Finance and Public–Private Partnerships

This final section on complex or advanced mezzanine financing briefly discusses the uses of mezzanine debt and financing in project finance. **Project finance** is capital intended to support a specific purpose, such as real estate projects and infrastructure projects, either on a private basis or in a public–private partnership. Public–private partnerships (PPPs) are discussed later in the section. The majority of the funding in project finance (around 75%) comes from debt products. The high long-term cost of using standard fixed-coupon, long-term bonds (10 to 15 years) would render many of these projects financially unfeasible. In these cases, lenders will be willing

to fund projects only if they can provide senior, nonrecourse loans that are secured by all the assets of the project.

Public–private partnerships (PPPs)[2] represent cooperation between government and business jointly working toward a specific mutual target, assuming investment risks and sharing revenues and costs based on a predefined distribution. Projects are financed through a mixture of equity and debt financing, with debt financing in the neighborhood of 70% or more, and may often use mezzanine finance products. The public authority (public party) specifies its requirements in terms of outputs, which set out the public services that the facility (public infrastructure) is intended to provide but does not specify how these services or assets are to be provided. The private sector designs, finances, builds, and operates the facility to meet these long-term output specifications.

PPP project financing is usually arranged by creating a special purpose vehicle and designing a risk-sharing, cash flow-based lending structure in which limits are set to liabilities and off-balance-sheet financing. The project company (private party) receives payments (from the public-sector party or from the general public as users of the facility) over the life of the PPP contract on a pre-agreed-upon basis, which are intended to repay the financing costs and give a return to investors. The facility remains in public-sector ownership, or it is reverted to public-sector ownership at the end of the PPP contract.

NOTES

1 This section is based mainly on Nijs (2012).
2 See Bult-Spiering and Dewulf (2006) and Svedik and Tetrevova (2012).

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Nijs, L. 2012. *Mezzanine Financing*. Croydon, UK: Wiley Finance.
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