

12.2: Explain the Pricing of Long-Term Liabilities

Businesses have several ways to secure financing and, in practice, will use a combination of these methods to finance the business. As you've learned, net income does not necessarily mean cash. In some cases, in the long-run, profitable operations will provide businesses with sufficient cash to finance current operations and to invest in new opportunities. However, situations might arise where the cash flow generated is insufficient to cover future anticipated expenses or expansion, and the company might need to secure additional funding.

If the extra amount needed is somewhat temporary or small, a short-term source, such as a loan, might be appropriate. When additional long-term funding needs arise, a business can choose to sell stock in the company (equity-based financing) or obtain a **long-term liability** (debt-based financing), such as a loan that is spread over a period longer than a year.

Types of Long-Term Funding

If a company needs additional funding for a major expenditure, such as expansion, the source of funding would typically be repaid over several years, or in the case of equity-based financing, over an indefinite period of time. With equity-based financing, the company sells an interest in the company's ownership by issuing shares of the company's common stock. This financing option is equity financing. Here, we will focus on two major long-term debt-based options: long-term loans and bonds.

Debt as an option for financing is an important source of funding for businesses. If a company chooses a debt-based option, the business can borrow money on an intermediate (typically two to four years) or long-term (longer than four years) basis from lenders. In the case of bonds, the funds would be provided by investors. While loans and bonds are similar in that they borrow money on which the borrower will pay interest and eventually repay the lenders, they have some important differences. First, a company can raise funds by borrowing from an individual, bank, or other lender, while a bond is typically sold to numerous investors. When a company chooses a loan, the business signs what is known as a note, and a legal relationship called a **note payable** is created between the borrower and the lender. The document lists the conditions of the financial arrangement, a fixed predetermined interest rate (or, if the agreement allows, a variable interest rate), the amount borrowed, the borrowing costs to be charged, and the timing of the payments. In some cases, companies will secure an **interest-only loan**, which means that for the life of the loan the organization pays only the interest expense that has accrued and upon maturity repays the original amount that it borrowed and still owes. For individuals, a student loan, car loan, or a mortgage can all be types of notes payable. For Olivia's car purchase in Why It Matters, a document such as a **promissory note** is typically created, representing a personal loan agreement between a lender and borrower. Figure 12.2.1 shows a sample promissory note that might be used for a simple, relatively intermediate-term loan. If we were considering a loan that would be repaid over a several-year period the document might be a little more complicated, although it would still have many of the same components of Olivia's loan document.

PROMISSORY NOTE	
Loan Agreement Effective Date: [DD/MM/YYYY]	
Borrower: _____	Lender: _____
_____ <i>Address Line 1 (street address)</i>	_____ <i>Address Line 1 (street address)</i>
_____ <i>Address Line 2 (city/state/zip code)</i>	_____ <i>Address Line 2 (city/state/zip code)</i>
Promise to pay: in U.S. Dollars \$ _____ within _____ months from today, in equal continuous monthly payments of \$ _____ each on the _____ day of each month, beginning on _____ and ending on _____. Borrower promises to pay the Lender the principal listed above plus interest at the APR % rate of: _____.	
Value Received for Property as described: _____	
<i>If this note is not paid in full upon date due, I/we agree to pay all reasonable costs for collection, including all attorney fees.</i>	

Figure 12.2.1: Promissory Note. A personal loan agreement is a formal contract between a lender and borrower. The document lists the conditions of the loan, including the amount borrowed, the borrowing costs to be charged, and the timing of the payments. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

If debt instruments are created with a variable interest rate that can fluctuate up or down, depending upon predetermined factors, an inflation measurement must also be included in the documentation. The Federal Funds Rate, for example, is a commonly used tool for potential adjustments in interest rates. To keep our discussion simple, we will use a fixed interest rate in our subsequent calculations.

Another difference between loans and bonds is that the note payable creates an obligation for the borrower to repay the lender on a specified date. To demonstrate the mechanics of a loan, with loans, a note payable is created for the borrower when the loan is initiated. This example assumes the loan will be paid in full by the maturity or due date. Typically, over the life of the loan, payments will be composed of both principal and interest components. The principal component paid typically reduces the amount that the borrower owes the lender. For example, assume that a company borrowed \$10,000 from a lender under the following terms: a five-year life, an annual interest rate of 10%, and five annual payments at the end of the year.

Under these terms, the annual payment would be \$2,637.97. The first year's payment would be allocated to an interest expense of \$1,000, and the remaining amount of the payment would go to reduce the amount borrowed (principal) by \$1,637.97. After the first year's payment, the company would owe a remaining balance of \$8,362.03 (\$10,000 – \$1637.97.)

Typical long-term loans have other characteristics. For example, most long-term notes are held by one entity, meaning one party provides all of the financing. If a company bought heavy-duty equipment from Caterpillar, it would be common for the seller of the equipment to also have a division that would provide the financing for the transaction. An additional characteristic of a long-term loan is that in many, if not most, situations, the initial creator of the loan will hold it and receive and process payments until it matures.

Returning to the differences between long-term debt and bonds, another difference is that the process for issuing (selling) bonds can be very complicated, especially for companies that are subject to regulation. The bond issue must be approved by the appropriate regulatory agency, and then outside parties such as investment banks sell the bonds to, typically, a large audience of investors. It is not unusual for several months to pass between the time that the company's board of directors approves the bond offering, gets regulatory approval, and then markets and issues the bonds. This additional time is often the reason that the market rate for similar bonds in the outside business environment is higher or lower than the stated interest rate that the company committed to pay when the bond process was first begun. This difference can lead to bonds being issued (sold) at a discount or premium.

Finally, while loans can normally be paid off before they are due, in most cases bonds must be held by an owner until they mature. Because of this last characteristic, a bond, such as a thirty-year bond, might have several owners over its lifetime, while most long-term notes payable will only have one owner.

ETHICAL CONSIDERATIONS

Bond Fraud

The U.S. Department of the Treasury (DOT) defines historical bonds as “those bonds that were once valid obligations of American entities but are now worthless as securities and are quickly becoming a favorite tool of scam artists.”¹ The DOT also warns against scams selling non-existent “limited edition” U.S. Treasury securities. The scam involves approaching broker-dealers and banks to act as fiduciaries for transactions. Further, the DOT notes: “The proposal to sell these fictitious securities makes misrepresentations about the way marketable securities are bought and sold, and it also misrepresents the role that we play in the original sale and issuance of our securities.”² Many fraudulent attempts are made to sell such bonds.

According to *Business Insider*, in the commonest scam, a fake bearer bond is offered for sale for far less than its stated cover price. The difference in the cost and the cover price entices the victim to buy the bond. Again, from *Business Insider*: “Another variation is a flavor of the ‘Nigerian prince’ scheme; the fraudster will ask for the victim’s help in depositing a recently obtained ‘fortune’ in bonds, promising the victim a cut in return.”³

A diligent accountant is both educated about the investments of their company or organization and is skeptical about any investment that looks too good to be true.

YOUR TURN

Current versus Long-Term Liabilities

Below is a portion of the 2017 Balance Sheet of **Emerson, Inc.** (shown in millions of dollars).⁴ There are several observations we can make from this information.

	2016	2017
Current liabilities		
Short-term borrowings and current maturities of long-term debt	\$2,584	862
Long-term debt	4,051	3,794

Notice the company lists separately the Current Liabilities (listed as “Short-term borrowings and current maturities of long-term debt”) and Long-term Liabilities (listed as “Long-term debt”). Also, under the “Current liabilities” heading, notice the “Short-term borrowings and current maturities of long-term debt” decreased significantly from 2016 to 2017. In 2016, Emerson held \$2.584 billion in short-term borrowings and current maturities of long-term debt. This amount decreased by \$1.722 billion in 2017, which is a 67% decrease. During the same timeframe, long-term debt decreased \$257 million, going from \$4.051 billion to \$3.794 billion, which is a 6.3% decrease.

Thinking about the primary purpose of accounting, why do you think accountants separate liabilities into current liabilities and long-term liabilities?

Answer

The primary purpose of accounting is to provide stakeholders with financial information that is useful for decision making. It is important for stakeholders to understand how much cash will be required to satisfy liabilities within the next year (liquidity) as well as how much will be required to satisfy long-term liabilities (solvency). Stakeholders, especially lenders and owners, are concerned with both liquidity and solvency of the business.

Fundamentals of Bonds

Now let us look at bonds in more depth. A **bond** is a type of financial instrument that a company issues directly to investors, bypassing banks or other lending institutions, with a promise to pay the investor a specified rate of interest over a specified period of time. When a company borrows money by selling bonds, it is said the company is “issuing” bonds. This means the company exchanges cash for a promise to repay the cash, along with interest, over a set period of time. As you’ve learned, bonds are formal legal documents that contain specific information related to the bond. In short, it is a legal contract—called a bond certificate (as shown in Figure 12.2.2) or an indenture—between the issuer (the business borrowing the money) and the lender (the investor lending the money). Bonds are typically issued in relatively small denominations, such as \$1,000 so they can be placed in the market and are accessible to a greater market of investors compared to notes. The **bond indenture** is a contract that lists the

features of the bond, such as the amount of money that will be repaid in the future, called the **principal** (also called face value or maturity value); the **maturity date**, the day the bond holder will receive the principal amount; and the **stated interest rate**, which is the rate of interest the issuer agrees to pay the bondholder throughout the term of the bond.



Figure 12.2.2: Bond Certificate. If you bought this \$1,000 bond on July 1, 2018 and received this bond certificate, it had three important pieces of information: the maturity date (June 30, 2023, 5 years from the issue date when the company will pay back the \$1,000; the principal amount (\$1,000) which is the amount you will receive in 2023; and the stated annual interest rate (5%) which they will use to determine how much cash to send you each year ($0.05 \times \$1,000 = \50 interest a year for 5 years). (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

For a typical bond, the issuer commits to paying a stated interest rate either once a year (annually) or twice a year (semiannually). It is important to understand that the stated rate will not go up or down over the life of the bond. This means the borrower will pay the same semiannual or annual interest payment on the same dates for the life of the bond. In other words, when an investor buys a typical bond, the investor will receive, in the future, two major cash flows: periodic interest payments paid either annually or semiannually based on the stated rate of the bond, and the maturity value, which is the total amount paid to the owner of the bond on the maturity date.

LINK TO LEARNING

The website for the [nonprofit Kiva](#) allows you to lend money to people around the world. The borrower makes monthly payments to pay the loan back. The companies Prosper and [LendingClub](#) let you borrow or lend money to people in the U.S. who then make monthly payments, with interest, to pay it back.

The process of preparing a bond issuance for sale and then selling on the primary market is lengthy, complex, and is usually performed by underwriters—finance professionals who specialize in issuing bonds and other financial instruments. Here, we will only examine transactions concerning issuance, interest payments, and the sale of existing bonds.

There are two other important characteristics of bonds to discuss. First, for most companies, the total value of bonds issued can often range from hundreds of thousands to several million dollars. The primary reason for this is that bonds are typically used to help finance significant long-term projects or activities, such as the purchase of equipment, land, buildings, or another company.

CONCEPTS IN PRACTICE

Apple Inc. Issues Bonds

On May 11, 2017, **Apple Inc.** issued bonds to get cash. **Apple Inc.** submitted a form to the Securities and Exchange Commission (www.sec.gov) to announce their intentions.

Apple Bonds Issued May 11, 2017		
Maturity	Interest Rate	Bond Amount
2020	Floating rate (variable)	\$ 500,000,000.00
2022	Floating rate (variable)	750,000,000.00
2020	1.80% fixed	1,000,000,000.00
2022	2.30% fixed	1,000,000,000.00
2024	2.85% fixed	1,750,000,000.00
2027	3.20% fixed	<u>2,000,000,000.00</u>
		\$7,000,000,000.00

On May 3 of the same year, **Apple Inc.** had issued their 10-Q (quarterly report) that showed the following assets.

APPLE INC. Condensed Consolidated Balance Sheets (Unaudited) (In millions, except number of shares which are reflected in thousands and par value)		
Assets	April 1, 2017	September 24, 2016
Current assets:		
Cash and cash equivalents	\$15,157	\$20,484

Apple Inc. reported it had \$15 billion dollars in cash and a total of \$101 billion in Current Assets. Why did it need to issue bonds to raise \$7 billion more?

Analysts suggested that **Apple** would use the cash to pay shareholder dividends. Even though **Apple** reported billions of dollars in cash, most of the cash was in foreign countries because that was where the products had been sold. Tax laws vary by country, but if **Apple** transferred the cash to a US bank account, they would have to pay US income tax on it, at a tax rate as high as 39%. So, **Apple** was much better off borrowing and paying 3.2% interest, which is tax deductible, than bringing the cash to the US and paying a 39% income tax.

However, it's important to remember that in the United States, Congress can change tax laws at any time, so what was then current tax law when this transaction occurred could change in the future.

The second characteristic of bonds is that bonds are often sold to several investors instead of to one individual investor.

When establishing the stated rate of interest the business will pay on a bond, bond underwriters consider many factors, including the interest rates on government treasury bonds (which are assumed to be risk-free), rates on comparable bond offerings, and firm-specific factors related to the business's risk (including its ability to repay the bond). The more likely the possibility that a company will default on the bond, meaning they either miss an interest payment or do not return the maturity amount to the bond's owner when it matures, the higher the interest rate is on the bond. It is important to understand that the stated rate will not change over the life of any one bond once it is issued. However, the stated rate on future new bonds may change as economic circumstances and the company's financial position changes.

Bonds themselves can have different characteristics. For example, a **debenture** is an unsecured bond issued based on the good name and reputation of the company. These companies are not pledging other assets to cover the amount in case they fail to pay the debt, or **default**. The opposite of a debenture is a **secured bond**, meaning the company is pledging a specific asset as collateral for the bond. With a secured bond, if the company goes under and cannot pay back the bond, the pledged asset would be sold, and the proceeds would be distributed to the bondholders.

There are **term bonds**, or single-payment bonds, meaning the entire bond will be repaid all at once, rather than in a series of payments. And there are **serial bonds**, or bonds that will mature over a period of time and will be repaid in a series of payments.

A **callable bond** (also known as a redeemable bond) is one that can be repurchased or "called" by the issuer of the bond. If a company sells callable bonds with an 8% interest rate and the interest rate the bank is offering subsequently drops to 5%, the company can borrow at that new rate of 5%, call the 8% bonds, and pay them off (even if the purchaser does not want to sell them back). In essence, the institution would be lowering its rate of interest to borrow money from 8% to 5% by calling the bond.

Putable bonds give the bondholder the right to decide whether to sell it back early or keep it until it matures. It is essentially the opposite of a callable bond.

A **convertible bond** can be converted to common stock in a one-way, one-time conversion. Under what conditions would it make sense to convert? Suppose the face-value interest rate of the bond is 8%. If the company is doing well this year, such that there is an expectation that shareholders will receive a significant dividend and the stock price will rise, the stock might appear to be more valuable than the return on the bond.

THINK IT THROUGH

Callable versus Putable Bonds

Which type of bond is better for the corporation issuing the bond: callable or putable?

ETHICAL CONSIDERATIONS

Junk Bonds

Junk bonds, which are also called speculative or high-yield bonds, are a specific type of bond that can be attractive to certain investors. On one hand, junk bonds are attractive because the bonds pay a rate of interest that is significantly higher than the average market rate. On the other hand, the bonds are riskier because the issuing company is deemed to have a higher risk of defaulting on the bonds. If the economy or the company's financial condition deteriorates, the company will be unable to repay the money borrowed. In short, junk bonds are deemed to be high risk, high reward investments.

The development of the junk bond market, which occurred during the 1970s and 1980s, is attributed to Michael Milken, the so-called "junk bond king." Milken amassed a large fortune by using junk bonds as a means of financing corporate mergers and acquisitions. It is estimated that during the 1980s, Milken earned between \$200 million and \$550 million per year.⁵ In 1990, however, Milken's winning streak came to an end when, according to the *New York Times*, he was indicted on "98 counts of racketeering, securities fraud, mail fraud and other crimes."⁶ He later pleaded guilty to six charges, resulting in a 10-year prison sentence, of which he served two, and was also forced to pay over \$600 million in fines and settlements.⁷

Today, Milken remains active in philanthropic activities and, as a cancer survivor, remains committed to medical research.

Pricing Bonds

Imagine a concert-goer who has an extra ticket for a good seat at a popular concert that is sold out. The concert-goer purchased the ticket from the box office at its face value of \$100. Because the show is sold out, the ticket could be resold at a premium. But what happens if the concert-goer paid \$100 for the ticket and the show is not popular and does not sell out? To convince someone to purchase the ticket from her instead of the box office, the concert-goer will need to sell the ticket at a discount. Bonds behave in the same way as this concert ticket.

Bond quotes can be found in the financial sections of newspapers or on the Internet on many financial websites. Bonds are quoted as a percentage of the bond's maturity value. The percentage is determined by dividing the current market (selling) price by the maturity value, and then multiplying the value by 100 to convert the decimal into a percentage. In the case of a \$30,000 bond discounted to \$27,591.94 because of an increase in the market rate of interest, the bond quote would be $\$27,591.94 / \$30,000 \times 100$, or 91.9708. Using another example, a quote of 88.50 would mean that the bonds in question are selling for 88.50% of the maturity value. If an investor were considering buying a bond with a \$10,000 maturity value, the investor would pay 88.50% of the maturity value of \$10,000, or \$8,850.00. If the investor was considering bonds with a maturity value of \$100,000, the price would be \$88,500. If the quote were over 100, this would indicate that the market interest rate has decreased from its initial rate. For example, a quote of 123.45 indicates that the investor would pay \$123,450 for a \$100,000 bond.

Figure 12.2.3 shows a bond issued on July 1, 2018. It is a promise to pay the holder of the bond \$1,000 on June 30, 2023, and 5% of \$1,000 every year. We will use this bond to explore how a company addresses interest rate changes when issuing bonds.



Figure 12.2.3: Bond Certificate. A bond certificate shows the terms of the bond. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

On this bond certificate, we see the following:

- The \$1,000 principal or maturity value.
- The interest rate printed on the face of the bond is the stated interest rate, the contract rate, the face rate, or the **coupon rate**. This rate is the interest rate used to calculate the interest payment on bonds.

Footnotes

- ¹ U.S. Department of the Treasury. “Historical Bond Fraud.” September 21, 2012. <https://www.treasury.gov/about/organ...ond-Fraud.aspx>
- ² U.S. Department of the Treasury. “Examples of Known Phony Securities.” April 5, 2013. <https://www.treasury.gov/about/organ...curities.aspx>
- ³ Lawrence Delavigne. “Fake Bearer Bonds Were Just the Beginning of Huge Wave of Bond-Fraud.” *Business Insider*. October 12, 2009. <https://www.businessinsider.com/bond...e-rise-2009-10>
- ⁴ Emerson. *2017 Annual Report*. Emerson Electric Company. 2017. <https://www.emerson.com/documents/co...en-2883292.pdf>
- ⁵ James Chen. “Micheal Milken.” January 22, 2018. <https://www.investopedia.com/terms/m...haelmilken.asp>
- ⁶ Kurt Eichenwald. “Milken Set to Pay a \$600 Million Fine in Wall St. Fraud.” April 21, 1990. <https://www.nytimes.com/1990/04/21/b...pagewanted=all>
- ⁷ Michael Buchanan. “November 21, 1990, Michael Milken Sentenced to 10 Years for Security Law Violations.” November 20, 2011. reasonabledoubt.org/criminall...rime-history-1

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