CHAPTER 11

Long-Term Liabilities: Notes, Bonds, and Leases

SYNOPSIS

In this chapter, the author discusses accounting issues surrounding long-term liabilities. The specific issues discussed are (1) accounting for long-term notes payable; (2) accounting for bonds payable; (3) the differences between, and accounting for, operating and capital leases; (4) financial instruments and off-balance-sheet risks; and (5) the economic consequences faced by managers whose companies have long-term debt. The author discusses factors affecting bond prices in Appendix 11A. Investing in bonds is covered in Appendix 11B. Appendix 11C is about interest rate swaps and hedging.

The ethics vignette considers companies that structure their leasing contracts in a manner that allows them to avoid reporting their lease obligations as debts on their balance sheets.

The Internet research exercise examines current financial reports for Ready Mix, looking at how it has managed an awkward situation regarding violation of loan covenants.

The following key points are emphasized in Chapter 11:

1. Long-term notes payable, bonds payable, and leasehold obligations, and how companies use these instruments as important sources of financing.
2. Economic consequences created by borrowing.
3. Different forms of contractual obligations.
4. The effective interest rate and how it is determined for contractual obligations.
5. The effective interest method.
6. How changes in market interest rates can lead to misstated balance sheet values for long-term liabilities.
7. Operating leases, capital leases, and off-balance-sheet financing.

TEXT/LECTURE OUTLINE

Long-term liabilities: notes, bonds, and leases.

I. Long-term liabilities are probable future sacrifices of economic benefits from present obligations of a particular entity to transfer assets or to provide services to other entities in the future as a result of past
transactions or events. The obligation will require the disbursement of assets outside the time frame of current assets.

II. Economic consequences of reporting long-term liabilities.

A. Credit ratings.

B. Debt covenants.

1. Debt covenants can limit a company's operating, investing, and financing activities.

2. If a company violates a debt covenant, the borrower can require one of the following:

   a) The immediate repayment of the debt.

   b) Renegotiation of the debt at terms that are more costly to the borrower (i.e., higher interest rate or additional collateral).

C. Effects of "merger mania."

III. Basic definitions and different contractual forms.

A. Notes, bonds, and leases are supported by contracts.

1. The timing and magnitude of future cash outflows are specified in the contracts.

2. Types of contractual forms.

   a) Interest-bearing obligations require the following:

      (1) Periodic cash payments (interest) calculated as a stated percentage of the obligation's face value (principal or maturity value). The stated percentage is given in the debt contract, and the stated percentage is called the stated interest rate.

      (2) Payment of the face value at the end of the contract period.

   b) Non-interest-bearing obligations do not require periodic interest payments. Instead, they require only the payment of the face value at the end of the contract period.

   c) Installment obligations require periodic payments throughout the obligation's life, and the periodic payments include both principal and interest.
3. The contracts may specify the following:
   a) Collateral.
   b) Restrictions (i.e., debt covenants).

B. Types of long-term liabilities.
   1. Long-term notes payable.
   2. Bonds payable.
      a) Bonds are issued to raise large amounts of capital (usually from multiple creditors) to finance long-term projects.
      b) Secured bonds versus debentures.
      c) Interest is usually paid semiannually on bonds.
   3. Leases.

IV. Effective interest rate.
   A. The effective interest rate is the interest rate that a company actually incurs on an obligation.
   B. The effective interest rate is the rate that equates the undiscounted future cash flows of an obligation (e.g., periodic interest payments and the face value for interest-bearing obligations) with the present value of the obligation. That is, the effective interest rate is the rate used to discount the future cash flows of an obligation so that the present value of the future cash flows equals the fair market value of that which is received in the exchange.
   C. Relation of stated and effective interest rate for notes and bonds.
      1. Stated rate equals effective rate. The present value of future cash flows equals the face value of the debt; the note or bond is issued at face value.
      2. Effective rate exceeds stated rate. The present value of future cash flows is less than the face value, thereby resulting in a discount; the note or bond is issued for less than its face value. Discounts represent future interest expense.
      3. Stated rate exceeds effective rate. The present value of future cash flows is greater than the face value, thereby resulting in a premium; the note or bond is issued for more than its face value.

V. Accounting for long-term obligations: the effective interest method.
A. The effective interest method results in a constant percentage of the carrying value being charged to interest expense over the life of the debt and is the preferred amortization method.

B. Relationships under the effective interest method.

1. Book value (or carrying value) of the debt equals the debt's face value plus associated premium balance or it equals the debt's face value less associated discount balance.

2. Interest expense equals debt's book value at the start of the period times the effective interest rate.

3. Periodic interest payments equal debt's face value times the stated interest rate.

4. The amount of the discount amortized equals interest expense less the interest payment.

5. The amount of the premium amortized equals the interest payment less interest expense.

C. Journal entries need to be prepared to record interest expense incurred and discount/premium amortized on every interest payment date and at the end of the accounting period (i.e., an adjusting journal entry) if an interest payment date does not fall on the last day of the accounting period.

VI. Accounting for long-term notes and bonds payable.

A. Bond terminology.

1. Life: the time period from the date of issuance to the maturity date.

2. Maturity date: the end of a bond’s life, when the maturity value (which is usually equal to the principal value, par value, and face value) is paid to the bondholder.

3. Interest payment: the amount paid to the bondholders on semiannual payment (coupon) dates.

4. Proceeds: the amount collected when the bonds are issued.

5. Covenants: restrictions imposed on management by bondholders.

6. Unsecured bonds: bonds with no assets backing them.

7. Debentures: bonds with no assets backing them.

8. Call provision: a right granted to the issuing corporation to repurchase the outstanding bonds on or after a designated date for a specified price.
B. The price of a bond: See Appendix 11A

C. The effective rate and the stated rate:

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<th>If Effective rate is</th>
<th>Then price is</th>
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<td>Equal to</td>
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<tr>
<td>More than</td>
<td>Par less discount</td>
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<td>Less than</td>
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D. Accounting for bonds payable – the effective interest method

1. Issued at par
2. Issued at discount.
3. Issued at premium.

E. The effective interest method and changing interest rates.

F. Bond redemptions.

1. At maturity.
2. Before maturity.
   a) Call provisions grant the issuing company the right to repurchase bonds prior to the maturity date.
   b) Calling bonds normally gives rise to gains or losses. If the gain or loss is material, it should be reported on the income statement as an extraordinary item.

VII. Financial instruments, fair market values, and off-balance-sheet risks. Disclosure of market values required for certain financial instruments, whether or not they are recognized in the financial statements.

A. Short-term investments in equity securities (Chapter 8).

B. Notes receivable and investments in debt securities.

C. For long-term debts, the market value approximates the present value of future cash outflows associated with the debt, discounted at the current market rate of interest for similar obligations.
Chapter 11

D. Other financial instruments not listed on the balance sheet, such as guarantees of the credit of third parties, commitments to provide financing, and derivatives.

VIII. Leases.

A. A contract granting use or occupation of property during a specified period of time in exchange for rent payments. Leases allow companies to use or occupy property without many of the associated costs and risks of ownership.

B. Types of leases.

1. Operating leases.
   a) The lessor (i.e., the owner) temporarily transfers the right to use the property to the lessee for a specified period of time in exchange for periodic payments. The lessor is normally responsible for the normal maintenance of the property over the life of the lease. The right to use the property reverts to the lessor at the end of the lease.

   b) The property is reported as an asset on the lessor’s books. The periodic rental payments are reported on the lessor's books as Rent Revenue; the periodic rental payments are reported on the lessee's books as Rent Expense.

2. Capital leases.

   a) Leases that, in substance, transfer the rights and risks of ownership to the lessee.

   b) Criteria for a lease to be classified as a capital lease—if a lease meets one of the following criteria, the property is considered purchased rather than leased.

      (1) The leased property's fair market value approximately equals the present value of the lease payments.

      (2) The term of the lease is 75 percent or more of the leased property's useful life.

      (3) The lessee has the right to purchase the property from the lessor for less than what the property is actually worth, called a bargain purchase price.

      (4) Ownership is transferred to the lessee by the end of the lease term.

   c) Accounting for capital leases on the lessee's books.
(1) At the inception of the lease agreement, the lessee records an asset and a liability equal to the present value of the future lease payments.

(2) The asset should be depreciated, if appropriate, over its useful life.

(3) The periodic rental payments serve to reduce the lease liability and to recognize interest expense. Interest expense is computed using the effective interest method.

IX. International perspective: The importance of debt financing in other countries

X. ROE exercise: managing long-term debt

XI. Appendix 11A: The determination of bond prices.

A. Risk-free return—the annual return that an individual would earn by investing in a riskless security such as a treasury note. Factors increasing the risk-free rate tend to decrease bond prices, while factors decreasing the risk-free rate tend to increase bond prices.

B. Risk premium—the interest rate over and above the risk-free rate to cover the issuing company’s default risk. Factors increasing a company’s riskiness tend to decrease bond prices, while factors decreasing a company’s riskiness tend to increase bond prices.

XII. Appendix 11B: Investing in bonds.

XIII. Appendix 11C: Interest rate swaps and hedging

XIV. Review problem

XV. Ethics in the real world.

XVI. Internet research exercise.

LECTURE TIPS

1. The concept of effective interest rates is sometimes troublesome, especially in cases where these rates are imputed for notes (i.e., when no market exists to establish the effective interest rate). Further, many students do not understand how the effective and stated interest rates could be different. It should be stressed that the stated interest rate is simply a device to structure the future cash flows; it does not have to approximate the rate that a company should actually be paying.

In addition, discounts or premiums are often viewed as something inherently positive or negative. An approach that may help address this problem is to offer students the opportunity to “invest” in several different notes or bonds—all with the
same effective interest rates, the same present values and maturity dates, but with different face values and stated rates. This should drive home the point that discounts and premiums arise because of the way the future cash flows are structured.

Many students find time lines showing the future cash flows and the change in the debt's carrying value over the life of the debt to be useful in understanding the relation between discounts/premiums and interest expense.

Figures 11–7 and 11–10, end-of-chapter exercises 11–3 through 11–8, and problem 11–5 are all useful for demonstrating the points involved.

2. Calculating the present value of the future cash flows, particularly for bonds, is sometimes troublesome. The most common mistake is not adjusting the annual effective and stated interest rates to semi-annual interest rates. It should be stressed that present value techniques rely on the compounding period. Since bonds usually pay interest every six months, the appropriate compounding period is six months. End-of-chapter exercise 11–2 emphasizes the concept of compounding.

3. End-of-chapter problems 11–13 to 11-15 and issues for discussion 11–3 and 11–7 are useful for considering the financial statement effects of accounting for leases. The economic differences between capital and operating leases should be discussed as the basis for accounting for each. The lease agreement's economic substance should be stressed over its legal form.

ANSWERS TO IN-TEXT DISCUSSION QUESTIONS

486. Cash increased and long-term debt increased by the amount of proceeds from new debt issued in excess of repayments during 2007 and 2008. Long-term debt and cash decreased in 2006 by the amount of the repayments of long-term debt.

487 Profile 1 would be the Bank of New York. Banks balance sheets consist mostly of financial assets (loans and investments). Banks have little in the way of fixed assets relative to total assets. Liabilities of banks are mostly current rather than long-term, represented by deposit liabilities to customers.

Profile 2 would be 3M. Manufacturing companies such as 3M have extensive infrastructure, which in turn would support a fair amount of long-term debt in the capital structure. Also, companies with a large base of fixed assets usually have associated deferred tax liabilities. Current liabilities would reflect accounts payable, accruals and taxes, as well as the current portion of long-term liabilities.

Profile 3 would be Google. Internet companies do not have much in the way of fixed assets, and correspondingly rely primarily on equity financing, rather than debt, to capitalize the business. Current liabilities would reflect payables and accruals for goods and services.

487. The downgrade by S&P has no direct impact on the financial statements of Sun Microsystems. The downgrade may have an effect on Sun's ability to raise funds by way of issuing debt in the future. The risks of holding debt in this company have increased so the risk premium that debt investors require is likely to
increase and Sun’s financing (interest) costs for future debt issuances are likely to rise. S&P would have reached their conclusions by analyzing Sun’s financial statements using the ratios discussed in Chapter 5 to assess earning power and solvency.

The downgrade may have a significant impact on the market value of the bonds. By lowering Sun’s credit rating, S&P is giving the marketplace an indication that the risks of holding Sun’s debt instruments have increased. This would cause the re-sale market value of Sun’s bonds and notes payable to decline.

488. Financial instruments are defined as cash, an ownership interest, or a contractual right to receive or obligation to deliver cash or another financial instrument. Financial instruments include routine things such as cash, investments, receivables, and payables, as well as more exotic instruments such as derivative financial instruments employed to manage currency and interest rate risks. The terms of financial instruments can have a significant potential impact on the future operations, cash flows, and financial position of a company, which is not captured in the dollar amounts in the financial statements. Accordingly, accounting standards require additional disclosures to help the user evaluate the associated risks and assess their possible impact on the financial statements.

489. Home Depot's leases require monthly or annual payments, probably in equal amounts but may have percentage of sales provisions requiring additional payments to be made. Many leases also require payments for property taxes, insurance and other executory costs.

NIKE's bond is a written legal obligation to pay a certain amount (or amounts) at a certain time (or times). For most bonds there are periodic interest payments for a term of years, with a final payment of principal upon maturity.

The Foothill/Eastern Transportation Corridor Agency zero coupon bond is a debt security issued by an entity to investors in exchange for cash. The entity that issues a zero coupon bonds and receives the cash normally agrees to make a single large principal payment whereupon the obligation is terminated.

489. A lease is a contract granting use of property for a specified period of time in exchange for payment(s).

A note is a written legal obligation to pay a certain amount (or amounts) at a certain time (or times).

A bond is a debt security issued by an entity to investors in exchange for cash. The entity that issues the bonds and receives the cash normally agrees to make cash interest payments to the bondholders until a specific future date called maturity whereupon a large principal payment is made and the obligation is terminated.

490. The interest rates disclosed by Hewett Packard appear to be effective rates. Leases usually don’t have stated rates, only effective rates. It is impossible to tell from this disclosure if these debts are interest-bearing or not.
492. The interest expense reported during each period is computed by multiplying the effective interest rate by the balance sheet value of the obligation as of the beginning of the period. For Sherwin Williams 2008 interest expense would be 7.45 percent of $304 million, or $22.64 million.

494. The present value of the future cash payments associated with these debts would be equal to the $50.7 billion liability net of the $219 unamortized discount, or $50,481 million. The discount is the excess of the face value of the bonds over the price received upon issuance. The discount indicates that the stated interest rate on the bonds was lower than the effective rate at the time the bonds were issued. The bond discount is amortized over the term of the bonds, and is reduced annually. The unamortized discount would be equal to the original discount (determined at the time of issuance) less the cumulative amounts of amortization recognized annually during prior years. The discount is amortized using the effective interest method. By using this method of amortization, the net amount of the liability for the bonds (ie. the bond principal less the unamortized discount) will always equal the present value of the future cash payments associated with these debts.

497. CBS would want an option to redeem long-term debt, especially debt such as the debentures mentioned which are scheduled for repayment over 20 years from now, to protect itself in the event interest rates and other economic conditions change. For instance, if interest rates drop, CBS could lower its interest cost by redeeming the debentures and replacing them with bonds bearing a lower interest rate.

497. Debentures are unsecured bonds. Bonds are issued at a discount when the market or effective rate of interest at the time of issuing the bonds is greater than the stated or coupon rate specified in the bond contract.

498. If the effective rate of the Exxon Mobil debentures was 5 percent and the debentures were issued at a discount, it means that the stated rate was below 5 percent. The stated rate in the bond contract specifies the fixed amount of interest to be paid. If the effective rate is higher, it means the market demands a higher return, and would therefore would price the bond at a lesser amount, based on the present value of the future interest and principal payments using the effective or market rate.

502. Proceeds received on January 1 from the bonds were as follows:

\[
\text{PV of semi-annual interest (PV of annuity: } n=20, \ i=2.75\%) \\
\text{plus} \\
\text{PV of face value (PV lump sum: } n=20, \ i=2.75\%) \\
\]

\[
(.0525 \times 50,000,000)/2 \times 15.24596 \\
\text{plus} \\
50,000,000 \times .58350 \\
\]

(present value factors for fractional percentages were interpolated from the tables in Appendix B and are inexact)
$20,010,323
plus
$29,175,000
$49,185,323

Interest for the first year, would be as follows:

First six months:
Original proceeds of $49,185,323
x [effective rate of interest (5.5%)/2] = $1,352,596

Second six months:
Present value at the end of the first six months
x [effective rate of interest (5.5%)/2]

($49,185,323 + 1,352,596 – 1,312,500)
x .02.75

$1,353,699

TOTAL INTEREST EXPENSE FOR YEAR 1
$2,706,295

504. The fair value of the debt changed significantly between 2007 and 2008. The increase in the value of the debt would be attributable to a decline in the (market) interest rates created by the collapse of the economy in 2008. Johnson and Johnson’s long term debt became more valuable because the fixed interest payments due on their debt greatly exceeded the market interest rates.

505. When interest rates go down, bond prices go up. This is because the fixed interest payments promised in the bond contracts become more valuable when market interest rates decline.

507. Operating leases are treated as pure leasing or rental arrangements. The property would be on the books of the lessor. J.C. Penney, as lessee, would not recognize any asset or liability on its books, but simply record rent expense on the income statement as the rent is paid or accrued.

508. Assets under capital leases of $1.03 billion would be shown as an asset on the balance sheet, and the capital lease obligation of $1.3 billion would be shown on the balance sheet as a liability. The asset value represents the present value of the total of the future lease payments as of the inception of the lease, less accumulated depreciation recognized through year-end fiscal 2009. The liability represents the present value of the remaining payments under the lease as of fiscal year-end 2009, computed using the effective interest rate determined as of the inception of the lease.

510. SUPERVALUE appears to be practicing off-balance-sheet financing more aggressively than Wal-Mart. Although both companies have higher minimum lease payments under their operating leases than they do for their capital leases, the proportion of total minimum lease payments under operating leases is higher
for SUPERVALUE than for Wal-Mart. Capital leases are reported on the balance sheet as both a property right and a liability. Operating leases do not appear as liabilities on the balance sheet. Therefore operating leases are considered a means of off-balance-sheet financing. To make the financial ratios of the two companies more comparable, an analyst could make adjustments to the balance sheets of the two companies to assume that all the leases were capitalized and then use the adjusted balance sheets in the calculation of the relevant financial ratios.

511. High debt levels can have an adverse effect the liquidity, cash flow, and earning power of a company. Interest expense is a drain on operating income and cash flow. It also has a negative effect on liquidity. The debt to equity ratio would improve if Prada was successful in implementing the plan to reduce debt levels and increase equity. Cash flows and operating profits would improve because of the reduction in interest costs.