The *stated rate* of interest on a bond is the contract rate or face rate applying to the face or principal. It is the rate that is set when the bonds are issued. We use the stated interest rate in determining the periodic interest payment. The *effective interest rate* is the yield on the bonds after the premium or discount adjustment.

This difference is due to the discount of 5% on the $2,000,000. The market rate of interest on similar grade bonds is higher than 10% percent; therefore, the bonds of Atlanta Sales Company are selling at a discount of 5%, which decreases the net proceeds by $100,000 ($2,000,000 x 0.05). Because the investors in the bonds will receive the full face value of $2,000,000 at maturity, they will receive an added interest element equal to the discount. Thus, the net effective yield will be higher than the 10%.

Both bonds payable and interest payable have the following characteristics: (a) they require future transfer of assets to liquidate them; (b) the entity has little or no discretion to avoid paying them; and (c) the transactions that created them have already happened. Therefore, they both qualify as liabilities.

Differences between stock and bonds are:

<table>
<thead>
<tr>
<th>Bonds</th>
<th>Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bondholders are creditors.</td>
<td>Stockholders are owners.</td>
</tr>
<tr>
<td>Bonds Payable is a long-term liability account.</td>
<td>Stock is a stockholders' equity account.</td>
</tr>
<tr>
<td>Bondholders, along with other creditors, have primary claims on assets in liquidation.</td>
<td>Stockholders have residual claims on assets in liquidation.</td>
</tr>
</tbody>
</table>
Bonds

Interest is typically a fixed charge. It must be paid or the creditors can begin bankruptcy proceedings.

Interest is a valid expense.

Interest is deductible in arriving at both taxable and business income

Bonds do not carry voting rights.

Stock

Dividends are not fixed charges. Preferred dividends are at best only contingent charges.

Dividends are not expenses. They are distributions of net income.

Dividends are not deductible in and arriving at taxable or business income.

All stock carries voting rights unless expressly denied by contract, as is usually the case with preferred stock.

Q13-5

a. Registered bonds are issued in the name of bondholders. Complete ownership records are maintained by the debtor corporation, and the bonds require endorsement before they are transferred.
b. Secured bonds are those which pledge certain of the corporate property as security for the bond.
c. Unsecured bonds are commonly referred to as debenture bonds. The holders of unsecured bonds rank as general or ordinary creditors of the corporation and rely upon the general credit of the corporation.
d. Serial bonds mature serially, meaning that a portion of the outstanding bonds will mature and be paid off in installments at stated intervals.
e. Convertible bonds are those which give the bondholder an option to exchange the bonds for capital stock.

Q13-6

a. Some factors involved in determining whether to issue additional common stock or 10% bonds are: (1) financial leverage; (2) income taxes; and (3) control (issuing additional common stock may dilute control of the business).
b. Yes, if additional common stock is issued, it would affect the present control of the common stockholders. Depending on the financial leverage, bonds would increase or decrease the earnings per share to the common stockholders.

Q13-7

a. Since the bonds carry an inherent promise to pay not only the face value at maturity but six months interest on each interest date, it is customary in these cases for the investor to pay the stipulated price of the bonds plus this accrued interest from the last interest date.
b. No, the price of a bond is quoted without accrued interest. The buyer pays the quoted price plus accrued interest.

Q13-8

A corporation may retire its bond in two ways:
1. Paying cash at maturity. The bonds are retired by payment of cash.
2. Buying before maturity. Purchase or call bonds before maturity by paying cash.
Q13-9  No. The total amount of premium or discount amortized over the life of the bond will be the same under either method. The difference between the methods is that by using the straight-line method, the amount of amortization of discount or premium is uniform throughout the life of the bond issue. Using the effective interest method, the amount of amortization will not be uniform throughout the life of the issue. If the bonds are issued at a discount, amortization will be greater in the later years of the issue. If the bonds are issued at a premium, amortization will be greater in the later years of the issue. We calculate bond interest expense by multiplying a constant rate of interest by the carrying value of the bonds.

Q13-10  The effective interest method of amortization yields an interest expense figure that is a constant percentage of the carrying value of the bonds. Therefore, the effective interest method more correctly measures bond interest expense each period than straight-line.

Q13-11  The market rate constantly changes due to changes in economic conditions. The stated interest rate is fixed for the life of the bond by the contract. It does not change.

Q13-12  a. Common stock sells at a premium if the market price exceeds the par or stated value. Generally companies do not attempt to set par at the market price. Bonds sell at a premium because the stated rate of interest on the particular bond is higher than the market rate of interest on bonds of similar risk.

b. Revenue does not result from either. Both are sources of long-term financing. Revenue results only from inflows of assets received in exchange for services rendered, sales of products or merchandise, and earnings from interest and dividends on investments.
E13-13  Issuance of Bonds Payable at Face Value and Recording of Interest
LG 2

GENERAL JOURNAL

2011
1. Jan. 1  Cash  600,000
   Bonds Payable  600,000
   To record the issuance of the bonds at face.

2. Jul. 1  Interest Expense  36,000
   Cash  36,000
   To record the semiannual interest expense.

3. Dec. 31 Interest Expense  36,000
   Interest Payable  36,000
   To record accrued interest on bonds payable.

2012
4. Jan. 1  Interest Payable  36,000
   Cash  36,000
   To record payment of interest previously recorded.

E13-14  Premium and Discount Concepts
LG 3

  a. Discount      d. Premium
  b. Premium       e. Premium
  c. Discount      f. Discount

E13-15  Calculation of Bond Issue Price (Requires familiarity with Present Value
       Concepts)

a. Present value of face amount of $100,000
   $100,000 (a single sum) will be paid in 20 periods
   at a market rate of 4.5% ($100,000 x 0.415)  $ 41,500

   Present value of 20 interest payments of $5,000
   Twenty $5,000 interest payments (an annuity) at market rate of 4.5%
   [($100,000 x 0.10 x 1/2) x 13.008]  65,040
   Total price to yield 9% annually  $ 106,540
b. Present value of face amount of $100,000
   $100,000 (a single sum) will be paid in 20 periods
   at a market rate of 5.5% ($100,000 x 0.343)   $ 34,300
   Present value of 20 interest payments of $5,000
   Twenty $5,000 interest payments (an annuity) at
   market rate of 5.5% [($100,000 x 0.10 x 1/2) x 11.950]  59,750
   Total price to yield 11% annually      $ 94,050

E13-16  Issuance of Bonds at Premium: Straight-Line Amortization Method

LG 4

GENERAL JOURNAL

2011

1. Jan.  1  Cash                            2,080,000
       Bonds Payable                    2,000,000
       Premium on Bonds Payable        80,000
       To record the issuance of the     
       bonds at 104.

2. Jul.  1  Interest Expense                116,000
       Premium on Bonds Payable        4,000
       Cash                            120,000
       To record payment of semi-      
       annual interest and amortization
       ($80,000 ÷ 20 = $4,000).

3. Dec.  31 Interest Expense                116,000
       Premium on Bonds Payable        4,000
       Interest Payable                120,000
       To accrue the interest for six   
       months and record amortization  
       of $4,000.

4. Schedule proving interest cost:

   Cash payments to be made:
       Face amount of bonds at maturity   $ 2,000,000
       Total interest to maturity (20 x $120,000)  2,400,000
       Total cash to be paid               $ 4,400,000

   Cash received when bonds were issued
       $2,000,000 x 104%                   2,080,000
       Total interest cost for 10 years    $ 2,320,000

   Semiannual interest cost assuming
   straight-line amortization:
       $2,320,000 ÷ 20 semiannual periods.   $ 116,000
**E13-17  Issuance of Bonds at Premium: Effective Interest Method of Amortization**  
**LG 4**

**GENERAL JOURNAL**

2011

1. Jul. 1 Cash
   
   Bonds Payable 647,856
   Premium on Bonds Payable 600,000
   Premium on Bonds Payable 47,856
   To record the issuance of
   yield 11%.

2011

2. Dec. 31 Interest Expense
   
   (5 1/2% x $647,856) 35,632
   Premium on Bonds Payable 368
   Interest Payable 36,000
   (6% x $600,000)
   To accrue the bond interest
   and record the amortization
   of the premium.

2012

3. Jul. 1 Interest Expense
   
   (5 1/2% x $647,488) 35,612
   Premium on Bonds Payable 388
   Cash 36,000
   To record the bond interest
   expense and the amortization
   of the premium.

**E13-18  Issuance of Bonds at Discount: Straight-line Amortization**  
**LG 5**

**GENERAL JOURNAL**

2011

1. Jul. 1 Cash
   
   Discount on Bonds Payable 1,900,000
   Bonds Payable 100,000
   Bonds Payable 2,000,000
   To record issuance of bonds
   payable at 95.

2. Dec. 31 Interest Expense
   
   Discount on Bonds Payable 125,000
   Cash 5,000
   Cash 120,000
   To record bond interest and
   amortization ($100,000 ÷ 20 = $5,000).
E13-18  (continued)

3. Schedule proving interest cost

**Cash payments to be made**
- Face value of bonds at maturity $2,000,000
- Total interest to maturity (20 x $120,000) 2,400,000
- Total cash to be paid $4,400,000

**Cash received when bonds were issued**
- $2,000,000 x 0.95 1,900,000
- Total interest cost for 10 years $2,500,000

**Semiannual interest cost assuming straight-line amortization**
- $2,500,000 ÷ 20 semiannual periods $125,000

E13-19  Issuance of Bonds at Discount: Effective Interest Method of Amortization
LG 5

**GENERAL JOURNAL**

2011
1. Jul. 1  Cash  1,885,700
   Discount on Bonds Payable  114,300
   Bonds Payable  2,000,000
   To record the issuance of bonds at a price to yield 12%.

2. Dec. 31  Interest Expense  113,142
   (6% x $1,885,700)
   Discount on Bonds Payable  3,142
   Cash (5 1/2% x $2,000,000)  110,000
   To record interest expense and amortization of discount.

2012
Jun. 30  Interest Expense  113,331
   (6% x $1,888,842)
   Discount on Bonds Payable  3,331
   Cash  110,000
   To record interest expense and amortization of discount.
### E13-20 Issuance of Bonds between Interest Dates

**LG 6**

#### GENERAL JOURNAL

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 1</td>
<td>Cash ($800,000 + $32,000)</td>
<td>832,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bonds Payable</td>
<td></td>
<td>800,000</td>
</tr>
<tr>
<td></td>
<td>Interest Payable</td>
<td></td>
<td>32,000</td>
</tr>
<tr>
<td></td>
<td>To record the issuance of the bonds between interest dates.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 31</td>
<td>Interest Expense</td>
<td>16,000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest Payable</td>
<td>32,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td>48,000†</td>
</tr>
<tr>
<td></td>
<td>To record payment of semiannual interest.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*$800,000 x .12 x 2/12 = $16,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>†$800,000 x .12 x 6/12 = $48,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 31</td>
<td>Income Summary</td>
<td>16,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest Expense</td>
<td></td>
<td>16,000</td>
</tr>
<tr>
<td></td>
<td>To close the Interest Expense account.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### E13-21 Accrual of Interest: Straight-line Amortization

**LG 6**

#### GENERAL JOURNAL

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Jul. 31</td>
<td>Cash</td>
<td>212,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td></td>
<td>12,000</td>
</tr>
<tr>
<td></td>
<td>Bonds Payable</td>
<td></td>
<td>200,000</td>
</tr>
<tr>
<td></td>
<td>To record issuance of bonds at 106.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Dec. 31</td>
<td>Interest Expense</td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td></td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>Interest Payable</td>
<td></td>
<td>7,500</td>
</tr>
<tr>
<td></td>
<td>To record accrual of interest and amortization of premium:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>($200,000 x 0.09 x 5/12 = $7,500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>($12,000 ÷ 120 = $100 x 5 = $500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>3. Jan 31 Interest Expense</td>
<td>1,400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest Payable</td>
<td></td>
<td>7,500</td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td>9,000</td>
</tr>
<tr>
<td></td>
<td>To record payment of interest and amortization of premium.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Convertible Bonds

1. If the market price of the common stock goes up and the long-term prospect for the common stock shares looks excellent, it would be advantageous for the bondholder to convert. In other words, if South has become much more prosperous, Big could share in this prosperity better by owning common stock rather than bonds.

GENERAL JOURNAL

2011
Jul. 1 Convertible Bonds Payable 200,000
Premium on Bonds Payable 3,200
Common Stock 20,000
Paid-in Capital—Excess over Par Value, Common 183,200
To record the conversion of bonds by the Big Corporation into 20,000 shares of common stock.

3. Big's conversion of the South bonds will reduce the liabilities on South's balance sheet and increase the stockholders equity. The total of liabilities and stockholders equity will remain the same.

Early Retirement of Bonds

Premium at issuance
Issue price ($200,000 x 1.04) $208,000
Face value 200,000
Premium 8,000
Amortization of premium ($8,000 ÷ 20) 400

Premium balance:
Original balance 8,000
Amortization to date of retirement ($400 x 3) 1,200
Balance 6,800

GENERAL JOURNAL

2012
Dec. 31 Bonds Payable 200,000
Premium of Bonds Payable 6,800
Cash 204,000
Gain on Retirement of Bonds Payable 2,800
To record the early retirement of bonds at 102.
Partial Monthly Amortization Table by Effective Interest Method
($70,000, 15%, 15-year Mortgage)

<table>
<thead>
<tr>
<th>Monthly Payment Date</th>
<th>Liability Balance at Beginning of Month</th>
<th>(3) Monthly Interest Expense (1.25% x Col. 2)</th>
<th>(4) Monthly Payment</th>
<th>(5) Reduction in Liability Balance (Col. 4 - Col. 3)</th>
<th>Liability Balance at End of Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun. 1</td>
<td>$70,000.00</td>
<td>$875.00</td>
<td>$980.00</td>
<td>$105.00</td>
<td>$69,895.00</td>
</tr>
<tr>
<td>Jul. 1</td>
<td>69,895.00</td>
<td>873.69</td>
<td>980.00</td>
<td>106.31</td>
<td>69,788.69</td>
</tr>
<tr>
<td>Aug. 1</td>
<td>69,789.69</td>
<td>872.36</td>
<td>980.00</td>
<td>107.64</td>
<td>69,681.05</td>
</tr>
</tbody>
</table>

GENERAL JOURNAL

2011
Jun. 1 Office Building 80,000.00
Cash 10,000.00
Mortgage Payable 70,000.00
To record purchase of office building.

Jul. 1 Interest Expense 875.00
Mortgage Payable 105.00
Cash 980.00
To record mortgage payment for July.

Aug. 1 Interest Expense 873.69
Mortgage Payable 106.31
Cash 980.00
To record mortgage payment for August.
**SOLUTIONS TO PROBLEMS**

P13-25  Issuance of Bonds at Discount Straight-line Amortization Method

LG 5

**GENERAL JOURNAL**

2011

Mar.  1  Cash  195,800
       Discount on Bonds Payable  4,200
       Bonds Payable  200,000
       To record the issuance of debenture bonds.

Sep.  1  Interest Expense  12,210
       Discount on Bonds Payable  210
       Cash  12,000
       To record semiannual interest and amortization of discount on bonds payable ($4,200 ÷ 20 = $210).

Dec.  31  Interest Expense  8,140
         Discount on Bonds Payable  140
         Interest Payable  8,000
         To accrue the interest on the debenture bonds for four months and to record amortization of discount on bonds payable (4/120 x $4,200 = $140).

2012

Mar.  1  Interest Expense  4,070
         Interest Payable  8,000
         Discount on Bonds Payable  70
         Cash  12,000
         To record semiannual interest and amortization of discount on bonds payable (2/120 x $4,200 = $70).

Sep.  1  Interest Expense  12,210
         Discount on Bonds Payable  210
         Cash  12,000
         To record semiannual interest and amortization of discount on bonds payable ($4,200 ÷ 20 = $210).
P13-25  (continued)

Dec. 31  Interest Expense  8,140
         Discount on Bonds Payable  140
         Interest Payable  8,000
To accrue the interest on debenture bonds for four months and to record amortization of discount on bonds payable (4/120 x $4,200 = $140).

2021
Mar. 1  Interest Expense  4,070
        Interest Payable  8,000
        Discount on Bonds Payable  70
        Cash  12,000
To record semiannual interest and amortization of discount on bonds payable (2/120 x $4,200 = $70).

1  Bonds Payable  200,000
       Cash  200,000
To record retirement of debenture bonds at maturity.

P13-26  Issuance of Bonds at Premium: Straight-line Amortization Method
LG 4, 6

GENERAL JOURNAL

2011
Jun. 1  Cash ($305,975 + $2,500)  308,475
        Bonds Payable  300,000
        Premium on Bonds Payable  5,975
        Interest Payable  2,500
To record the issuance of bonds payable for $305,975 plus accrued interest.

Nov. 1  Interest Expense  12,375
        Interest Payable  2,500
        Premium on Bonds Payable  125
        Cash  15,000
To record semiannual interest and amortize premium (5/239 x $5,975 = $125).

Dec. 31  Interest Expense  4,950
        Premium on Bonds Payable  50
        Interest Payable  5,000
To accrue interest for two months (2/239 x $5,975 = $50).
P13-26 (continued)

Dec. 31
Income Summary 17,325
  Interest Expense 17,325
  To close the Interest Expense account.

2012
May 1
Interest Expense 9,900
  Interest Payable 5,000
  Premium on Bonds Payable 100
  Cash 15,000
  To record the payment of semiannual interest (4/239 x $5,975 = $100).

Nov. 1
Interest Expense 14,850
  Premium on Bonds Payable 150
  Cash 15,000
  To record the payment of semiannual interest (6/239 x $5,975 = $150).

Dec. 31
Interest Expense 4,950
  Premium on Bonds Payable 50
  Interest Payable 5,000
  To accrue the interest expense for two months (2/239 x $5,975 = $50).

31
Income Summary 29,700
  Interest Expense 29,700
  To close the Interest Expense account.

P13-27 Issuance of Bonds at Premium: Effective Interest Method of Amortization
LG 4

Requirement 1.

<table>
<thead>
<tr>
<th>Semiannual Interest Period</th>
<th>(A) Carrying Value at Beginning</th>
<th>(B) Bond Interest Expense (Col. B x 4.5%)</th>
<th>(C) Cash Interest Payment (Face x 5%)</th>
<th>(D) Premium Amortization (Col. D - Col. C)</th>
<th>(E) Carrying Value at End (Col. B - Col. E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At issuance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>$ 532,700</td>
<td>23,972</td>
<td>$ 25,000</td>
<td>$ 1,028</td>
<td>$ 532,700</td>
</tr>
<tr>
<td>2</td>
<td>531,672</td>
<td>23,925</td>
<td>25,000</td>
<td>1,075</td>
<td>530,597</td>
</tr>
<tr>
<td>3</td>
<td>530,597</td>
<td>23,877</td>
<td>25,000</td>
<td>1,123</td>
<td>529,474</td>
</tr>
<tr>
<td>4</td>
<td>529,474</td>
<td>23,826</td>
<td>25,000</td>
<td>1,174</td>
<td>528,300</td>
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</table>
Requirement 2.

**GENERAL JOURNAL**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Cash</td>
<td>532,700</td>
<td>32,700</td>
</tr>
<tr>
<td>Jul. 1</td>
<td>Premium on Bonds Payable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bonds Payable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To record the issuance of the bonds at a price to yield 9%.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 31</td>
<td>Interest Expense (4 1/2% x $532,700)</td>
<td>23,972</td>
<td>1,028</td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To record semiannual interest and amortization by the effective interest method.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Interest Expense (4 1/2% x $531,672)</td>
<td>23,925</td>
<td>1,075</td>
</tr>
<tr>
<td>Jun. 30</td>
<td>Premium on Bonds Payable</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To record semiannual interest and amortization by the effective interest method.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 31</td>
<td>Interest Expense (4 1/2% x $530,597)</td>
<td>23,877</td>
<td>1,123</td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To record semiannual interest and amortization by the effective interest method.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Preparing an Amortization Table and Recording Various Bond Transactions by Effective Interest Method (Requires Familiarity with Present Value Techniques)

Requirement 1.

Present value of face amount of $200,000
$200,000 (a single sum) will be paid in 10 periods
at a market rate of 5.5% ($200,000 x 0.585) $ 117,000

Present value of 10 interest payments of $10,000
Ten $10,000 interest payments (an annuity) at
market rate of 5.5% (($200,000 x 0.10 x 1/2) x 7.538] $ 75,380
Total price to yield 11% annually $ 192,380

<table>
<thead>
<tr>
<th>Semiannual Interest Period</th>
<th>Carrying Value at Beginning</th>
<th>Bond Interest Expense (Col. B x 5.5%)</th>
<th>Cash Interest Payment (Face x 5%)</th>
<th>Discount Amortization (Col. C - Col. D)</th>
<th>Carrying Value at End (Col. B - Col. E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At issuance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>$ 192,380</td>
<td>$ 10,581</td>
<td>$ 10,000</td>
<td>$ 581</td>
<td>192,961</td>
</tr>
<tr>
<td>2</td>
<td>192,961</td>
<td>10,613</td>
<td>10,000</td>
<td>613</td>
<td>193,574</td>
</tr>
<tr>
<td>3</td>
<td>193,574</td>
<td>10,647</td>
<td>10,000</td>
<td>647</td>
<td>194,221</td>
</tr>
<tr>
<td>4</td>
<td>194,221</td>
<td>10,682</td>
<td>10,000</td>
<td>682</td>
<td>194,903</td>
</tr>
</tbody>
</table>

Requirement 2.

GENERAL JOURNAL

2011
May 1  Cash  192,380
Discount on Bonds Payable  7,620
Bonds Payable  200,000
To record the issuance of the bonds on this date at price to yield 11%.

Nov. 1  Interest Expense (Col. C)  10,581
Cash (Col. D)  10,000
Discount on Bonds Payable (Col. E)  581
To record the payment of semiannual interest by the effective interest method.
Dec. 31
Interest Expense (1/3 x $10,613) Col. C 3,537
Interest Payable (1/3 x $10,000) Col. D 3,333
Discount on Bonds Payable 204
To record accrual of bond interest for two months by the effective interest method.

2012
May 1
Interest Payable 3,333
Interest Expense (2/3 x Col. C) 7,076
Cash (Col. D) 10,000
Discount on Bonds Payable 409
To record the payment of semiannual interest.

Nov. 1
Interest Expense (Col. C) 10,647
Cash (Col. D) 10,000
Discount on Bonds Payable (Col. E) 647
To record payment of semiannual interest.

Dec. 31
Interest Expense (1/3 x Col. C) 3,560
Interest Payable (1/3 x Col. D) 3,333
Discount on Bonds Payable (1/3 x Col. E) 227
To record the accrual of bond interest for two months by the effective interest method.

2016
May 1
Bonds Payable 200,000
Cash 200,000
To record the retirement of the bonds at maturity.
Requirement 1.
We would expect the bonds to sell at a discount, because the stated interest rate on the bonds (10%) was less than the market interest rate (12%) at the time the bonds were sold.

Requirement 2.

Present value of the face amount of $2,000,000  
(a single sum) for 20 periods at market rate of 6%  
($2,000,000 x 0.312)  
$ 624,000

Present value of 20 interest payments of $100,000  
($2,000,000 x 10% x 1/2) each at market rate of 6%  
($100,000 x 11.470)  
1,147,000

Total price to yield 12% annually  
$1,771,000

Requirement 3.

$2,000,000 x 0.10 = $200,000.

Requirement 4.

$200,000 x 10 years = $2,000,000.

Requirement 5.

Six months ended June 30, 2011 ($1,771,000 x 0.06)  
$106,260.00

Six months ended December 31, 2011  

[$(1,771,000 + ($106,260 - $100,000)) x 0.06]  
Total interest expense for 2011  
106,635.60

$212,895.60

Requirement 6.

Total interest paid in cash over 10-year bond life  
(Requirement 4)  
$2,000,000

Add: Discount on bonds ($2,000,000 - $1,771,000)  
Total net interest expense over 10-year bond life  
229,000

$2,229,000
P13-29 (continued)

Requirement 7.

Bonds payable
Deduct: Remaining balance in Discount on Bonds

\[ \text{\$229,000} - \left( \text{\$106,260} - \text{\$100,000} \right) - \left( \text{\$106,635.60} - \text{\$100,000} \right) \]

\[ \text{Bond carrying value, December 31, 2011} \]

\[ \text{\$2,000,000.00} \]
\[ \text{\$1,783,895.60} \]

P13-30 Analyzing information
LG 8

Requirements 1 and 2.

PENNY PINCHER DISCOUNT STORES
Summarized Balance Sheet Information:
Liabilities and Stockholders Equity
December 31, 2011
(in thousands)

<table>
<thead>
<tr>
<th></th>
<th>$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current liabilities</td>
<td>100,000</td>
<td>5.0%</td>
</tr>
<tr>
<td>Long-term liabilities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonds payable (Due in 2013)</td>
<td>300,000</td>
<td>15.0</td>
</tr>
<tr>
<td>Notes payable (Due in 2013)</td>
<td>300,000</td>
<td>15.0</td>
</tr>
<tr>
<td>14% Mandatory redeemable preferred stock (Due in 2014)</td>
<td>500,000</td>
<td>25.0</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>1,200,000</td>
<td>60.0%</td>
</tr>
<tr>
<td>Stockholders' equity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common stock</td>
<td>200,000</td>
<td>10.0%</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>600,000</td>
<td>30.0%</td>
</tr>
<tr>
<td>Total stockholders' equity</td>
<td>800,000</td>
<td>40.0%</td>
</tr>
<tr>
<td>Total liabilities and stockholders' equity</td>
<td>2,000,000</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Since the preferred stock has a mandatory redemption condition, it should appear as a liability on the balance sheet. The preferred stock is a long-term liability since it must be paid back in 2014.

Requirement 3.

The level of total debt the Company appears somewhat manageable at the current time. At December 31, 2011, the Company has total liabilities equal to 60.0% of total equities. This means that $0.60 of every dollar of assets is financed with debt. However, there are substantial amounts due in 2013 and 2014 which will require cash.
Requirement 4.

It does not seem likely that the Company can meet interest and principal payments in light of the terms and maturity dates of the debt. In addition to the large percent of liabilities, the level of profitability is modest. Currently, the Company is generating a net income of $60,000 per year. This is only 1.5% of total revenues. Current total yearly interest expense and preferred dividends is $160,000 = ($300,000 x 0.14) + ($300,000 x 0.16) + ($500,000 x 0.14). It is difficult to see how the Company can meet future interest and principal payments with this income level. In addition, a significant amount of debt and preferred stock payments are due in 2013 and 2014.

Requirement 5.

Given the high interest payments and poor profitability, it is difficult to see how the Company could borrow more or have a successful stock issue. I would not recommend lending or investing in the Company.

**SOLUTION TO PRACTICE CASE**

Bonds Payable
LG 4, 6

**GENERAL JOURNAL**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Jan. 1 Cash</td>
<td>840,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td></td>
<td>40,000</td>
</tr>
<tr>
<td></td>
<td>Bonds Payable</td>
<td></td>
<td>800,000</td>
</tr>
<tr>
<td></td>
<td>To record the issuance of 12% convertible bonds</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>($800,000 x 1.05 = $840,000).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun. 30</td>
<td>Interest Expense</td>
<td>46,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td>48,000</td>
</tr>
<tr>
<td></td>
<td>To record semiannual bond interest payment and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>amortization; the amount of amortization is</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$40,000 ÷ 20 semiannual periods = $2,000.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 31</td>
<td>Interest Expense</td>
<td>46,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Premium on Bonds Payable</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td>48,000</td>
</tr>
<tr>
<td></td>
<td>To record semiannual bond interest payment and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>amortization.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Financing with Stock or Bonds
LG 1

Following is a typical student response to this communications problem; actual responses may vary in content and style but should contain as much of this basic information as possible.

TO:       Debbie Silver
FROM:     Student
SUBJECT: Financing with stocks or bonds

I have reviewed the two financing alternatives for your company’s expansion. First, consider the impact on the earnings of the company.

If you select the stock option, at the current market price you will have to issue 50,000 shares of new stock ($500,000 + $10 per share). If you select the bond option, you will have to issue $500,000 in 10%, 20-year bonds. Since the current market rate is equal to the projected stated rate, your bonds should sell at face value.

Assuming your projections of income, comparative income statements of the two options are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Bonds</th>
<th>Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income before interest and taxes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current business</td>
<td>$700,000</td>
<td>$700,000</td>
</tr>
<tr>
<td>Proposed new store (additional income)</td>
<td>150,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Total income before interest and taxes</td>
<td>$850,000</td>
<td>$850,000</td>
</tr>
<tr>
<td>Interest expense ($500,000 x 10%)</td>
<td>50,000</td>
<td>0</td>
</tr>
<tr>
<td>Income before income taxes</td>
<td>$800,000</td>
<td>$850,000</td>
</tr>
<tr>
<td>Income tax expense (30%)</td>
<td>240,000</td>
<td>255,000</td>
</tr>
<tr>
<td>Net income</td>
<td>$560,000</td>
<td>$595,000</td>
</tr>
<tr>
<td>Shares of common stock outstanding</td>
<td>300,000</td>
<td>350,000</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>$1.87</td>
<td>$1.70</td>
</tr>
</tbody>
</table>

Your business should show an increase in total net income in either case (Your current after-tax net income is $420,000). The stock option would show a higher total net income because there is no required interest payment. Yet the bond option would give a higher earnings per share. This is because with the bond option there are fewer shares of stock outstanding. Also, use of the bond option will reduce your income taxes by $15,000. The impact is that with bonds the government is bearing part of the cost of the return to providers of capital (bondholders). In the stock case, dividends paid to the stockholders are not tax deductible by the corporation. You must pay dividends from after-tax income.
Business Decision and Communication Problem  (continued)

Consider other differences between stocks and bonds. Stock has the advantage of raising the capital without committing your business to fixed interest payments. With any new business project there is a risk of not meeting the income projections. Using stock for financing avoids the mandatory nature of interest payments. However, stock has the disadvantage of diluting the ownership. If you are unable to purchase 60% of the new shares issued, you will decrease your control over the company. If you purchased none of the new stock, your voting share of the company would decrease to 51% (180,000 ÷ 350,000). Also, with the stock option, your business is not committed to repaying the $500,000 capital in the future.

When the investment project has a rate of return greater than the fixed cost of interest, bonds have an advantage. They will increase the income available to common stockholders. That is why you see the earnings per share increase more with the bond alternative. This impact will be the opposite if the project does not earn a return of 10%. Bonds will require a fixed interest payment of $50,000 every year for the next 20 years. It makes no difference if your business is profitable or not. Also, the business must pay back the $500,000 in principal after the 20 years. Using bonds will not affect your voting interest in the business.

There are advantages and disadvantages for both alternatives. If you are comfortable with your estimates of income from the new store, the bond alternative is probably better for you at this time.

**SOLUTION TO ETHICAL DILEMMA**

Presentation of Bond Premium on a Balance Sheet

Individual responses to ethical dilemmas will vary. The technical and ethical issues raised in the following response are central to this dilemma; look for them in students answers and be prepared to discuss them with students in class.

The request that your client has made is improper under generally accepted accounting principles. Under no circumstances should you show a premium on bonds payable as part of stockholders equity. Doing so will undervalue liabilities. It will also overstate stockholders equity. He is correct in stating that he will only repay $2,000,000 at maturity. But eliminating the premium ignores the impact on future bond interest expense. In future years, the business will be paying out more in bond interest than it will recognize in interest expense. This fact must be disclosed in the financial statements.

As the auditor of the statements, you will express an opinion on the fairness of the statements. If your client does not include the premium, you must qualify your audit opinion. It would be unethical not to call statement users attention to the absence of the premium. You would be exposing yourself to potential liability. You must tell your client that your position is firm on the inclusion of the premium on the balance sheet. If the client chooses to go elsewhere, that is a risk that you must take. In all likelihood, the client will not be able to find an auditor who will agree to the request. If he does, it is better that that person have the problem than you.
Income Statement Responses:

1. Total revenues in 2008 ($5,971,300,000) are lower than the total for 2006 ($6,185,800,000).

2. The percent decrease in total revenues from 2006 to 2008 is:

\[
(3.5\%) = 100 \times \frac{(214,300,000)}{6,185,800,000} \times \frac{5,971,300,000 - 6,185,800,000}{5,971,300,000} = 3.5\%
\]

Total revenues decreased (3.5)% from 2006 to 2008.

3. The cost of goods sold percent increased from 60.5% in 2006 to 66.3% in 2008. The gross margin percent decreased from 39.5% in 2006 to 33.7% in 2008. This is an unfavorable trend.

4. The percentage of total operating expenses to total revenues increased from 13.6% in 2006 to 16.5% in 2008. This is unfavorable. The operating income percent decreased from 25.9% in 2006 to 17.2% in 2008. This is an unfavorable trend.

5. The percent of net income to total revenues decreased from 16.9% in 2006 to 11.0% in 2008. This is an unfavorable trend.

Balance Sheet Responses:

6. Total assets at December 31, 2008 ($7,828,600,000) are higher than the total at December 31, 2006 ($5,532,200,000).

7. The percent increase in total assets from December 31, 2006 to December 31, 2008 is:

\[
41.5\% = 100 \times \frac{2,296,400,000}{5,532,200,000} \times \frac{7,828,600,000 - 5,532,200,000}{7,828,600,000} = 41.5\%
\]

Total revenues decreased while total assets have increased over the three-year period. This is an unfavorable trend.

8. The largest asset investments for the company are finance receivables. These items make up 48.8% of the company's assets at the end of the most recent year.

9. The percent increase in finance receivables between 2006 and 2008 is:
81.9% = \frac{1,721,100,000}{2,101,300,000} \times \frac{3,822,400,000 - 2,101,300,000}{2,101,300,000}

Finance receivables increased by 81.9% compared to an decrease in total revenues of (3.5)%. This is unfavorable. Finance receivables are increasing while total revenues are decreasing.

10. On the balance sheet, refer to the common-size percent for total liabilities each year. The percent of liabilities has increased from 50.2% of total assets in 2006 to 73.0% in 2008. This is unfavorable.

**Integrative Income Statement and Balance Sheet**

11. This company is operating less efficiently in 2008 than in 2007. We conclude this by comparing the total asset turnover for the two years that were 1.10 times in 2007 and 0.89 times in 2008. Each dollar of investment in assets generated less revenue in 2008 than in 2007. This is unfavorable.

**Ratio Analysis Responses:**

12. The current ratio is lower in 2008 than in 2006.


14. For the year ended December 31, 2008, the accounts receivable turnover ratio 1 is worse this year compared to the previous year. In 2008, the accounts receivable turnover ratio 1 is 25.01 times. This is a decrease from 37.89 times in 2007. This is unfavorable.

15. For the year ended December 31, 2008, the accounts receivable turnover ratio 2 (based on year-end receivables) is worse at 20.15 times compared to the 2008 accounts receivable turnover ratio 1 (based on average receivables) at 25.01 times.

16. For the year ended December 31, 2008, the inventory turnover ratio 1 is worse this year compared to the previous year. In 2008, the inventory turnover ratio is 10.55 times. This is a decrease from 11.73 times. This is unfavorable.

17. For the year ended December 31, 2008, the inventory turnover ratio 2 (based on year-end inventory) is worse at 9.87 times compared to the 2008 inventory turnover ratio 1 (based on average inventory) at 10.55 times.

18. The return on total assets (ROA) ratio is worse in 2008 than in 2007. In 2008, the ROA is 9.71%. This is a decrease from 16.69% in 2007. This is unfavorable.
Finance Receivables and Debt Financing (Chapter 13 focus)

19. Selling on account is important for Harley-Davidson. Finance receivables made up 48.8% of total assets. If this were combined with accounts receivable, it would make up over one-half of total assets.

20. As of December 31, 2008, accounts receivable and finance receivables made up 52.6% of Harley-Davidson's total assets.

21. If Harley's ability to issue debt was sharply reduced, revenues would likely decrease. Harley is dependent on financing the sale of their product.

22. If the market interest rates rise sharply in 2009 and Harley's debt has a fixed interest rate of 7%, the market value of their debt would fall. When the market interest rates rise, investors will pay less for fixed interest rate debt to adjust the effective interest rate that they earn to the market rate.